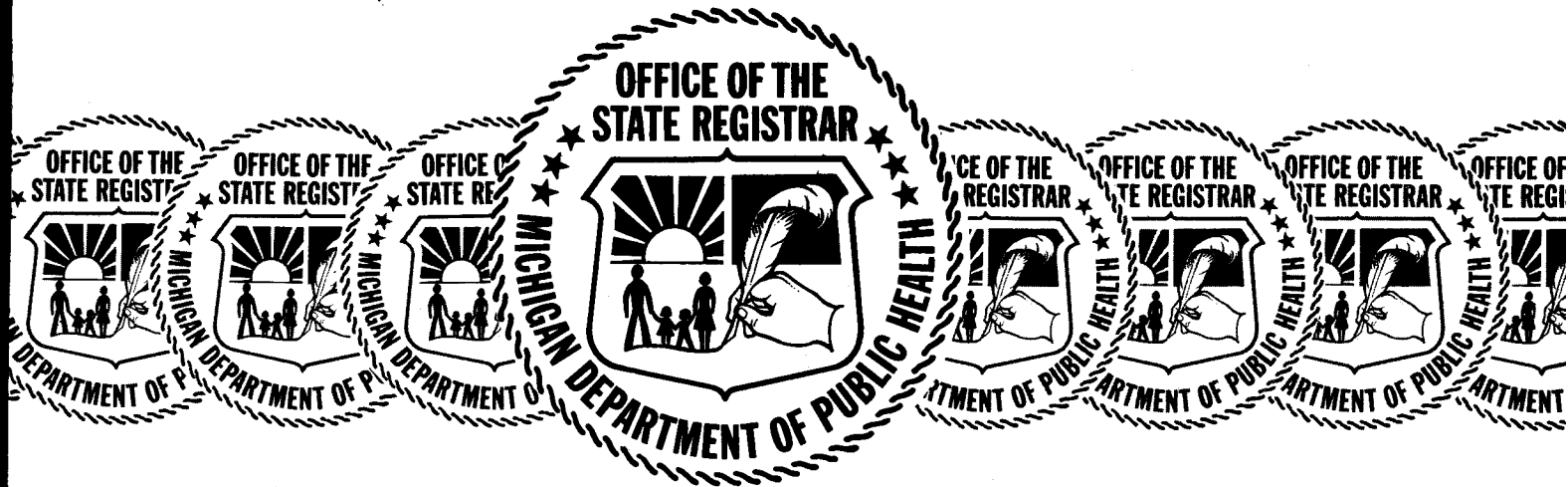


MICHIGAN DEPARTMENT
OF PUBLIC HEALTH

Michigan
**HEALTH
STATISTICS**



1989

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1989

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INTRODUCTION

The 1989 edition of Michigan Health Statistics is a statistical summary of vital events for calendar year 1988. Data relative to population, births, deaths, fetal deaths, marriages, divorces and communicable diseases are included. Although most of the data in this report pertain to events occurring in 1989, data for prior years have been included to illustrate trends. Most of the tabulations refer to Michigan residents. Some events, however, such as marriages and divorces are tabulated with respect to where the event occurred rather than the residence of the party or parties involved.

As a certain number of Michigan residents either deliver babies or die out of state each year, it is necessary to include data obtained from the certificates of other states in any tabulations pertaining to Michigan residents. This report includes all such out-of-state certificates received prior to April 30, 1990, and all in-state certificates and records received prior to March 15, 1990. Although a few additional records for the calendar year 1989 were received after these filing dates, their exclusion from this report is statistically insignificant.

This report is composed of county and state vital event profiles as well as the following sections and appendices:

1. Natality Section
2. Mortality Section
3. Marriage and Divorce Section
4. Reference Appendix

Comments or suggestions concerning the content and format of this report are always welcome. Any additional needs for data or analyses may be directed to the Office. A summary of prepared vital statistics tabulations, Index to Michigan Vital Statistics 1960 to Present, is also available. This index lists the types of tabulations and data available. The Office will make every attempt to comply with requests for data within the limitations of staff and resources.

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TECHNICAL NOTES, DEFINITIONS, RATES AND RATIOS

DEFINITIONS

BIRTH WEIGHT - Weight of fetus or infant at time of delivery.

FETAL DEATH - Death prior to the complete expulsion or extraction from its mother of a product of conception, having passed through at least the 20th week of gestation or weighing at least 400 grams; the fetus shows no signs of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. (Note: This includes both spontaneous and induced terminations.)

FIRST BIRTH - A live birth where the maternal medical history indicates there were no prior live births to the mother.

GESTATIONAL PERIOD - Number of completed weeks elapsed between the first day of the last menstrual period and the date of delivery.

HEBDOMADAL DEATH - Death occurring to an individual less than 7 days of age.

INFANT DEATH - Death occurring to an individual less than 1 year of age.

INFANT DEATH/LIVE BIRTH MATCHED FILE COMPLETENESS RATIO - The number of matched records for infant deaths and live births for deceased Michigan resident live births divided by the number of Michigan resident or presumed resident live births known to be deceased x 100.

INTERPREGNANCY TIME PERIOD - Birth date minus date of last termination, whether

a live birth or fetal death, in months. Time periods of zero length are dropped to exclude 2nd or higher births of multiple deliveries.

LEADING CAUSES OF DEATH - Deaths are grouped into 72 categories dependent upon the underlying cause of death. Ranks are assigned by organizing these categories according to the number of deaths in each category from most frequent to least.

LIFE EXPECTANCY - A hypothetical calculation of the average age at death for a cohort of persons subject to the age-specific mortality rates observed over a given time period.

LIFE TABLE VALUES:

nq_x = The proportion of persons in the cohort alive at the beginning of an age interval (x) who will die before reaching the end of that age interval ($x+n$).

l_x = The number of persons living at the beginning of an age interval (x) out of an original cohort of 100,000.

ndx = The number of persons who would die during an age interval (x to $x+n$) out of an original cohort of 100,000.

nL_x = The number of person-years that would be lived within an indicated age interval (x to $x+n$) out of an original cohort of 100,000 alive for all or part of the interval.

Tx = The number of person-years that would be lived after the beginning of an age interval (x) by an original cohort of 100,000 until all are assumed to have died.

ex = The average remaining lifetime (in years) for an individual person who survives to the beginning of an indicated age interval (x).

LIVE BIRTH - A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Effective on November 9, 1981, the definition of a live birth is established in administrative rule number 325.3201 as follows:

"Live birth" means the complete expulsion or extraction from a pregnant woman of a product of human conception which, after such expulsion or extraction, shows any evidence of life, whether or not the umbilical cord has been cut or the placenta is attached.

LIVE-BIRTH ORDER - Order number is equal to number of previous live births plus current birth.

LOW-WEIGHT BIRTH - Birth in 1984 or later wherein the birth weight is less than 2,500 grams (approximately 5 lbs., 8 oz.) or birth before 1984 wherein the birth weight is 2,500 grams or less.

MATERNAL DEATHS - Those deaths wherein the physician has designated a maternal condition as the underlying cause of death (9th Revision ICD codes 630-676).

MEAN - The average of a set of values, equal to the sum of the values divided by the number of values.

MEDIAN - The central value of a distribution of values wherein the same percentage of observations are above this point as are below.

MINOR CIVIL DIVISION - City, village, or township.

NEONATAL DEATH - Death occurring to individual less than 28 days of age.

OCCURRENCE - Place where the event actually occurred.

PERINATAL DEATH - Fetal death and death under 1 week of age.

PROBABILITY OF EVENTUALLY DYING FROM A GIVEN CAUSE OF DEATH - The chance of death due to a given cause rather than some competitive cause over the course of a lifetime based on current mortality data and life expectancy techniques.

RACE - Race for mother, father, or decedent is as stated on certificate. Race of child is determined from the race of the parents.

REMAINING YEARS OF LIFE - A hypothetical calculation of the average number of years a cohort of persons will live given that they have reached a specific age and assuming they are subject to the age-specific mortality rates observed over a given time period.

RESIDENCE - Usual place of residence for the person to whom the event occurred. For births and fetal deaths, residence is defined as the mother's usual place of residence.

TOTAL BIRTHS - Live births and fetal deaths.

UNDERLYING CAUSE OF DEATH - That condition giving rise to the chain of events leading to death.

VERY LOW-WEIGHT BIRTH - Birth in 1984 or later wherein the birth weight is less than 1,500 grams (approximately 3 lbs., 4 oz.) or birth before 1984 wherein the birth weight is 1,500 grams or less.

YEARS OF POTENTIAL LIFE LOST - The number of years between the age at death and 65 years of age for individuals dying before age 65.

RATES AND RATIOS

AGE-ADJUSTED DEATH RATE - A summary rate of death that is developed using a standard population distribution to improve the comparability of rates for areas or population subgroups with differing age distributions. When calculated by the direct method, as in this report, age-specific death rates for a geographic area or population subgroup are multiplied by the standard population by specific age and the products summed and divided by the total standard population. Age-adjusted death rates represent the mortality experience that would have occurred in a standard population had the age-specific rates of the area or population subgroup been experienced by the standard population. These rates are presented as per 100,000 population.

AGE-SPECIFIC BIRTH RATE - Number of resident live births to women of a specific age

divided by total resident female population of specific age $\times 1,000$.

AGE-SPECIFIC DEATH RATE - Number of resident deaths in specific age group divided by total resident population in specific age group $\times 100,000$.

AGE-SPECIFIC DEATH RATE BY CAUSE OF DEATH - Number of resident deaths in specific age group and from a specific cause divided by total resident population in specific age group $\times 100,000$.

AGE-SPECIFIC MARRIAGE RATE - Number of occurrent marriages in specific age group by sex divided by total resident population in specific age and sex group $\times 1,000$.

CAUSE-SPECIFIC RATE - Number of resident deaths due to a specific cause divided by total resident population $\times 100,000$.

CONGENITAL ANOMALY RATE - Number of resident live births with a congenital malformation reported divided by the total number of resident live births $\times 10,000$.

COMMUNICABLE DISEASE CASE RATE - Number of reported cases (specific communicable diseases) divided by total resident population $\times 100,000$.

CRUDE BIRTH RATE - Number of resident live births divided by total resident population $\times 1,000$.

CRUDE DEATH RATE - Number of resident deaths divided by total resident population $\times 1,000$.

DIVORCE RATE - Number of persons (with occurrent divorces and annulments) divided by total resident population x 1,000.

FERTILITY RATE - Number of resident live births divided by total resident female population ages 15-44 x 1,000.

FETAL DEATH RATE - Number of resident fetal deaths divided by total resident live births and resident fetal deaths x 1,000.

FETAL DEATH RATIO - Number of resident fetal deaths divided by total resident live births x 1,000.

FIRST MARRIAGE RATE - Number of occurrent marriages to persons not previously married by sex divided by total resident population by sex x 1,000.

INFANT MORTALITY RATE - Number of resident infant deaths divided by total resident live births x 1,000.

LOW-WEIGHT BIRTH RATIO - Number of resident low-weight births divided by total resident live births x 1,000.

MARRIAGE RATE - Number of resident persons married in an area divided by total resident population x 1,000.

MATERNAL DEATH RATE - Number of resident maternal deaths divided by total resident live births x 10,000.

NEONATAL DEATH RATE - Number of resident neonatal deaths divided by total resident live births x 1,000.

NO PRENATAL CARE RATIO - Number of resident live births to mothers with no prenatal care divided by total resident live births x 1,000.

PERINATAL DEATH RATE - Number of perinatal deaths divided by total resident live births and resident fetal deaths x 1,000.

RATE OF NATURAL INCREASE - (Total resident live births minus total resident deaths) divided by total resident population x 1,000.

TOTAL FERTILITY RATE - Sum of (age-specific birth rates) x (number of years in age group) for each age group from ages 10-14 through 45-49 years.

RELIABILITY OF RATES

Care should be taken in drawing specific inferences from comparisons of rates for different areas or different periods of time. Rates based on a small number of events or for a small area tend to exhibit considerable variation from time period to time period or place to place. Excessive variation in rates not only negates their utility as estimators of the probability of an event occurring but also their usefulness for comparative purposes.

Also, one should recognize the limitations of using unadjusted rates in attempting to attribute rate differences to particular factors. For example, one should not attempt to state that there was a significant difference in rates for two geographic areas for atherosclerosis without first adjusting the rates to negate the effects of differing age distributions in the two areas.

Many times there are simply not sufficient data available to adequately adjust rates for all possible confounding factors. For this reason the reader should exercise diligence

and caution while attempting to draw substantive conclusions when comparing vital statistics rates.

QUALIFICATIONS AND LIMITATIONS OF DATA AND CALCULATIONS

UNDERREGISTRATION OF EVENTS

The underregistration of vital events in Michigan is considered to be a minimal problem, particularly for births and deaths. Tests of registration completeness conducted in conjunction with the 1950 Census indicate that the registration of births was 98.5 percent complete, and that death registration was even more complete. The number of certificates received too late for inclusion in annual statistical files is insignificant when examining statewide patterns.

GEOGRAPHIC ALLOCATION

The allocation of events on a residence or occurrence basis is for the most part accurate and complete. However, allocations to minor civil divisions are subject to question in some instances. In those cases where the respondent completes the residence item with a mailing address, geographic allocation is sometimes undeterminable and the record receives an unknown minor civil division code.

FETAL DEATHS

Fetal deaths in Michigan include only those conceptions that have passed through 20 weeks gestation or that weigh 400 grams or more. Prior to the introduction of a new reporting form for fetal deaths on September 30, 1978, Michigan law required only the reporting of deaths of fetuses which had passed through 20 weeks gestation. Inadequacies in determining the gestational age of the fetus may have resulted in some under-

reporting of fetal deaths. The change in definition has had little impact on the number of fetal deaths reported.

COMPARABILITY IN CAUSE OF DEATH STATISTICS

The reader should bear in mind two major limitations in interpreting changes in cause-of-death statistics. Changes in nomenclature and the classification scheme (International Classification of Diseases) and changes in diagnostic practices may seriously affect the comparability of such statistics over time. The classification scheme (ICD) is modified approximately once every ten years to reflect changing medical opinion and practice. The reader is most accurate when comparing cause-of-death certificates which are coded via one revision of the International Classification of Diseases and utilizing the coding practices and procedures in effect at that time.

In order to compare cause-of-death statistics from one revision to the next it is necessary to apply a comparability ratio. Such ratios are developed by comparing the number of deaths assigned to a certain condition or group of conditions under one revision to the number assigned under another revision of the ICD.

In 1979 the 9th Revision of the International Classification of Diseases, WHO, was introduced for coding causes of death and was employed in categorizing the data for 1989.

LIFE EXPECTANCY

The procedure used to obtain the Michigan life table values is called the iterative method. This is a method which has been developed by Felix Moore formerly of the Department of Biostatistics, School of Public Health, University of Michigan.

For the age group 0-1 the method utilizes the algorithm developed by Greville with no iteration. For all subsequent age groups the method of Greville (Keyfitz) is used with three iterations to improve the estimate of ndx and nqx . An iteration procedure is also used for nLx for age groups 75-80 and 80-85 where the accuracy of mortality information is a factor and for obtaining the separation factor for the age group 1-4.

AGE-ADJUSTMENT PROCEDURE AND POPULATION ESTIMATION

Population data for 1970 and 1980 were obtained from the April 1, 1970 and April 1, 1980 census counts. Data for 1980 include revised census data as released by the Census Bureau. The population totals used for 1971-1979 are intercensal estimates prepared by the Census Bureau utilizing the revised 1980 census figures. The breakdowns of these totals by age, race, and sex were prepared by the Office of the State Registrar and Center for Health Statistics. For 1970 and 1980 the proportion of the total population in each age, race, and sex group was computed. Estimates of the proportion of the total population in each age, race, and sex group for the years 1971-1979 were then derived by interpolating between the proportions for 1970 and 1980. These subgroup proportions were then applied to the state totals to obtain population

estimates by age, race, and sex for years 1971-1979.

Population estimates for 1985 through 1989 by age and sex were obtained by adding births, removing deaths and aging the remaining population, using Census Bureau-National Cancer Institute 1984 age, race and sex population estimates. Black and other race estimates for 1984 were prepared by projecting the mean annual change in the race proportions of each age-sex group of the non-white population observed between 1970 and 1980. Revised estimates of the proportion of the total population in each age, race and sex group for the years 1981-1983 were derived by interpolating between the populations for 1980 and 1984.

The age-adjusted rates for Michigan presented in this report for years 1970-1989 were calculated using Michigan resident mortality data and the series of population data described above. Death records with the race not stated were first randomly allocated to the white and other than white groups based on the proportion of Michigan resident deaths in each of the racial categories for that year. Records with sex not stated were randomly assigned to male and female (50 percent each). Records with age not stated were allocated to the age group 85 and over.

In the age-adjustment procedure ten age groups were employed including under 1 year, 1-14 years, ten year age groups from 15-24 years to age 75-84, and 85 years and over. Age-specific rates for the total population and for each subgroup were applied to the same standard population distributed by age. The resulting expected deaths were then

summed over the ten age groups and divided by the total of the standard population to obtain the age-adjusted rate. The standard population selected was the 1940 United States enumerated population. Comparisons can be made between subgroup rates, between rates in different years, and between rates for Michigan and similarly computed rates for the United States.

UNITED STATES DEATH RATES

Death rates for the United States were taken from publications by the National Center for Health Statistics, U.S. Dept. of Health and Human Services. Rates for the United States shown in the series of tables of age-adjusted

death rates for Michigan and the United States are based on the 1980 census enumeration. The U.S. rates for 1971-1980 have been revised as a result of the large difference between the 1980 census enumeration and the previously estimated population for 1980. The 1980 census enumeration was about 5.5 million higher than the estimated population for April 1, 1980.

The unadjusted death rates for the United States for all causes and by cause for 1981 through 1989 quoted in the text and shown in Tables 2.1 and 2.7 were calculated using population estimates based on the 1980 census enumeration.

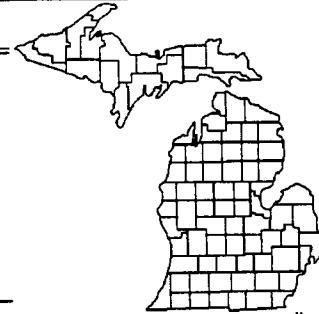
COUNTY AND STATE HEALTH STATISTICS PROFILES

This year for the first time Michigan Health Statistics includes profiles of county and state vital events statistics. In a one page summary form for each county and the state as a whole, these profiles contain those data most often

requested of the Center for Health Statistics by health data users.

For further county or state information, please direct your inquiries to the address or phone number printed in the Introduction.

1989 Profile of Michigan



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989	9,273,431	Total Live Births	148,164	Total Deaths	78,566
Rank Among Counties	—	Teenage Mothers	19,545	Infant Deaths	1,645
Per Square Mile	162.8	Low Weight Births	11,323	Neonatal Deaths	1,070
Median Age	32	First Births	59,157	Postneonatal Deaths	575
Children Ages 1-19:	2,625,579	Median Age of Mother	26	Perinatal Deaths	1,792
				Fetal Death	881
				Maternal Deaths	13
MARRIAGE		DIVORCE			
Marriages	76,210	Divorces	40,276		
Marriage Rate	16.4	Divorce Rate	8.7		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	148,164	16.0	115,186	14.5	29,839	24.3	2,525	20.2
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	19,545	131.9	11,375	98.9	7,811	261.8	277	109.7
Low Weight	11,323	76.4	6,468	56.2	4,612	154.6	177	70.1
Under 1,500 Grams	2,269	15.3	1,102	9.6	1,102	36.9	30	11.9
< 38 Weeks Gestation	25,249	170.4	16,185	140.5	8,513	285.3	429	169.9
Prenatal Care Began in 1st Trimester	115,601	780.2	94,484	820.3	18,868	632.3	1,839	728.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1,645	11.1	946	8.2	672	22.5	27	10.7
Neonatal Deaths	1,070	7.2	602	5.2	454	15.2	12	4.8
Postneonatal Deaths	575	3.9	344	3.0	218	7.3	11	4.4
Perinatal Deaths	1,792	12.0	1,066	9.2	679	22.5	21	8.3
Fetal Deaths	881	5.9	550	4.8	293	9.7	13	5.1

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	78,566	40,585	37,981	66,031	33,628	32,403	11,939	6,618	5,321	596	339	257	
Death Rates	8.5	9.0	8.0	8.3	8.7	8.0	9.7	11.5	8.2	4.8	5.5	4.0	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1,645	243	151	190	656	723	973	2,534	3,547	6,396	14,551	46,953	4
White Male	519	90	59	84	314	351	483	1,119	1,517	3,055	7,269	18,766	2
White Female	427	88	43	63	128	118	192	488	919	1,971	4,791	23,174	1
Black Male	360	34	22	23	159	192	200	610	682	765	1,349	2,222	-
Black Female	312	26	21	15	45	57	83	290	374	530	1,012	2,555	1
Other Male	17	1	4	3	6	3	11	19	30	49	80	116	-
Other Female	10	4	2	2	4	2	4	8	25	26	50	120	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	78,566	847.2	66,031	833.7	11,939	972.0	1,011	38.5
Diseases of the Heart	28,031	302.3	24,170	305.2	3,659	297.9	26	1.0
Malignant Neoplasms	18,264	196.9	15,775	199.2	2,362	192.3	101	3.8
Cerebrovascular Diseases	5,173	55.8	4,432	56.0	706	57.5	9	0.3
Accidents and Adverse Effects	3,228	34.8	2,731	34.5	451	36.7	550	20.9
Chronic Obstructive Pulmonary Diseases and Allied Conditions	2,852	30.8	2,580	32.6	245	19.9	11	0.4
Pneumonia and Influenza	2,633	28.4	2,300	29.0	318	25.9	24	0.9
Diabetes Mellitus	2,052	22.1	1,654	20.9	379	30.9	3	-
Chronic Liver Disease and Cirrhosis	1,170	28.4	855	10.8	307	25.0	1	-
Homicide	1,064	22.1	268	3.4	785	63.9	184	7.0
Suicide	1,043	12.6	928	11.7	104	8.5	100	3.8
Atherosclerosis	832	9.0	780	9.8	47	3.8	-	-
AIDS	329	3.5	174	2.2	155	12.6	2	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Alcona County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	10,675	Total Live Births:	97	Total Deaths:	146
Rank Among Counties:	73	Teenage Mothers:	14	Infant Deaths:	2
Per Square Mile:	15.7	Low Weight Births:	9	Neonatal Deaths:	2
Median Age:	42	First Births:	42	Postneonatal Deaths:	-
Children Ages 1-19:	2,512	Median Age of Mother:	24	Perinatal Deaths:	2
		Fetal Deaths:	-	Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	62	Divorces:	33		
Marriage Rate:	11.6	Divorce Rate:	6.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	97	9.1	97	9.2	-	-	-	-
Teenage Mothers	14	144.3	14	144.3	-	-	-	-
Low Weight	9	92.8	9	92.8	-	-	-	-
Under 1,500 Grams	2	-	2	-	-	-	-	-
< 38 Weeks Gestation	16	164.9	16	164.9	-	-	-	-
Perinatal Care Began in 1st Trimester	81	835.1	81	835.1	-	-	-	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	2	-	-	-	-	-
Neonatal Deaths	2	-	2	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	2	-	2	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	146	93	53	145	92	53	1	1	-	-	-	-	
Mortality Rate	13.7	17.9	9.6	13.7	17.9	9.7	-	-	-	-	-	-	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	1	-	1	-	2	-	5	3	9	15	42	67	-
White Female	1	-	-	-	2	-	4	2	7	12	28	35	-
Black Male	-	-	-	-	-	-	1	1	2	3	14	31	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

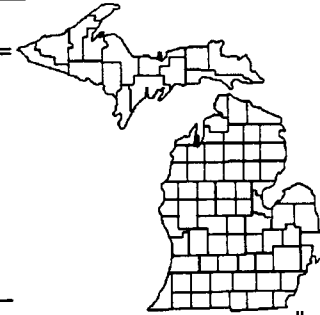
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	146	1,367.7	145	1,370.1	1	-	3	-
Diseases of the Heart	46	430.9	45	421.5	1	-	-	-
Malignant Neoplasms	35	327.9	35	327.9	-	-	-	-
Cerebrovascular Diseases	10	93.7	10	93.7	-	-	-	-
Accidents and Adverse Effects	8	74.9	8	74.9	-	-	3	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	10	93.7	10	93.7	-	-	-	-
Pneumonia and Influenza	5	-	5	-	-	-	-	-
Diabetes Mellitus	3	-	3	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	3	-	3	-	-	-	-	-
Atherosclerosis	2	-	2	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Alger County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	8,754	Total Live Births:	100	Total Deaths:	124
Rank Among Counties:	77	Teenage Mothers:	12	Infant Deaths:	-
Per Square Mile:	9.6	Low Weight Births:	4	Neonatal Deaths:	-
Median Age:	34	First Births:	39	Postneonatal Deaths:	-
Children Ages 1-19:	2,647	Median Age of Mother:	26	Perinatal Deaths:	2
				Fetal Deaths:	2
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	67	Divorces:	36		
Marriage Rate:	15.3	Divorce Rate:	8.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	100	11.4	98	11.7	-	-	2	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	12	120.0	12	122.4	-	-	-	-
Low Weight	4	-	4	-	-	-	-	-
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	8	80.0	8	81.6	-	-	-	-
Prenatal Care Began in 1st Trimester	68	680.0	68	693.9	-	-	-	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	-	-	-	-	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	2	-	2	-	-	-	-	-
Fetal Deaths	2	-	2	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	124	74	50	122	73	49	-	-	-	2	1	1	
Mortality Rate	14.2	17.6	11.0	14.6	18.3	11.1	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	-	-	-	-	-	1	1	2	1	17	41	61	-
White Male	-	-	-	-	-	1	1	1	1	8	27	34	-
White Female	-	-	-	-	-	-	-	1	-	8	14	26	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	1	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

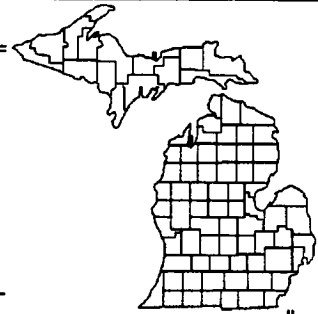
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	124	1,416.5	122	1,456.5	-	-	-	-
Diseases of the Heart	50	571.2	50	571.2	-	-	-	-
Malignant Neoplasms	25	285.6	25	285.6	-	-	-	-
Cerebrovascular Diseases	12	137.1	12	137.1	-	-	-	-
Accidents and Adverse Effects	5	-	5	-	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	-	5	-	-	-	-	-
Pneumonia and Influenza	2	-	2	-	-	-	-	-
Diabetes Mellitus	6	68.5	5	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	-	3	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	4	-	4	-	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Allegan County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	91,236	Total Live Births:	1,410	Total Deaths:	637
Rank Among Counties:	21	Teenage Mothers:	170	Infant Deaths:	10
Per Square Mile:	109.7	Low Weight Births:	64	Neonatal Deaths:	10
Median Age:	31	First Births:	545	Postneonatal Deaths:	-
Children Ages 1-19:	28,395	Median Age of Mother:	25	Perinatal Deaths:	20
				Fetal Deaths:	12
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	739	Divorces:	387		
Marriage Rate:	16.2	Divorce Rate:	8.5		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,410	15.5	1,373	15.5	19	11.1	15	16.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	170	120.6	163	118.7	6	315.8	1	.
Low Weight	64	45.4	63	45.9	1	.	.	.
Under 1,500 Grams	10	7.1	10	7.3	.	.	.	.
< 38 Weeks Gestation	181	128.4	174	126.7	2	.	4	.
Prenatal Care Began in 1st Trimester	1,135	805.0	1,113	810.6	11	578.9	10	666.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	10	7.1	10	7.3	-	-	-	-
Neonatal Deaths	10	7.1	10	7.3	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	20	14.1	20	14.4	-	-	-	-
Fetal Deaths	12	8.4	12	8.7	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	637	343	294	614	333	281	15	6	9	8	4	4	
Mortality Rate	7.0	7.7	6.3	6.9	7.7	6.2	8.8	6.5	11.3	8.6	4	4	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	10	2	4	2	7	7	17	18	39	79	140	312	-
White Male	6	1	4	1	5	4	9	8	31	48	82	134	-
White Female	4	1	-	1	2	2	4	8	7	28	53	171	-
Black Male	-	-	-	-	-	1	2	1	-	-	2	-	-
Black Female	-	-	-	-	-	-	1	-	-	1	1	6	-
Other Male	-	-	-	-	-	-	1	-	1	1	1	-	-
Other Female	-	-	-	-	-	-	-	1	-	1	1	1	-

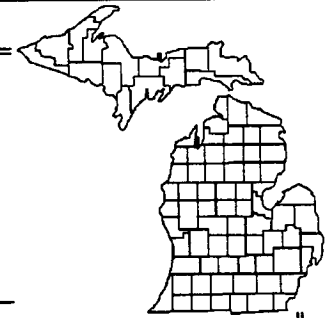
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	637	698.2	614	693.1	15	875.7	15	52.8
Diseases of the Heart	215	235.7	208	228.0	5	.	1	.
Malignant Neoplasms	141	154.5	137	150.2	2	.	.	.
Cerebrovascular Diseases	45	49.3	40	43.8	4	.	.	.
Accidents and Adverse Effects	36	39.5	35	38.4	-	-	8	28.2
Chronic Obstructive Pulmonary Diseases and Allied Conditions	15	16.4	15	16.4	-	-	-	-
Pneumonia and Influenza	32	35.1	31	34.0	-	-	2	.
Diabetes Mellitus	13	14.2	13	14.2	-	-	-	.
Chronic Liver Disease and Cirrhosis	11	12.1	11	12.1	-	-	-	.
Homicide	4	.	1	.	3	.	1	.
Suicide	11	12.1	10	11.0	1	.	1	.
Atherosclerosis	18	19.7	17	18.6	-	-	-	.
AIDS	4	.	4	.	-	-	-	.

Note: Rate is per 100,000 population in specified group.

1989 Profile of Alpena County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	31,717	Total Live Births:	377	Total Deaths:	308
Rank Among Counties:	46	Teenage Mothers:	55	Infant Deaths:	1
Per Square Mile:	55.9	Low Weight Births:	17	Neonatal Deaths:	1
Median Age:	34	First Births:	155	Postneonatal Deaths:	-
Children Ages 1-19:	8,842	Median Age of Mother:	26	Perinatal Deaths:	1
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	286	Divorces:	156		
Marriage Rate:	18.0	Divorce Rate:	9.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	377	11.9	373	11.8	-	-	4	.
Teenage Mothers	55	145.9	53	142.1	-	-	2	.
Low Weight	17	45.1	16	42.9	-	-	1	.
Under 1,500 Grams	1	.	1	.	-	-	-	-
< 38 Weeks Gestation	47	124.7	47	126.0	-	-	-	-
Prenatal Care Began in 1st Trimester	336	891.2	332	890.1	-	-	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	1	.	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	1	.	1	.	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Deaths	308	155	153	306	154	152	-	-	-	2	1	1
Mortality Rate	9.7	10.0	9.5	9.7	10.0	9.5	-	-	-	.	.	.

	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	-	-	1	4	-	11	7	9	35	70	170	-
White Male	1	-	-	1	2	-	8	2	4	20	42	74	-
White Female	-	-	-	-	2	-	2	5	4	15	28	96	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	1	-	-	-	-
Other Female	-	-	-	-	-	-	1	-	-	-	-	-	-

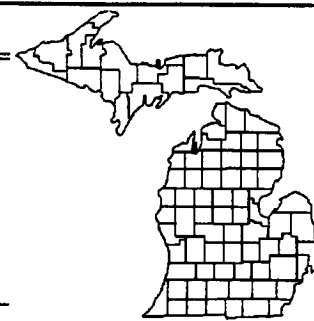
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	308	971.1	306	970.7	-	-	5	.
Diseases of the Heart	113	356.3	112	353.1	-	-	-	-
Malignant Neoplasms	73	230.2	72	227.0	-	-	-	-
Cerebrovascular Diseases	23	72.5	23	72.5	-	-	-	-
Accidents and Adverse Effects	17	53.8	17	53.8	-	-	5	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	8	25.2	8	25.2	-	-	-	-
Pneumonia and Influenza	8	25.2	8	25.2	-	-	-	-
Diabetes Mellitus	8	25.2	8	25.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	7	22.1	7	22.1	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	3	.	3	.	-	-	-	-
Atherosclerosis	1	.	1	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Antrim County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	17,804	Total Live Births:	249	Total Deaths:	200
Rank Among Counties:	63	Teenage Mothers:	27	Infant Deaths:	3
Per Square Mile:	37.1	Low Weight Births:	11	Neonatal Deaths:	-
Median Age:	39	First Births:	83	Postneonatal Deaths:	3
Children Ages 1-19:	4,881	Median Age of Mother:	25	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	137	Divorces:	86		
Marriage Rate:	15.4	Divorce Rate:	9.7		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	249	14.0	242	13.8	-	-	6	31.4
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	27	108.4	27	111.6	-	-	-	-
Low Weight	11	44.2	11	45.5	-	-	-	-
Under 1,500 Grams	2	.	2	.	-	-	-	-
< 38 Weeks Gestation	34	136.5	33	136.4	-	-	1	.
Prenatal Care Began in 1st Trimester	178	714.9	173	714.9	-	-	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	3	.	3	.	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	3	.	3	.	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	200	109	91	197	107	90	-	-	-	3	2	1	
Mortality Rate	11.2	12.8	9.8	11.2	12.7	9.8	-	-	-	3	2	1	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	3	-	-	-	1	1	3	4	7	24	46	111	-
White Male	2	-	-	-	1	-	3	2	6	13	25	55	-
White Female	1	-	-	-	-	1	-	2	1	10	19	56	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	1	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	200	1,123.3	197	1,120.0	-	-	1	.
Diseases of the Heart	77	432.5	75	421.3	-	-	-	-
Malignant Neoplasms	48	258.4	46	258.4	-	-	-	-
Cerebrovascular Diseases	16	89.9	16	89.9	-	-	-	-
Accidents and Adverse Effects	7	39.3	7	39.3	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	4	.	4	.	-	-	-	-
Pneumonia and Influenza	7	39.3	7	39.3	-	-	-	-
Diabetes Mellitus	7	39.3	7	39.3	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	.	4	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	1	.	1	.	-	-	1	.
Atherosclerosis	2	.	2	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Arenac County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	15,935	Total Live Births:	219	Total Deaths:	155
Rank Among Counties:	65	Teenage Mothers:	27	Infant Deaths:	2
Per Square Mile:	43.4	Low Weight Births:	14	Neonatal Deaths:	2
Median Age:	34	First Births:	79	Postneonatal Deaths:	-
Children Ages 1-19:	4,497	Median Age of Mother:	26	Perinatal Deaths:	3
				Fetal Deaths:	1
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	134	Divorces:	34		
Marriage Rate:	16.8	Divorce Rate:	4.3		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	219	13.7	213	13.5	-	-	6	38.7
Teenage Mothers	27	123.3	26	122.1	-	-	1	-
Low Weight	14	63.9	14	65.7	-	-	-	-
Under 1,500 Grams	4	-	4	-	-	-	-	-
< 38 Weeks Gestation	30	137.0	29	136.2	-	-	1	-
Prenatal Care Began in 1st Trimester	161	735.2	157	737.1	-	-	4	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	2	-	-	-	-	-
Neonatal Deaths	2	-	2	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	3	-	3	-	-	-	-	-
Fetal Deaths	1	-	1	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	155	94	61	153	93	60	-	-	-	2	1	1	
Mortality Rate	9.7	11.9	7.6	9.7	11.9	7.6	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	-	3	3	3	3	4	18	47	72	-
White Male	2	-	-	-	3	2	3	2	3	12	33	33	-
White Female	-	-	-	-	-	1	-	1	1	6	13	38	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

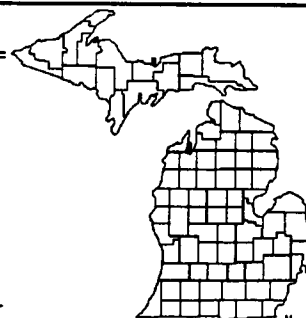
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	155	972.7	153	969.6	-	-	3	-
Diseases of the Heart	60	376.5	59	370.3	-	-	1	-
Malignant Neoplasms	40	251.0	39	244.7	-	-	-	-
Cerebrovascular Diseases	10	62.8	10	62.8	-	-	-	-
Accidents and Adverse Effects	9	56.5	9	56.5	-	-	2	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	7	43.9	7	43.9	-	-	-	-
Pneumonia and Influenza	3	-	3	-	-	-	-	-
Diabetes Mellitus	5	-	5	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	-	4	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	-	2	-	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Baraga County



POPULATION

As of July 1, 1989:	8,221
Rank Among Counties:	80
Per Square Mile:	9.1
Median Age:	34
Children Ages 1-19:	2,354

NATALITY

Total Live Births:	96
Teenage Mothers:	10
Low Weight Births:	4
First Births:	30
Median Age of Mother:	26

MORTALITY

Total Deaths:	94
Infant Deaths:	1
Neonatal Deaths:	-
Postneonatal Deaths:	1
Perinatal Deaths:	-
Fetal Deaths:	-
Maternal Deaths:	-

MARRIAGE

Marriages:	68
Marriage Rate:	16.5

DIVORCE

Divorces:	31
Divorce Rate:	7.5

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	96	11.7	74	10.5	-	-	22	19.6
Teenage Mothers	10	104.2	6	81.1	-	-	4	-
Low Weight	4	-	2	-	-	-	2	-
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	8	83.3	4	-	-	-	4	-
Prenatal Care Began in 1st Trimester	73	760.4	60	810.8	-	-	13	590.9

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	-	-	-	-	-	1	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	1	-	-	-	-	-	1	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Deaths	94	49	45	88	46	42	-	-	-	6	3	3
Mortality Rate	11.4	11.7	11.2	12.5	13.1	11.9	-	-	-	5.3	-	-

	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	-	-	-	-	-	2	4	5	7	30	45	-
White Male	-	-	-	-	-	-	1	3	2	4	12	24	-
White Female	-	-	-	-	-	-	1	-	3	2	16	20	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	1	-	-	-	-	-	-	-	-	1	-	-	-
Other Female	-	-	-	-	-	-	-	1	-	-	1	1	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	94	1,143.4	88	1,250.9	-	-	-	-
Diseases of the Heart	38	462.2	36	437.9	-	-	-	-
Malignant Neoplasms	21	255.4	20	243.3	-	-	-	-
Cerebrovascular Diseases	8	97.3	7	85.1	-	-	-	-
Accidents and Adverse Effects	6	73.0	6	73.0	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	4	-	4	-	-	-	-	-
Pneumonia and Influenza	-	-	-	-	-	-	-	-
Diabetes Mellitus	3	-	3	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	-	1	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	1	-	1	-	-	-	-	-
Atherosclerosis	1	-	1	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Barry County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	50,654	Total Live Births:	658	Total Deaths:	380
Rank Among Counties:	34	Teenage Mothers:	90	Infant Deaths:	4
Per Square Mile:	90.4	Low Weight Births:	41	Neonatal Deaths:	4
Median Age:	33	First Births:	242	Postneonatal Deaths:	-
Children Ages 1-19:	14,754	Median Age of Mother:	25	Perinatal Deaths:	6
				Fetal Deaths:	3
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	436	Divorces:	199		
Marriage Rate:	17.2	Divorce Rate:	7.9		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	658	13.0	652	13.0	2	.	4	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	90	136.8	89	136.5	-	-	1	-
Low Weight	41	62.3	41	62.9	-	-	-	-
Under 1,500 Grams	6	9.1	6	9.2	-	-	-	-
< 38 Weeks Gestation	89	135.3	87	133.4	-	-	2	-
Prenatal Care Began in 1st Trimester	533	810.0	530	812.9	1	.	2	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	4	.	4	.	-	-	-	-
Neonatal Deaths	4	.	4	.	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	6	9.1	6	9.2	-	-	-	-
Fetal Deaths	3	.	3	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	380	216	164	377	214	163	-	-	-	3	2	1	
Mortality Rate	7.5	8.5	6.5	7.5	8.5	6.5	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	4	1	2	1	4	6	7	7	21	45	102	180	-
White Male	4	1	1	-	3	5	5	5	13	32	67	78	-
White Female	-	-	1	1	1	1	2	2	8	12	35	100	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	1	-	1	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	380	750.2	377	749.5	-	-	8	54.2
Diseases of the Heart	112	221.1	111	219.1	-	-	-	-
Malignant Neoplasms	92	181.6	91	179.7	-	-	-	-
Cerebrovascular Diseases	18	35.5	18	35.5	-	-	-	-
Accidents and Adverse Effects	34	67.1	34	67.1	-	-	5	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	37.5	19	37.5	-	-	-	-
Pneumonia and Influenza	22	43.4	21	41.5	-	-	-	-
Diabetes Mellitus	10	19.7	10	19.7	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	.	4	.	-	-	-	-
Homicide	1	.	1	.	-	-	1	.
Suicide	5	.	5	.	-	-	-	-
Atherosclerosis	5	.	5	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Bay County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	115,941	Total Live Births:	1,604	Total Deaths:	971
Rank Among Counties:	17	Teenage Mothers:	211	Infant Deaths:	12
Per Square Mile:	259.2	Low Weight Births:	83	Neonatal Deaths:	7
Median Age:	33	First Births:	653	Postneonatal Deaths:	5
Children Ages 1-19:	33,121	Median Age of Mother:	26	Perinatal Deaths:	10
				Fetal Deaths:	4
				Maternal Deaths:	1
MARRIAGE		DIVORCE			
Marriages:	979	Divorces:	423		
Marriage Rate:	16.9	Divorce Rate:	7.3		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,604	13.8	1,559	13.7	28	21.7	16	14.0
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	211	131.5	203	130.2	5	.	3	.
Low Weight	83	51.7	75	48.1	6	214.3	2	.
Under 1,500 Grams	15	9.4	13	8.3	1	.	1	.
< 38 Weeks Gestation	226	140.9	215	137.9	8	285.7	3	.
Prenatal Care Began in 1st Trimester	1,321	823.6	1,298	832.6	14	500.0	8	500.0

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	12	7.5	10	6.4	2	.	-	-
Neonatal Deaths	7	4.4	6	3.8	1	.	-	-
Postneonatal Deaths	5	.	4	.	1	.	-	-
Perinatal Deaths	10	6.2	10	6.4	-	-	-	-
Fetal Deaths	4	.	4	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	971	469	502	958	463	495	7	3	4	6	3	3	
Mortality Rate	8.4	8.3	8.5	8.4	8.3	8.6	5.4	.	.	5.2	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	12	-	2	2	6	6	18	33	48	144	221	479	-
White Male	4	-	1	1	3	4	12	20	35	77	130	176	-
White Female	6	-	1	1	3	2	6	12	13	66	89	296	-
Black Male	2	-	-	-	-	-	-	1	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	4	-
Other Male	-	-	-	-	-	-	-	-	-	1	-	1	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	1	-

Note: Mortality rate is per 1,000 population in specified group.

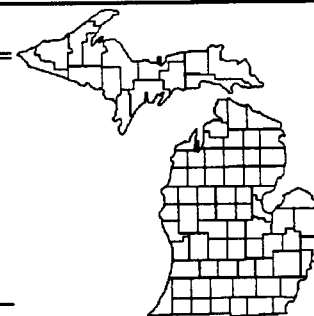
LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	971	837.5	958	844.0	7	542.2	10	30.2
Diseases of the Heart	370	319.1	363	313.1	3	.	-	-
Malignant Neoplasms	247	213.0	245	211.3	1	.	2	.
Cerebrovascular Diseases	59	50.9	58	50.0	-	-	-	-
Accidents and Adverse Effects	45	38.8	45	38.8	-	-	7	21.1
Chronic Obstructive Pulmonary Diseases and Allied Conditions	41	35.4	41	35.4	-	-	-	-
Pneumonia and Influenza	19	16.4	19	16.4	-	-	-	-
Diabetes Mellitus	28	24.2	28	24.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	15	12.9	15	12.9	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	16	13.8	16	13.8	-	-	-	-
Atherosclerosis	14	12.1	14	12.1	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1989 Profile of Benzie County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	11,552	Total Live Births:	178	Total Deaths:	129
Rank Among Counties:	71	Teenage Mothers:	23	Infant Deaths:	1
Per Square Mile:	35.9	Low Weight Births:	12	Neonatal Deaths:	1
Median Age:	35	First Births:	66	Postneonatal Deaths:	-
Children Ages 1-19:	3,161	Median Age of Mother:	26	Perinatal Deaths:	1
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	116	Divorces:	47		
Marriage Rate:	20.1	Divorce Rate:	8.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	178	15.4	166	14.7	4	.	7	34.8
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	23	129.2	20	120.5	-	-	3	.
Low Weight	12	67.4	9	54.2	2	.	-	-
Under 1,500 Grams	3	.	3	.	-	-	-	-
< 38 Weeks Gestation	21	118.0	16	96.4	4	.	-	-
Prenatal Care Began in 1st Trimester	115	646.1	108	650.6	4	.	3	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	-	-	1	.	-	-
Neonatal Deaths	1	.	-	-	1	.	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	1	.	-	-	1	.	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	129	65	64	126	62	64	1	1	-	2	2	-	
Mortality Rate	11.2	11.6	10.8	11.1	11.3	11.0	.	.	-	.	.	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	-	-	-	-	-	-	3	4	14	27	80	-
White Male	-	-	-	-	-	-	-	1	3	10	19	29	-
White Female	-	-	-	-	-	-	-	2	1	3	7	51	-
Black Male	1	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	1	1	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	129	1,116.7	126	1,114.6	1	.	-	-
Diseases of the Heart	54	467.5	54	467.5	-	-	-	-
Malignant Neoplasms	31	268.4	30	259.7	-	-	-	-
Cerebrovascular Diseases	15	129.8	15	129.8	-	-	-	-
Accidents and Adverse Effects	4	.	3	.	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	2	.	2	.	-	-	-	-
Pneumonia and Influenza	4	.	4	.	-	-	-	-
Diabetes Mellitus	-	-	-	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	.	1	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	1	.	1	.	-	-	-	-
Atherosclerosis	2	.	2	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Berrien County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	167,167	Total Live Births:	2,678	Total Deaths:	1,508
Rank Among Counties:	11	Teenage Mothers:	524	Infant Deaths:	32
Per Square Mile:	290.2	Low Weight Births:	233	Neonatal Deaths:	12
Median Age:	32	First Births:	1,072	Postneonatal Deaths:	20
Children Ages 1-19:	48,217	Median Age of Mother:	25	Perinatal Deaths:	28
				Fetal Deaths:	16
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	1,522	Divorces:	749		
Marriage Rate:	18.2	Divorce Rate:	9.0		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	2,678	16.0	1,885	13.5	763	29.0	28	16.5
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	524	195.7	263	139.5	257	336.8	3	.
Low Weight	233	87.0	121	64.2	108	141.5	4	.
Under 1,500 Grams	42	15.7	24	12.7	18	23.6	-	-
< 38 Weeks Gestation	504	188.2	280	148.5	216	283.1	8	285.7
Prenatal Care Began in 1st Trimester	2,006	749.1	1,459	774.0	527	690.7	19	678.6

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	32	11.9	20	10.8	12	15.7	-	-
Neonatal Deaths	12	4.5	7	3.7	5	.	-	-
Postneonatal Deaths	20	7.5	13	6.9	7	9.2	-	-
Perinatal Deaths	28	10.4	17	9.0	10	13.0	1	.
Fetal Deaths	16	5.9	10	5.3	5	.	1	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,508	789	719	1,286	672	614	211	108	103	11	9	2	
Mortality Rate	9.0	9.8	8.3	9.2	10.0	8.6	8.0	8.8	7.4	6.5	11.4	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	32	5	3	4	10	19	34	40	90	206	339	726	-
White Male	12	2	1	3	4	9	15	18	46	99	175	288	-
White Female	8	2	2	-	3	3	6	10	23	68	115	374	-
Black Male	5	-	-	1	1	5	8	4	11	23	25	25	-
Black Female	7	1	-	-	2	1	5	8	10	14	18	37	-
Other Male	-	-	-	-	-	1	-	-	-	-	6	1	-
Other Female	-	-	-	-	-	-	-	-	-	1	-	1	-

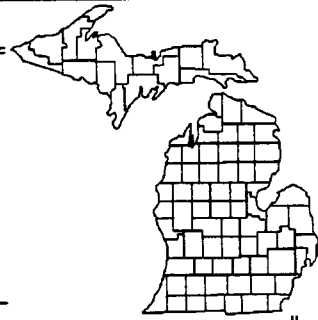
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,508	902.1	1,286	923.9	211	802.9	22	45.6
Diseases of the Heart	500	299.1	446	266.8	50	29.9	1	.
Malignant Neoplasms	347	207.6	301	180.1	45	26.9	2	.
Cerebrovascular Diseases	122	73.0	104	62.2	18	10.8	-	-
Accidents and Adverse Effects	64	38.3	53	31.7	10	6.0	11	22.8
Chronic Obstructive Pulmonary Diseases and Allied Conditions	64	38.3	55	32.9	7	4.2	-	-
Pneumonia and Influenza	49	29.3	43	25.7	6	3.6	-	-
Diabetes Mellitus	52	31.1	41	24.5	11	6.6	-	-
Chronic Liver Disease and Cirrhosis	14	8.4	11	6.6	3	.	-	-
Homicide	15	9.0	1	.	13	7.8	3	.
Suicide	17	10.2	14	8.4	2	.	1	.
Atherosclerosis	26	15.6	25	15.0	1	.	-	-
AIDS	3	.	2	.	1	.	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Branch County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	41,099	Total Live Births:	620	Total Deaths:	392
Rank Among Counties:	38	Teenage Mothers:	99	Infant Deaths:	9
Per Square Mile:	80.9	Low Weight Births:	40	Neonatal Deaths:	6
Median Age:	32	First Births:	247	Postneonatal Deaths:	3
Children Ages 1-19:	11,774	Median Age of Mother:	25	Perinatal Deaths:	8
				Fetal Deaths:	2
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	383	Divorces:	240		
Marriage Rate:	18.6	Divorce Rate:	11.7		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	620	15.1	610	15.0	1	.	7	30.4
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	99	159.7	97	159.0	-	-	1	.
Low Weight	40	64.5	39	63.9	-	-	1	.
Under 1,500 Grams	8	12.9	7	11.5	-	-	1	.
< 38 Weeks Gestation	75	121.0	72	118.0	-	-	2	.
Prenatal Care Began in 1st Trimester	386	622.6	380	623.0	-	-	6	857.1

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	9	14.5	9	14.8	-	-	-	-
Neonatal Deaths	6	9.7	6	9.8	-	-	-	-
Postneonatal Deaths	3	.	3	.	-	-	-	-
Perinatal Deaths	8	12.9	8	13.1	-	-	-	-
Fetal Deaths	2	.	2	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	392	193	199	390	193	197	-	-	-	2	-	2	
Mortality Rate	9.5	9.4	9.6	9.6	9.5	9.6	-	-	-	.	-	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	9	-	-	-	4	3	10	13	18	42	102	191	-
White Male	7	-	-	-	2	2	9	5	8	25	55	80	-
White Female	1	-	-	-	2	1	1	8	10	17	46	110	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	392	953.8	390	956.3	-	-	4	.
Diseases of the Heart	122	296.8	121	294.4	-	-	-	-
Malignant Neoplasms	93	226.3	93	226.3	-	-	1	.
Cerebrovascular Diseases	33	80.3	33	80.3	-	-	-	-
Accidents and Adverse Effects	19	46.2	19	46.2	-	-	3	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	46.2	18	43.8	-	-	-	-
Pneumonia and Influenza	20	48.7	20	48.7	-	-	-	-
Diabetes Mellitus	14	34.1	14	34.1	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	.	5	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	5	.	5	.	-	-	-	-
Atherosclerosis	5	.	5	.	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Calhoun County

**POPULATION**

As of July 1, 1989:	139,802
Rank Among Counties:	15
Per Square Mile:	196.5
Median Age:	34
Children Ages 1-19:	37,869

NATALITY

Total Live Births:	2,112
Teenage Mothers:	389
Low Weight Births:	183
First Births:	870
Median Age of Mother:	25

MORTALITY

Total Deaths:	1,362
Infant Deaths:	28
Neonatal Deaths:	16
Postneonatal Deaths:	12
Perinatal Deaths:	23
Fetal Deaths:	8
Maternal Deaths:	-

MARRIAGE

Marriages:	1,136
Marriage Rate:	16.3

DIVORCE

Divorces:	829
Divorce Rate:	11.9

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	2,112	15.1	1,725	13.9	349	24.2	32	27.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	389	184.2	280	162.3	108	309.5	1	.
Low Weight	183	86.6	123	71.3	55	157.6	5	.
Under 1,500 Grams	36	17.0	21	12.2	13	37.2	2	.
< 38 Weeks Gestation	370	175.2	262	151.9	100	286.5	7	218.8
Prenatal Care Began in 1st Trimester	1,381	653.9	1,199	695.1	155	444.1	22	687.5

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	28	13.3	19	11.0	9	25.8	-	-
Neonatal Deaths	16	7.6	11	6.4	5	.	-	-
Postneonatal Deaths	12	5.7	8	4.6	4	.	-	-
Perinatal Deaths	23	10.8	16	9.2	7	19.9	-	-
Fetal Deaths	8	3.8	6	3.5	2	.	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,362	732	630	1,201	625	576	147	96	51	14	11	3	
Mortality Rate	9.7	10.7	8.8	9.7	10.3	9.1	10.2	14.1	6.7	11.9	19.2	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	28	2	3	3	11	11	33	47	78	170	313	663	-
White Male	13	1	2	2	10	5	19	23	35	87	181	247	-
White Female	6	1	1	1	1	3	7	9	27	48	101	370	-
Black Male	8	-	-	-	-	3	5	10	10	19	17	24	-
Black Female	1	-	-	-	-	-	2	4	3	10	11	20	-
Other Male	-	-	-	-	-	-	-	2	2	3	2	1	-
Other Female	-	-	-	-	-	-	-	1	-	2	-	-	-

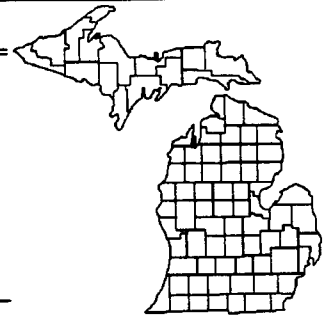
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,362	974.2	1,201	967.0	147	1,019.1	19	50.2
Diseases of the Heart	462	330.5	424	303.3	35	25.0	1	.
Malignant Neoplasms	290	207.4	256	183.1	29	20.7	2	.
Cerebrovascular Diseases	74	52.9	67	47.9	7	5.0	-	-
Accidents and Adverse Effects	65	46.5	54	38.6	9	6.4	10	26.4
Chronic Obstructive Pulmonary Diseases and Allied Conditions	56	40.1	53	37.9	2	.	1	.
Pneumonia and Influenza	92	65.8	85	60.8	7	5.0	-	-
Diabetes Mellitus	36	25.8	31	22.2	5	.	-	-
Chronic Liver Disease and Cirrhosis	19	13.6	14	10.0	4	.	-	-
Homicide	12	8.6	4	.	8	5.7	-	-
Suicide	23	16.5	21	15.0	2	.	2	.
Atherosclerosis	20	14.3	19	13.6	1	.	-	-
AIDS	5	.	4	.	1	.	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Cass County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	49,675	Total Live Births:	619	Total Deaths:	405
Rank Among Counties:	35	Teenage Mothers:	107	Infant Deaths:	7
Per Square Mile:	100.1	Low Weight Births:	44	Neonatal Deaths:	3
Median Age:	34	First Births:	237	Postneonatal Deaths:	4
Children Ages 1-19:	14,068	Median Age of Mother:	25	Perinatal Deaths:	4
		Fetal Deaths:	1	Maternal Deaths:	1
MARRIAGE		DIVORCE			
Marriages:	383	Divorces:	262		
Marriage Rate:	15.4	Divorce Rate:	10.5		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	619	12.5	541	12.0	71	16.8	7	16.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	107	172.9	84	155.3	21	295.8	2	.
Low Weight	44	71.1	37	68.4	7	98.6	.	.
Under 1,500 Grams	5	.	5	.	.	.	.	.
< 38 Weeks Gestation	105	169.6	80	147.9	25	352.1	.	.
Prenatal Care Began in 1st Trimester	435	702.7	387	715.3	44	619.7	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	7	11.3	5	.	2	.	.	.
Neonatal Deaths	3	.	3	.	.	.	.	.
Postneonatal Deaths	4	.	2	.	2	.	.	.
Perinatal Deaths	4	.	4	.	.	.	.	.
Fetal Deaths	1	.	1	.	.	.	.	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	405	207	198	344	174	170	57	31	26	4	2	2	
Mortality Rate	8.2	8.4	7.9	7.6	7.8	7.5	13.5	15.9	11.5	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	7	2	.	1	1	8	12	14	19	53	94	194	.
White Male	3	2	.	.	1	5	5	5	9	30	51	63	.
White Female	2	.	.	1	.	3	3	4	9	17	31	100	.
Black Male	2	.	.	.	.	.	3	3	1	4	7	11	.
Black Female	.	.	.	.	.	.	.	2	.	2	4	18	.
Other Male	.	.	.	.	.	.	1	.	.	.	.	.	.
Other Female	.	.	.	.	.	.	.	.	.	.	1	1	.

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	405	815.3	344	764.1	57	1,351.0	4	.
Diseases of the Heart	147	295.9	122	245.6	23	46.3	.	.
Malignant Neoplasms	88	177.2	81	163.1	6	12.1	.	.
Cerebrovascular Diseases	33	66.4	26	52.3	6	12.1	.	.
Accidents and Adverse Effects	23	46.3	19	38.2	4	.	1	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	15	30.2	14	28.2	1	.	.	.
Pneumonia and Influenza	12	24.2	12	24.2	.	.	.	.
Diabetes Mellitus	7	14.1	4	.	3	.	.	.
Chronic Liver Disease and Cirrhosis	5	.	5	.	.	.	.	.
Homicide	3	.	1	.	2	.	.	.
Suicide	5	.	5	.	.	.	1	.
Atherosclerosis	6	12.1	5	.	1	.	.	.
AIDS	.	.	.	.	.	.	.	.

Note: Rate is per 100,000 population in specified group.

1989 Profile of Charlevoix County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	21,527	Total Live Births:	325	Total Deaths:	176
Rank Among Counties:	58	Teenage Mothers:	31	Infant Deaths:	4
Per Square Mile:	51.1	Low Weight Births:	15	Neonatal Deaths:	3
Median Age:	34	First Births:	129	Postneonatal Deaths:	1
Children Ages 1-19:	6,139	Median Age of Mother:	26	Perinatal Deaths:	3
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	216	Divorces:	95		
Marriage Rate:	20.1	Divorce Rate:	8.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	325	15.1	320	15.2	-	-	5	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	31	95.4	31	96.9	-	-	-	-
Low Weight	15	46.2	15	46.9	-	-	-	-
Under 1,500 Grams	4	-	4	-	-	-	-	-
< 38 Weeks Gestation	42	129.2	42	131.3	-	-	-	-
Prenatal Care Began in 1st Trimester	264	812.3	260	812.5	-	-	4	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	4	-	4	-	-	-	-	-
Neonatal Deaths	3	-	3	-	-	-	-	-
Postneonatal Deaths	1	-	1	-	-	-	-	-
Perinatal Deaths	3	-	3	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	176	95	81	172	93	79	-	-	-	4	2	2	
Mortality Rate	8.2	8.9	7.5	8.2	8.9	7.5	-	-	-	4	2	2	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	4	-	-	-	1	2	3	3	11	20	45	87	-
White Male	1	-	-	-	-	2	3	1	6	11	31	37	-
White Female	3	-	-	-	-	-	-	1	5	8	13	49	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	1	-	-
Other Female	-	-	-	-	-	-	-	-	1	-	-	1	-

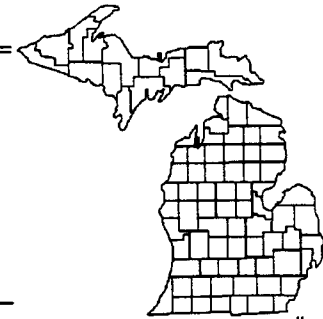
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	176	817.6	172	816.9	-	-	1	-
Diseases of the Heart	59	274.1	57	264.8	-	-	-	-
Malignant Neoplasms	46	213.7	46	213.7	-	-	-	-
Cerebrovascular Diseases	7	32.5	7	32.5	-	-	-	-
Accidents and Adverse Effects	7	32.5	7	32.5	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	9	41.8	9	41.8	-	-	-	-
Pneumonia and Influenza	5	-	5	-	-	-	-	-
Diabetes Mellitus	7	32.5	5	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	-	2	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	4	-	4	-	-	-	-	-
Atherosclerosis	1	-	1	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Cheboygan County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	21,703	Total Live Births:	273	Total Deaths:	220
Rank Among Counties:	57	Teenage Mothers:	40	Infant Deaths:	2
Per Square Mile:	30.1	Low Weight Births:	8	Neonatal Deaths:	1
Median Age:	35	First Births:	99	Postneonatal Deaths:	1
Children Ages 1-19:	6,206	Median Age of Mother:	26	Perinatal Deaths:	1
				Fetal Deaths:	1
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	202	Divorces:	65		
Marriage Rate:	18.6	Divorce Rate:	6.0		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	273	12.6	261	12.2	3	.	8	25.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	40	146.5	36	137.9	1	.	2	.
Low Weight	8	29.3	8	30.7	-	-	-	-
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	26	95.2	24	92.0	2	.	-	-
Prenatal Care Began in 1st Trimester	235	860.8	225	862.1	2	.	7	875.0

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	.	2	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	1	.	1	.	-	-	-	-
Fetal Deaths	1	.	1	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	220	103	117	218	102	116	-	-	-	2	1	1	
Mortality Rate	10.1	9.6	10.6	10.2	9.7	10.7	-	-	-	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	1	-	-	3	-	1	1	9	22	54	127	-
White Male	-	1	-	-	2	-	-	1	7	15	29	47	-
White Female	2	-	-	-	1	-	1	-	2	6	24	80	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	1	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

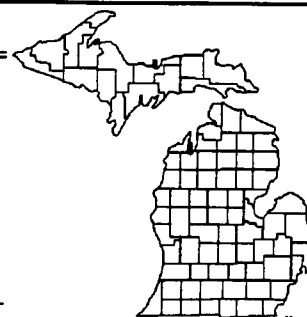
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	220	1,013.7	218	1,019.7	-	-	4	.
Diseases of the Heart	85	391.7	83	382.4	-	-	-	-
Malignant Neoplasms	45	207.3	45	207.3	-	-	-	-
Cerebrovascular Diseases	13	59.9	13	59.9	-	-	-	-
Accidents and Adverse Effects	8	36.9	8	36.9	-	-	4	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	16	73.7	16	73.7	-	-	-	-
Pneumonia and Influenza	11	50.7	11	50.7	-	-	-	-
Diabetes Mellitus	6	27.6	6	27.6	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	.	2	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	.	2	.	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Chippewa County

**POPULATION**

As of July 1, 1989:	31,978
Rank Among Counties:	45
Per Square Mile:	20.1
Median Age:	33
Children Ages 1-19:	8,364

NATALITY

Total Live Births:	407
Teenage Mothers:	60
Low Weight Births:	20
First Births:	177
Median Age of Mother:	24

MORTALITY

Total Deaths:	260
Infant Deaths:	2
Neonatal Deaths:	2
Postneonatal Deaths:	2
Perinatal Deaths:	3
Fetal Deaths:	3
Maternal Deaths:	-

MARRIAGE

Marriages:	290
Marriage Rate:	18.1

DIVORCE

Divorces:	110
Divorce Rate:	6.9

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	407	12.7	328	11.8	2	.	69	17.7
Teenage Mothers	60	147.4	38	115.9	1	.	20	289.9
Low Weight	20	49.1	16	48.8	-	-	3	.
Under 1,500 Grams	3	.	2	.	-	-	1	.
< 38 Weeks Gestation	55	135.1	44	134.1	-	-	11	159.4
Prenatal Care Began in 1st Trimester	266	653.6	219	667.7	1	.	44	637.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	.	2	.	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	3	.	2	.	-	-	-	-
Fetal Deaths	3	.	2	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Deaths	260	142	118	242	133	109	1	-	1	17	9	8
Mortality Rate	8.1	9.0	7.3	8.7	9.8	7.7	.	-	.	4.4	4.7	4.1

	Age In Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	2	-	-	-	1	8	7	15	33	60	132	-
White Male	1	1	-	-	-	1	4	4	8	15	37	62	-
White Female	1	1	-	-	-	-	1	2	5	14	19	66	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	2	-	1	2	1	2	-
Other Female	-	-	-	-	-	-	1	-	1	2	2	1	-

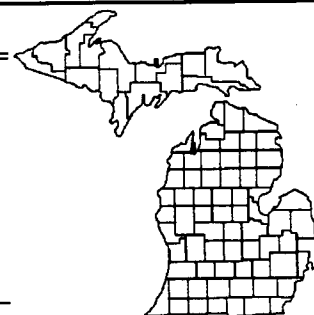
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	260	813.1	242	872.1	1	.	2	.
Diseases of the Heart	103	322.1	99	309.6	-	-	-	-
Malignant Neoplasms	67	209.5	59	184.5	-	-	-	-
Cerebrovascular Diseases	13	40.7	13	40.7	-	-	-	-
Accidents and Adverse Effects	11	34.4	10	31.3	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	8	25.0	7	21.9	-	-	-	-
Pneumonia and Influenza	6	18.8	6	18.8	-	-	-	-
Diabetes Mellitus	5	.	5	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	.	5	.	-	-	-	-
Homicide	1	.	1	.	-	-	-	-
Suicide	3	.	2	.	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Clare County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	26,521	Total Live Births:	363	Total Deaths:	293
Rank Among Counties:	51	Teenage Mothers:	58	Infant Deaths:	3
Per Square Mile:	46.5	Low Weight Births:	26	Neonatal Deaths:	2
Median Age:	37	First Births:	132	Postneonatal Deaths:	1
Children Ages 1-19:	7,131	Median Age of Mother:	24	Perinatal Deaths:	2
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	239	Divorces:	108		
Marriage Rate:	18.0	Divorce Rate:	8.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	363	13.7	359	13.7	-	-	1	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	58	159.8	58	161.6	-	-	-	-
Low Weight	26	71.6	25	69.6	-	-	-	-
Under 1,500 Grams	4	-	4	-	-	-	-	-
< 38 Weeks Gestation	75	206.6	74	206.1	-	-	-	-
Prenatal Care Began in 1st Trimester	317	873.3	315	877.4	-	-	-	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	3	-	3	-	-	-	-	-
Neonatal Deaths	2	-	2	-	-	-	-	-
Postneonatal Deaths	1	-	1	-	-	-	-	-
Perinatal Deaths	2	-	2	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	293	161	132	291	160	131	-	-	-	2	1	1	
Mortality Rate	11.0	12.7	9.6	11.1	12.7	9.6	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	3	1	-	1	2	-	9	7	16	30	93	131	-
White Male	1	-	-	-	2	-	4	3	11	22	51	66	-
White Female	2	1	-	1	-	-	4	4	5	8	41	65	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

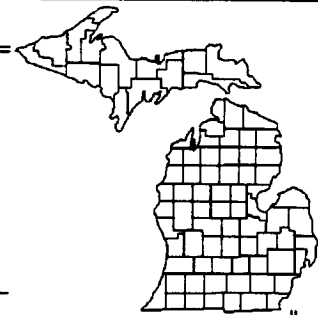
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	293	1,104.8	291	1,108.4	-	-	4	-
Diseases of the Heart	137	516.6	137	516.6	-	-	-	-
Malignant Neoplasms	62	233.8	61	230.0	-	-	-	-
Cerebrovascular Diseases	15	56.6	15	56.6	-	-	-	-
Accidents and Adverse Effects	8	30.2	8	30.2	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	14	52.8	14	52.8	-	-	-	-
Pneumonia and Influenza	8	30.2	8	30.2	-	-	-	-
Diabetes Mellitus	5	-	5	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	1	-	-	-	-	-	-	-
Suicide	7	26.4	7	26.4	-	-	2	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Clinton County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	58,885	Total Live Births:	806	Total Deaths:	341
Rank Among Counties:	29	Teenage Mothers:	60	Infant Deaths:	4
Per Square Mile:	102.8	Low Weight Births:	39	Neonatal Deaths:	2
Median Age:	31	First Births:	308	Postneonatal Deaths:	2
Children Ages 1-19:	18,495	Median Age of Mother:	27	Perinatal Deaths:	5
				Fetal Deaths:	4
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	685	Divorces:	247		
Marriage Rate:	23.3	Divorce Rate:	8.4		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	806	13.7	801	13.7	2	.	3	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	60	74.4	60	74.9	-	-	-	-
Low Weight	39	48.4	39	48.7	-	-	-	-
Under 1,500 Grams	5	.	5	.	-	-	-	-
< 38 Weeks Gestation	86	106.7	85	106.1	-	-	1	.
Prenatal Care Began in 1st Trimester	678	841.2	673	840.2	2	.	3	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	4	.	4	.	-	-	-	-
Neonatal Deaths	2	.	2	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	5	.	5	.	-	-	-	-
Fetal Deaths	4	.	4	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	341	200	141	340	199	141	-	-	-	1	1	-	
Mortality Rate	5.8	6.8	4.8	5.8	6.8	4.8	-	-	-	1	1	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	4	1	2	2	2	7	10	10	21	51	66	165	-
White Male	2	-	1	2	1	4	5	8	14	36	46	80	-
White Female	2	1	1	-	-	3	5	2	7	15	20	85	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	1	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

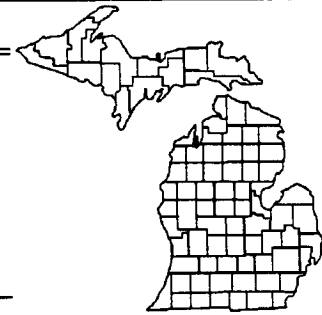
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	341	579.1	340	583.2	-	-	7	37.8
Diseases of the Heart	116	197.0	116	197.0	-	-	-	-
Malignant Neoplasms	69	117.2	69	117.2	-	-	-	-
Cerebrovascular Diseases	25	42.5	25	42.5	-	-	-	-
Accidents and Adverse Effects	22	37.4	22	37.4	-	-	2	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	32.3	19	32.3	-	-	1	.
Pneumonia and Influenza	10	17.0	10	17.0	-	-	-	-
Diabetes Mellitus	7	11.9	7	11.9	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	.	1	.	-	-	-	-
Homicide	1	.	1	.	-	-	-	-
Suicide	10	17.0	9	15.3	-	-	1	.
Atherosclerosis	4	.	4	.	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Crawford County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	11,035	Total Live Births:	183	Total Deaths:	129
Rank Among Counties:	72	Teenage Mothers:	29	Infant Deaths:	2
Per Square Mile:	19.7	Low Weight Births:	7	Neonatal Deaths:	2
Median Age:	33	First Births:	70	Postneonatal Deaths:	-
Children Ages 1-19:	3,260	Median Age of Mother:	26	Perinatal Deaths:	2
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	119	Divorces:	61		
Marriage Rate:	21.6	Divorce Rate:	11.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	183	16.6	177	16.2	1	.	5	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	29	158.5	28	158.2	1	.	-	-
Low Weight	7	38.3	7	39.5	-	-	-	-
Under 1,500 Grams	1	.	1	.	-	-	-	-
< 38 Weeks Gestation	28	153.0	27	152.5	1	.	-	-
Prenatal Care Began in 1st Trimester	145	792.3	142	802.3	-	-	3	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	.	2	.	-	-	-	-
Neonatal Deaths	2	.	2	.	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	2	.	2	.	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	129	75	54	126	72	54	-	-	-	3	3	-	
Mortality Rate	11.7	13.7	9.7	11.5	13.3	9.8	-	-	-	.	.	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	1	1	-	2	-	1	3	4	12	38	65	-
White Male	-	1	-	-	1	-	1	2	4	7	23	33	-
White Female	2	-	1	-	-	-	-	-	-	5	15	31	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	1	-	-	1	-	-	-	1	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

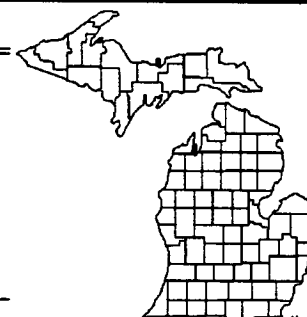
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	129	1,169.0	126	1,153.0	-	-	4	.
Diseases of the Heart	45	407.8	43	389.7	-	-	-	-
Malignant Neoplasms	35	317.2	35	317.2	-	-	-	-
Cerebrovascular Diseases	12	108.7	12	108.7	-	-	-	-
Accidents and Adverse Effects	5	.	4	.	-	-	2	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	.	5	.	-	-	-	-
Pneumonia and Influenza	5	.	5	.	-	-	1	.
Diabetes Mellitus	2	.	2	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	.	2	.	-	-	-	-
Homicide	1	.	1	.	-	-	-	-
Suicide	-	-	-	-	-	-	-	-
Atherosclerosis	1	.	1	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Delta County

**POPULATION**

As of July 1, 1989: 38,960
 Rank Among Counties: 41
 Per Square Mile: 33.2
 Median Age: 34
 Children Ages 1-19: 11,309

NATALITY

Total Live Births: 503
 Teenage Mothers: 56
 Low Weight Births: 31
 First Births: 177
 Median Age of Mother: 26

MORTALITY

Total Deaths: 354
 Infant Deaths: 1
 Neonatal Deaths: -
 Postneonatal Deaths: 1
 Perinatal Deaths: 4
 Fetal Deaths: 4
 Maternal Deaths: -

MARRIAGE

Marriages: 303
 Marriage Rate: 15.6

DIVORCE

Divorces: 150
 Divorce Rate: 7.7

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	503	12.9	477	12.4	-	-	23	40.4
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	56	111.3	52	109.0	-	-	4	.
Low Weight	31	61.6	31	65.0	-	-	-	-
Under 1,500 Grams	6	11.9	6	12.6	-	-	-	-
< 38 Weeks Gestation	59	117.3	58	121.6	-	-	-	-
Prenatal Care Began in 1st Trimester	367	729.6	351	735.8	-	-	15	652.2

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	4	.	4	.	-	-	-	-
Fetal Deaths	4	.	4	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	354	186	168	347	181	166	-	-	-	7	5	2	
Mortality Rate	9.1	9.7	8.5	9.0	9.6	8.5	-	-	-	12.3	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	-	-	1	3	2	9	3	16	34	82	203	-
White Male	1	-	-	1	2	1	4	2	10	16	48	96	-
White Female	-	-	-	-	1	1	4	1	6	15	33	105	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	1	-	-	3	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	2	-

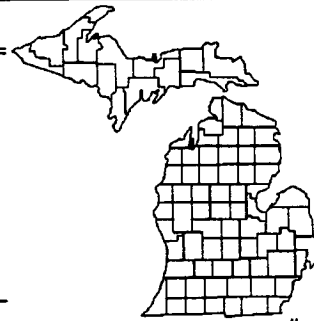
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

All Causes	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Diseases of the Heart	113	290.0	110	282.3	-	-	4	.
Malignant Neoplasms	80	205.3	77	197.6	-	-	-	-
Cerebrovascular Diseases	25	64.2	25	64.2	-	-	-	-
Accidents and Adverse Effects	15	38.5	15	38.5	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	21	53.9	21	53.9	-	-	2	.
Pneumonia and Influenza	8	20.5	8	20.5	-	-	-	-
Diabetes Mellitus	9	23.1	9	23.1	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	.	5	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	5	.	5	.	-	-	1	.
Atherosclerosis	8	20.5	8	20.5	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Dickinson County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	26,682	Total Live Births:	334	Total Deaths:	260
Rank Among Counties:	49	Teenage Mothers:	34	Infant Deaths:	-
Per Square Mile:	34.6	Low Weight Births:	8	Neonatal Deaths:	-
Median Age:	36	First Births:	137	Postneonatal Deaths:	-
Children Ages 1-19:	7,025	Median Age of Mother:	27	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	266	Divorces:	119		
Marriage Rate:	19.9	Divorce Rate:	8.9		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	334	12.5	330	12.4	-	-	4	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	34	101.8	32	97.0	-	-	2	-
Low Weight	8	24.0	8	24.2	-	-	-	-
Under 1,500 Grams	2	-	2	-	-	-	-	-
< 38 Weeks Gestation	33	98.8	33	100.0	-	-	-	-
Prenatal Care Began in 1st Trimester	277	829.3	274	830.3	-	-	3	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	-	-	-	-	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	260	124	136	259	123	136	-	-	-	1	1	-	
Mortality Rate	9.7	9.6	9.9	9.7	9.5	9.9	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	-	1	-	-	1	2	1	6	13	19	52	165	-
White Male	-	1	-	-	1	2	1	1	6	15	32	64	-
White Female	-	-	-	-	-	-	-	5	7	4	19	101	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

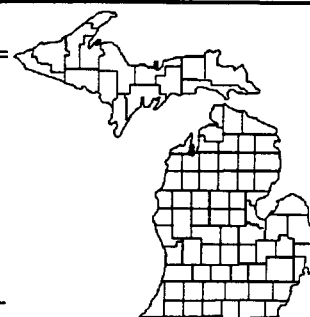
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	260	974.4	259	973.2	-	-	2	-
Diseases of the Heart	95	356.0	94	352.3	-	-	-	-
Malignant Neoplasms	62	232.4	62	232.4	-	-	-	-
Cerebrovascular Diseases	27	101.2	27	101.2	-	-	-	-
Accidents and Adverse Effects	11	41.2	11	41.2	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	10	37.5	10	37.5	-	-	-	-
Pneumonia and Influenza	7	26.2	7	26.2	-	-	-	-
Diabetes Mellitus	6	22.5	6	22.5	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	-	4	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	4	-	4	-	-	-	1	-
Atherosclerosis	5	-	5	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Eaton County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	95,898	Total Live Births:	1,166	Total Deaths:	650
Rank Among Counties:	19	Teenage Mothers:	125	Infant Deaths:	6
Per Square Mile:	165.5	Low Weight Births:	61	Neonatal Deaths:	4
Median Age:	32	First Births:	527	Postneonatal Deaths:	2
Children Ages 1-19:	28,165	Median Age of Mother:	26	Perinatal Deaths:	12
				Fetal Deaths:	8
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	772	Divorces:	437		
Marriage Rate:	16.1	Divorce Rate:	9.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,166	12.2	1,124	12.2	37	12.2	4	.
Teenage Mothers	125	107.2	116	103.2	7	189.2	2	.
Low Weight	61	52.3	54	48.0	6	162.2	1	.
Under 1,500 Grams	13	11.1	12	10.7	-	-	1	.
< 38 Weeks Gestation	141	120.9	128	113.9	11	297.3	2	.
Prenatal Care Began in 1st Trimester	961	824.2	931	828.3	26	702.7	3	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	6	5.1	6	5.3	-	-	-	-
Neonatal Deaths	4	.	4	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	12	10.2	12	10.6	-	-	-	-
Fetal Deaths	8	6.8	8	7.1	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	650	326	324	637	318	319	10	6	4	3	2	1	
Mortality Rate	6.8	6.9	6.6	6.9	7.1	6.8	3.3	3.8	4	3	2	1	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	6	3	1	1	6	6	12	19	46	76	137	337	-
White Female	-	1	-	-	5	5	8	10	34	45	80	130	-
Black Male	6	2	-	1	1	1	4	7	11	28	53	205	-
Black Female	-	-	-	-	-	-	-	1	1	1	3	-	-
Other Male	-	-	1	-	-	-	-	-	-	2	1	-	-
Other Female	-	-	-	-	-	-	-	1	-	-	-	1	-

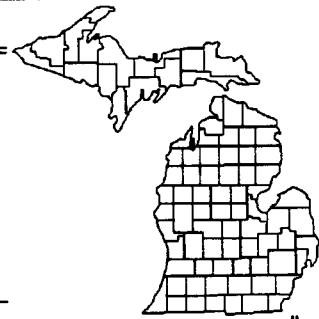
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	650	677.8	637	693.8	10	328.8	11	39.1
Diseases of the Heart	180	187.7	177	184.6	2	.	-	-
Malignant Neoplasms	167	174.1	165	172.1	2	.	-	-
Cerebrovascular Diseases	62	64.7	59	61.5	1	.	-	-
Accidents and Adverse Effects	38	39.6	37	38.6	1	.	7	24.9
Chronic Obstructive Pulmonary Diseases and Allied Conditions	21	21.9	21	21.9	-	-	-	-
Pneumonia and Influenza	20	20.9	20	20.9	-	-	-	-
Diabetes Mellitus	16	16.7	15	15.6	1	.	-	-
Chronic Liver Disease and Cirrhosis	5	.	5	.	-	-	-	-
Homicide	2	.	2	.	-	-	-	-
Suicide	6	6.3	6	6.3	-	-	2	.
Atherosclerosis	22	22.9	22	22.9	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Emmet County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	25,028	Total Live Births:	362	Total Deaths:	222
Rank Among Counties:	53	Teenage Mothers:	27	Infant Deaths:	2
Per Square Mile:	53.5	Low Weight Births:	12	Neonatal Deaths:	2
Median Age:	33	First Births:	134	Postneonatal Deaths:	-
Children Ages 1-19:	7,083	Median Age of Mother:	28	Perinatal Deaths:	-
		Fetal Deaths:	-	Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	290	Divorces:	129		
Marriage Rate:	23.2	Divorce Rate:	10.3		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	362	14.5	344	14.2	1	.	17	24.3
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	27	74.6	23	66.9	-	-	4	.
Low Weight	12	33.1	12	34.9	-	-	-	-
Under 1,500 Grams	2	.	2	.	-	-	-	-
< 38 Weeks Gestation	26	71.8	25	72.7	-	-	1	.
Prenatal Care Began in 1st Trimester	300	828.7	289	840.1	1	.	10	588.2

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	.	1	.	-	-	1	.
Neonatal Deaths	2	.	1	.	-	-	1	.
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	222	110	112	214	105	109	-	-	-	8	5	3	
Mortality Rate	8.9	8.9	8.8	8.9	8.9	8.8	-	-	-	11.4	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	3	-	-	1	3	3	4	12	20	49	125	-
White Male	1	3	-	-	1	2	2	2	7	11	27	49	-
White Female	-	-	-	-	-	-	1	1	5	8	21	73	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	1	-	-	-	-	1	-	1	-	1	-	1	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	2	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	222	887.0	214	885.2	-	-	4	.
Diseases of the Heart	78	311.7	74	295.7	-	-	-	-
Malignant Neoplasms	44	175.8	43	171.8	-	-	-	-
Cerebrovascular Diseases	13	51.9	13	51.9	-	-	-	-
Accidents and Adverse Effects	13	51.9	13	51.9	-	-	4	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	12	47.9	12	47.9	-	-	-	-
Pneumonia and Influenza	12	47.9	12	47.9	-	-	-	-
Diabetes Mellitus	1	.	1	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	.	1	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	.	2	.	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Genesee County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	429,676	Total Live Births:	7,327	Total Deaths:	3,431
Rank Among Counties:	5	Teenage Mothers:	1,268	Infant Deaths:	105
Per Square Mile:	669.7	Low Weight Births:	694	Neonatal Deaths:	79
Median Age:	30	First Births:	3,002	Postneonatal Deaths:	26
Children Ages 1-19:	127,657	Median Age of Mother:	25	Perinatal Deaths:	100
				Fetal Deaths:	34
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	3,804	Divorces:	1,797		
Marriage Rate:	17.7	Divorce Rate:	8.4		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	7,327	17.1	5,075	14.9	2,158	25.9	87	16.6
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	1,268	173.1	643	126.7	613	284.1	12	137.9
Low Weight	694	94.7	354	69.8	332	153.8	7	80.5
Under 1,500 Grams	170	23.2	72	14.2	86	44.5	2	-
< 38 Weeks Gestation	1,502	205.0	808	159.2	675	312.8	17	195.4
Prenatal Care Began in 1st Trimester	5,955	812.7	4,343	855.8	1,534	710.8	73	839.1

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	105	14.3	53	10.4	51	23.6	1	-
Neonatal Deaths	79	10.8	41	8.1	38	17.6	-	-
Postneonatal Deaths	26	3.5	12	2.4	13	6.0	1	-
Perinatal Deaths	100	13.6	55	10.8	44	20.3	-	-
Fetal Deaths	34	4.6	22	4.3	11	5.1	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	3,431	1,761	1,670	2,813	1,404	1,409	603	349	254	15	8	7	
Mortality Rate	8.0	8.5	7.5	8.2	8.5	8.0	7.2	8.9	5.8	2.9	3.3	2.5	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	105	11	5	9	30	29	115	130	224	520	788	1,465	-
White Male	26	3	1	7	7	17	52	50	88	251	359	531	-
White Female	25	4	2	1	9	5	17	31	60	156	307	792	-
Black Male	27	4	1	1	11	5	31	31	42	61	75	60	-
Black Female	24	-	1	-	3	2	15	17	21	46	46	79	-
Other Male	1	-	-	-	-	-	-	3	2	1	-	-	-
Other Female	-	-	-	-	-	-	1	-	3	-	3	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	3,431	798.5	2,813	824.5	603	724.3	55	43.1
Diseases of the Heart	1,245	289.8	1,063	247.4	173	40.3	-	-
Malignant Neoplasms	757	176.2	629	146.4	125	29.1	7	5.5
Cerebrovascular Diseases	224	52.1	184	42.8	40	9.3	1	-
Accidents and Adverse Effects	162	37.7	129	30.0	33	7.7	29	22.7
Chronic Obstructive Pulmonary Diseases and Allied Conditions	139	32.3	124	28.9	15	3.5	1	-
Pneumonia and Influenza	78	18.2	72	16.8	6	1.4	1	-
Diabetes Mellitus	98	22.8	82	19.1	16	3.7	-	-
Chronic Liver Disease and Cirrhosis	44	10.2	33	7.7	11	2.6	-	-
Homicide	56	13.0	12	2.8	44	10.2	7	5.5
Suicide	46	10.7	43	10.0	3	-	2	-
Atherosclerosis	54	12.6	51	11.9	3	-	-	-
AIDS	9	2.1	6	1.4	3	-	-	-

Note: Rate is per 100,000 population in specified group.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1989 Profile of Gladwin County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	23,310	Total Live Births:	286	Total Deaths:	243
Rank Among Counties:	55	Teenage Mothers:	41	Infant Deaths:	5
Per Square Mile:	46.1	Low Weight Births:	12	Neonatal Deaths:	3
Median Age:	36	First Births:	102	Postneonatal Deaths:	2
Children Ages 1-19:	6,555	Median Age of Mother:	24	Perinatal Deaths:	4
				Fetal Deaths:	2
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	162	Divorces:	112		
Marriage Rate:	13.9	Divorce Rate:	9.6		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	286	12.3	282	12.2	-	-	2	.
Teenage Mothers	41	143.4	41	145.4	-	-	-	-
Low Weight	12	42.0	11	39.0	-	-	-	-
Under 1,500 Grams	2	.	2	.	-	-	-	-
< 38 Weeks Gestation	45	157.3	44	156.0	-	-	-	-
Prenatal Care Began in 1st Trimester	224	783.2	220	780.1	-	-	2	.

Note: Rate is per 1,000 population live births in Specified Group.

INFANT AND PERINATAL MORTALITY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	5	.	5	.	-	-	-	-
Neonatal Deaths	3	.	3	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	4	.	4	.	-	-	-	-
Fetal Deaths	2	.	2	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All			Races			White			Black			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Deaths	243	135	108	241	135	106	-	-	-	2	-	-	2	-	-
Mortality Rate	10.4	11.8	9.1	10.4	11.9	9.0	-	-	-	-	-	-	-	-	-
	Age in Years														
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk		
Total Deaths	5	-	-	1	2	-	2	7	9	30	68	119	-		
White Male	4	-	-	-	2	-	1	6	6	18	42	56	-		
White Female	1	-	-	1	-	-	1	1	3	11	26	62	-		
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-		
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-		
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-		
Other Female	-	-	-	-	-	-	-	-	-	1	-	-	-		

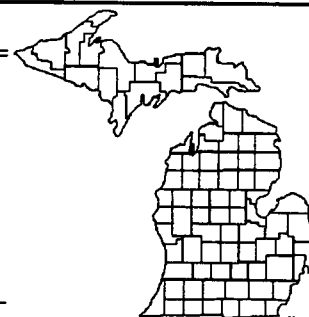
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	243	1,042.5	241	1,042.5	-	-	3	.
Diseases of the Heart	90	386.1	90	386.1	-	-	-	-
Malignant Neoplasms	63	270.3	61	261.7	-	-	-	-
Cerebrovascular Diseases	15	64.4	15	64.4	-	-	-	-
Accidents and Adverse Effects	10	42.9	10	42.9	-	-	2	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	7	30.0	7	30.0	-	-	-	-
Pneumonia and Influenza	8	34.3	8	34.3	-	-	-	-
Diabetes Mellitus	2	.	2	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	.	3	.	-	-	-	-
Homicide	2	.	2	.	-	-	1	.
Suicide	4	.	4	.	-	-	-	-
Atherosclerosis	6	25.7	6	25.7	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Gogebic County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	18,197	Total Live Births:	150	Total Deaths:	225
Rank Among Counties:	62	Teenage Mothers:	20	Infant Deaths:	2
Per Square Mile:	16.5	Low Weight Births:	12	Neonatal Deaths:	1
Median Age:	40	First Births:	64	Postneonatal Deaths:	1
Children Ages 1-19:	4,345	Median Age of Mother:	25	Perinatal Deaths:	1
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	123	Divorces:	61		
Marriage Rate:	13.5	Divorce Rate:	6.7		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	150	8.2	142	8.1	-	-	5	-
Teenage Mothers	20	133.3	16	112.7	-	-	3	-
Low Weight	12	80.0	12	84.5	-	-	-	-
Under 1,500 Grams	2	-	2	-	-	-	-	-
< 38 Weeks Gestation	27	180.0	26	183.1	-	-	-	-
Prenatal Care Began in 1st Trimester	98	653.3	94	662.0	-	-	3	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	2	-	-	-	-	-
Neonatal Deaths	1	-	1	-	-	-	-	-
Postneonatal Deaths	1	-	1	-	-	-	-	-
Perinatal Deaths	1	-	1	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	225	124	101	224	124	100	-	-	-	1	-	1	
Mortality Rate	12.4	14.1	10.7	12.7	14.8	10.8	-	-	-	1	-	1	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	-	-	1	-	6	8	17	61	130	-
White Male	1	-	-	-	-	1	-	6	7	9	44	56	-
White Female	1	-	-	-	-	-	-	-	1	8	17	73	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	225	1,236.5	224	1,271.2	-	-	-	-
Diseases of the Heart	82	450.6	82	450.6	-	-	-	-
Malignant Neoplasms	47	258.3	47	258.3	-	-	-	-
Cerebrovascular Diseases	23	126.4	22	120.9	-	-	-	-
Accidents and Adverse Effects	3	-	3	-	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	14	76.9	14	76.9	-	-	-	-
Pneumonia and Influenza	7	38.5	7	38.5	-	-	-	-
Diabetes Mellitus	1	-	1	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	-	5	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	-	-	-	-	-	-	-	-
Atherosclerosis	1	-	1	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Grand Traverse County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	63,662	Total Live Births:	923	Total Deaths:	466
Rank Among Counties:	27	Teenage Mothers:	96	Infant Deaths:	5
Per Square Mile:	136.6	Low Weight Births:	49	Neonatal Deaths:	1
Median Age:	32	First Births:	389	Postneonatal Deaths:	4
Children Ages 1-19:	18,100	Median Age of Mother:	27	Perinatal Deaths:	2
				Fetal Deaths:	1
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	688	Divorces:	301		
Marriage Rate:	21.6	Divorce Rate:	9.5		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	923	14.5	877	14.0	2	.	38	48.8
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	96	104.0	90	102.6	1	.	4	.
Low Weight	49	53.1	43	49.0	-	-	5	.
Under 1,500 Grams	4	.	4	.	-	-	-	.
< 38 Weeks Gestation	132	143.0	123	140.3	1	.	7	184.2
Prenatal Care Began in 1st Trimester	710	769.2	684	779.9	2	.	20	526.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	5	.	5	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	4	.	4	.	-	-	-	-
Perinatal Deaths	2	.	2	.	-	-	-	-
Fetal Deaths	1	.	1	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	466	227	239	461	223	238	1	1	-	4	3	1	
Mortality Rate	7.3	7.3	7.3	7.4	7.3	7.4	.	.	-	4	3	1	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	5	3	-	3	3	5	8	14	20	40	107	258	-
White Male	1	1	-	3	1	2	7	8	11	24	58	107	-
White Female	4	2	-	-	2	3	1	5	9	15	48	149	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	1	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	1	-	-	-	1	-
Other Female	-	-	-	-	-	-	-	-	1	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	466	732.0	461	736.0	1	.	9	49.7
Diseases of the Heart	145	227.8	144	226.2	-	-	-	-
Malignant Neoplasms	109	171.2	108	169.6	-	-	1	.
Cerebrovascular Diseases	41	64.4	41	64.4	-	-	-	-
Accidents and Adverse Effects	33	51.8	32	50.3	-	-	5	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	13	20.4	13	20.4	-	-	-	-
Pneumonia and Influenza	19	29.8	18	28.3	-	-	-	-
Diabetes Mellitus	7	11.0	7	11.0	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	.	5	.	-	-	-	-
Homicide	3	.	3	.	-	-	-	-
Suicide	7	11.0	7	11.0	-	-	2	.
Atherosclerosis	7	11.0	6	9.4	1	.	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Gratiot County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	39,741	Total Live Births:	554	Total Deaths:	407
Rank Among Counties:	40	Teenage Mothers:	84	Infant Deaths:	5
Per Square Mile:	69.7	Low Weight Births:	21	Neonatal Deaths:	3
Median Age:	31	First Births:	230	Postneonatal Deaths:	2
Children Ages 1-19:	11,769	Median Age of Mother:	25	Perinatal Deaths:	6
				Fetal Deaths:	4
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	324	Divorces:	156		
Marriage Rate:	16.3	Divorce Rate:	7.9		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	554	13.9	549	13.9	1	-	4	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	84	151.6	82	149.4	-	-	2	-
Low Weight	21	37.9	21	38.3	-	-	-	-
Under 1,500 Grams	4	-	4	-	-	-	-	-
< 38 Weeks Gestation	82	148.0	81	147.5	-	-	1	-
Prenatal Care Began in 1st Trimester	398	718.4	395	719.5	1	-	2	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	5	-	5	-	-	-	-	-
Neonatal Deaths	3	-	3	-	-	-	-	-
Postneonatal Deaths	2	-	2	-	-	-	-	-
Perinatal Deaths	6	10.8	6	10.8	-	-	-	-
Fetal Deaths	4	-	4	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	407	203	204	407	203	204	-	-	-	-	-	-	
Mortality Rate	10.2	10.6	9.9	10.3	10.7	10.0	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	5	1	-	3	1	8	4	6	20	33	71	255	-
White Male	4	1	-	1	1	6	3	3	16	23	42	103	-
White Female	1	-	-	2	-	2	1	3	4	10	29	152	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

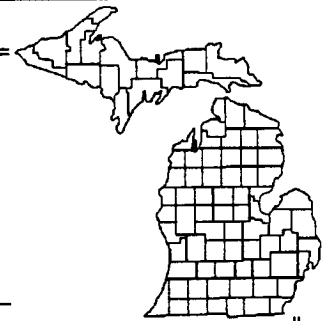
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	407	1,024.1	407	1,029.7	-	-	5	-
Diseases of the Heart	172	432.8	172	432.8	-	-	-	-
Malignant Neoplasms	77	193.8	77	193.8	-	-	1	-
Cerebrovascular Diseases	32	80.5	32	80.5	-	-	-	-
Accidents and Adverse Effects	15	37.7	15	37.7	-	-	2	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	47.8	19	47.8	-	-	-	-
Pneumonia and Influenza	22	55.4	22	55.4	-	-	-	-
Diabetes Mellitus	12	30.2	12	30.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	-	2	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	6	15.1	6	15.1	-	-	1	-
Atherosclerosis	6	15.1	6	15.1	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Hillsdale County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	43,810	Total Live Births:	650	Total Deaths:	387
Rank Among Counties:	36	Teenage Mothers:	82	Infant Deaths:	6
Per Square Mile:	72.7	Low Weight Births:	42	Neonatal Deaths:	4
Median Age:	32	First Births:	240	Postneonatal Deaths:	2
Children Ages 1-19:	12,810	Median Age of Mother:	25	Perinatal Deaths:	5
				Fetal Deaths:	3
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	311	Divorces:	241		
Marriage Rate:	14.2	Divorce Rate:	11.0		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	650	14.8	640	14.7	-	-	7	40.5
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	82	126.2	82	128.1	-	-	-	-
Low Weight	42	64.6	42	65.6	-	-	-	-
Under 1,500 Grams	5	7.7	5	7.7	-	-	-	-
< 38 Weeks Gestation	83	127.7	80	125.0	-	-	3	45.0
Prenatal Care Began in 1st Trimester	441	678.5	433	676.6	-	-	6	857.1

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	6	9.2	6	9.4	-	-	-	-
Neonatal Deaths	4	6.2	4	6.2	-	-	-	-
Postneonatal Deaths	2	3.0	2	3.0	-	-	-	-
Perinatal Deaths	5	7.7	4	6.2	-	-	1	15.0
Fetal Deaths	3	4.6	2	3.1	-	-	1	15.0

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	387	215	172	385	215	170	-	-	-	2	-	2	
Mortality Rate	8.8	10.0	7.7	8.8	10.0	7.7	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	6	2	2	1	3	2	7	16	24	62	71	191	-
White Male	3	1	1	1	3	2	4	12	14	43	38	93	-
White Female	3	1	1	-	-	-	3	4	10	18	33	97	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	1	-	-	1	-

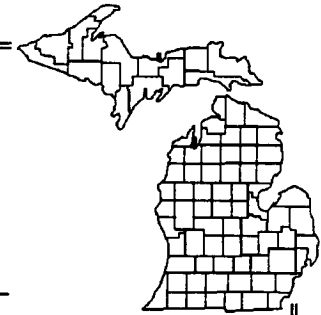
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	387	883.4	385	884.4	-	-	8	62.5
Diseases of the Heart	116	264.8	115	262.5	-	-	-	-
Malignant Neoplasms	96	219.1	96	219.1	-	-	1	7.5
Cerebrovascular Diseases	20	45.7	20	45.7	-	-	1	7.5
Accidents and Adverse Effects	28	63.9	28	63.9	-	-	3	23.4
Chronic Obstructive Pulmonary Diseases and Allied Conditions	21	47.9	20	45.7	-	-	-	-
Pneumonia and Influenza	16	36.5	16	36.5	-	-	1	7.5
Diabetes Mellitus	15	34.2	15	34.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	4.6	2	4.6	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	9	20.5	9	20.5	-	-	-	-
Atherosclerosis	3	6.9	3	6.9	-	-	-	-
AIDS	2	4.6	2	4.6	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Houghton County



POPULATION

As of July 1, 1989:	35,813
Rank Among Counties:	44
Per Square Mile:	35.3
Median Age:	31
Children Ages 1-19:	8,875

NATALITY

Total Live Births:	422
Teenage Mothers:	33
Low Weight Births:	13
First Births:	142
Median Age of Mother:	26

MORTALITY

Total Deaths:	377
Infant Deaths:	2
Neonatal Deaths:	1
Postneonatal Deaths:	1
Perinatal Deaths:	3
Fetal Deaths:	2
Maternal Deaths:	-

MARRIAGE

Marriages:	254
Marriage Rate:	14.2

DIVORCE

Divorces:	106
Divorce Rate:	5.9

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	422	11.8	404	11.5	1	-	16	36.2

	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	33	78.2	33	81.7	-	-	-	-
Low Weight	13	30.8	12	29.7	1	-	-	-
Under 1,500 Grams	4	-	3	-	1	-	-	-
< 38 Weeks Gestation	57	135.1	54	133.7	-	-	3	-
Prenatal Care Began in 1st Trimester	332	786.7	318	787.1	1	-	12	750.0

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	2	-	-	-	-	-
Neonatal Deaths	1	-	1	-	-	-	-	-
Postneonatal Deaths	1	-	1	-	-	-	-	-
Perinatal Deaths	3	-	3	-	-	-	-	-
Fetal Deaths	2	-	2	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Deaths	377	208	169	374	206	168	-	-	-	3	2	1
Mortality Rate	10.5	10.7	10.3	10.6	10.8	10.3	-	-	-	3	2	1

	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	-	3	3	4	5	19	26	92	223	-
White Male	1	-	-	-	2	3	2	2	12	16	59	109	-
White Female	1	-	-	-	1	-	2	2	6	10	32	114	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

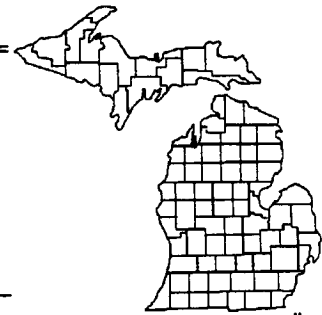
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	377	1,052.7	374	1,061.6	-	-	3	-
Diseases of the Heart	138	385.3	136	379.8	-	-	-	-
Malignant Neoplasms	70	195.5	70	195.5	-	-	-	-
Cerebrovascular Diseases	45	125.7	45	125.7	-	-	-	-
Accidents and Adverse Effects	18	50.3	18	50.3	-	-	3	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	12	33.5	12	33.5	-	-	-	-
Pneumonia and Influenza	20	55.8	19	53.1	-	-	-	-
Diabetes Mellitus	7	19.5	7	19.5	-	-	-	-
Chronic Liver Disease and Cirrhosis	6	16.8	6	16.8	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	3	-	3	-	-	-	-	-
Atherosclerosis	6	16.8	6	16.8	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Huron County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	36,793	Total Live Births:	514	Total Deaths:	385
Rank Among Counties:	43	Teenage Mothers:	51	Infant Deaths:	3
Per Square Mile:	44.3	Low Weight Births:	24	Neonatal Deaths:	2
Median Age:	34	First Births:	188	Postneonatal Deaths:	1
Children Ages 1-19:	10,639	Median Age of Mother:	26	Perinatal Deaths:	5
				Fetal Deaths:	3
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	254	Divorces:	103		
Marriage Rate:	13.8	Divorce Rate:	5.6		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	514	14.0	507	13.9	1	.	4	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	51	99.2	50	98.6	-	-	1	.
Low Weight	24	46.7	24	47.3	-	-	-	-
Under 1,500 Grams	4	.	4	.	-	-	-	-
< 38 Weeks Gestation	54	105.1	53	104.5	-	-	1	.
Prenatal Care Began in 1st Trimester	411	799.6	404	796.8	1	.	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	3	.	3	.	-	-	-	-
Neonatal Deaths	2	.	2	.	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	5	.	5	.	-	-	-	-
Fetal Deaths	3	.	3	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	385	195	190	384	194	190	-	-	-	1	1	-	
Mortality Rate	10.5	10.6	10.3	10.5	10.6	10.4	-	-	-	.	.	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	3	1	-	-	2	5	7	5	10	45	94	213	-
White Male	3	-	-	-	2	4	5	4	7	18	61	90	-
White Female	-	1	-	-	-	1	2	1	3	26	33	123	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	1	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	385	1,046.4	384	1,052.3	-	-	3	.
Diseases of the Heart	148	402.3	148	402.3	-	-	-	-
Malignant Neoplasms	91	247.3	91	247.3	-	-	-	-
Cerebrovascular Diseases	35	95.1	34	92.4	-	-	-	-
Accidents and Adverse Effects	18	48.9	18	48.9	-	-	2	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	7	19.0	7	19.0	-	-	-	-
Pneumonia and Influenza	24	65.2	24	65.2	-	-	-	-
Diabetes Mellitus	9	24.5	9	24.5	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	.	1	.	-	-	-	-
Homicide	1	.	1	.	-	-	1	.
Suicide	3	.	3	.	-	-	-	-
Atherosclerosis	1	.	1	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Ingham County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	275,926	Total Live Births:	4,560	Total Deaths:	1,743
Rank Among Counties:	6	Teenage Mothers:	599	Infant Deaths:	36
Per Square Mile:	493.0	Low Weight Births:	314	Neonatal Deaths:	20
Median Age:	29	First Births:	1,917	Postneonatal Deaths:	16
Children Ages 1-19:	73,688	Median Age of Mother:	26	Perinatal Deaths:	43
				Fetal Deaths:	27
				Maternal Deaths:	1
MARRIAGE		DIVORCE			
Marriages:	2,698	Divorces:	1,359		
Marriage Rate:	19.6	Divorce Rate:	9.9		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	4,560	16.5	3,780	15.4	644	26.3	119	21.0
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	599	131.4	430	113.8	160	248.4	8	67.2
Low Weight	314	68.9	223	59.0	84	130.4	6	50.4
Under 1,500 Grams	50	11.0	33	8.7	15	23.3	1	.
< 38 Weeks Gestation	696	152.6	506	133.9	169	262.4	17	142.9
Prenatal Care Began in 1st Trimester	3,587	786.6	3,061	809.8	425	659.9	90	756.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	36	7.9	31	8.2	4	.	1	.
Neonatal Deaths	20	4.4	19	5.0	1	.	-	.
Postneonatal Deaths	16	3.5	12	3.2	3	.	1	.
Perinatal Deaths	43	9.4	38	10.0	5	.	-	.
Fetal Deaths	27	5.9	22	5.8	5	.	-	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,743	842	901	1,593	759	834	137	76	61	13	7	6	
Mortality Rate	6.3	6.3	6.3	6.5	6.4	6.5	5.6	6.4	4.8	2.3	2.4	2.2	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	36	6	4	4	18	18	60	60	85	221	354	877	-
White Male	11	3	-	1	11	11	27	25	46	111	182	331	-
White Female	20	1	3	3	5	2	16	21	26	87	149	501	-
Black Male	3	1	1	-	1	2	11	8	5	13	13	18	-
Black Female	1	-	-	-	-	3	5	5	7	9	9	22	-
Other Male	1	-	-	-	1	-	1	-	-	1	1	1	-
Other Female	-	1	-	-	-	-	-	1	-	-	-	3	-

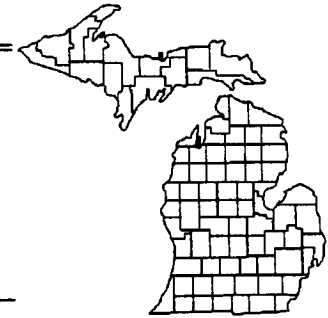
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,743	631.7	1,593	648.0	137	560.5	32	43.4
Diseases of the Heart	568	205.9	522	189.2	42	15.2	1	.
Malignant Neoplasms	419	151.9	387	140.3	27	9.8	5	.
Cerebrovascular Diseases	109	39.5	103	37.3	6	2.2	-	.
Accidents and Adverse Effects	73	26.5	62	22.5	10	3.6	16	21.7
Chronic Obstructive Pulmonary Diseases and Allied Conditions	87	31.5	82	29.7	5	.	-	.
Pneumonia and Influenza	72	26.1	66	23.9	6	2.2	-	.
Diabetes Mellitus	50	18.1	46	16.7	4	.	-	.
Chronic Liver Disease and Cirrhosis	20	7.2	20	7.2	-	.	-	.
Homicide	14	5.1	4	.	10	3.6	2	.
Suicide	25	9.1	21	7.6	3	.	2	.
Atherosclerosis	19	6.9	19	6.9	-	.	-	.
AIDS	8	2.9	5	.	3	.	-	.

Note: Rate is per 100,000 population in specified group.

1989 Profile of Ionia County



POPULATION

As of July 1, 1989:	57,297
Rank Among Counties:	30
Per Square Mile:	99.3
Median Age:	29
Children Ages 1-19:	17,815

NATALITY

Total Live Births:	836
Teenage Mothers:	107
Low Weight Births:	45
First Births:	291
Median Age of Mother:	25

MORTALITY

Total Deaths:	432
Infant Deaths:	7
Neonatal Deaths:	5
Postneonatal Deaths:	2
Perinatal Deaths:	13
Fetal Deaths:	8
Maternal Deaths:	-

MARRIAGE

Marriages:	449
Marriage Rate:	15.7

DIVORCE

Divorces:	246
Divorce Rate:	8.6

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	836	14.6	828	14.9	1	.	6	17.6
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	107	128.0	105	126.8	-	-	1	.
Low Weight	45	53.8	45	54.3	-	-	-	-
Under 1,500 Grams	10	12.0	10	12.1	-	-	-	-
< 38 Weeks Gestation	112	134.0	111	134.1	-	-	1	.
Prenatal Care Began in 1st Trimester	634	758.4	629	759.7	-	-	5	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	7	8.4	7	8.5	-	-	-	-
Neonatal Deaths	5	.	5	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	13	15.4	13	15.6	-	-	-	-
Fetal Deaths	8	9.5	8	9.6	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	432	246	186	427	244	183	2	1	1	3	1	2	
Mortality Rate	7.5	8.3	6.7	7.7	8.7	6.7	.	1	1	.	1	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	7	1	1	1	7	3	10	18	19	41	103	221	-
White Male	5	1	1	1	7	2	8	10	10	28	64	107	-
White Female	2	-	-	-	-	1	2	7	7	13	39	112	-
Black Male	-	-	-	-	-	-	-	1	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	1	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	1	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

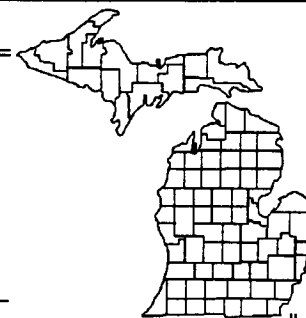
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	432	754.0	427	769.4	2	.	10	56.1
Diseases of the Heart	146	254.8	144	251.3	-	-	-	-
Malignant Neoplasms	100	174.5	100	174.5	-	-	-	-
Cerebrovascular Diseases	27	47.1	26	45.4	-	-	-	-
Accidents and Adverse Effects	28	48.9	28	48.9	-	-	7	39.3
Chronic Obstructive Pulmonary Diseases and Allied Conditions	25	43.6	25	43.6	-	-	-	-
Pneumonia and Influenza	15	26.2	15	26.2	-	-	-	-
Diabetes Mellitus	17	29.7	17	29.7	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	.	3	.	-	-	-	-
Homicide	1	.	1	.	-	-	1	.
Suicide	6	10.5	5	.	1	.	2	.
Atherosclerosis	3	.	3	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Iosco County



POPULATION

As of July 1, 1989:	30,808
Rank Among Counties:	47
Per Square Mile:	56.4
Median Age:	38
Children Ages 1-19:	8,340

NATALITY

Total Live Births:	574
Teenage Mothers:	66
Low Weight Births:	33
First Births:	222
Median Age of Mother:	24

MORTALITY

Total Deaths:	281
Infant Deaths:	2
Neonatal Deaths:	2
Postneonatal Deaths:	-
Perinatal Deaths:	6
Fetal Deaths:	4
Maternal Deaths:	-

MARRIAGE

Marriages:	278
Marriage Rate:	18.0

DIVORCE

Divorces:	142
Divorce Rate:	9.2

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	574	18.6	541	18.2	17	25.6	15	37.6
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	66	115.0	64	118.3	2	-	-	-
Low Weight	33	57.5	31	57.3	2	-	-	-
Under 1,500 Grams	9	15.7	9	16.6	-	-	-	-
< 38 Weeks Gestation	83	144.6	79	146.0	3	-	1	-
Prenatal Care Began in 1st Trimester	412	717.8	389	719.0	11	647.1	11	733.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	2	-	-	-	-	-
Neonatal Deaths	2	-	2	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	6	10.4	6	11.0	-	-	-	-
Fetal Deaths	4	-	4	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	281	159	122	281	159	122	-	-	-	-	-	-	
Mortality Rate	9.1	10.3	8.0	9.4	10.8	8.2	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	1	-	-	9	5	9	37	71	147	-
White Male	-	-	-	1	-	-	6	2	7	24	43	76	-
White Female	2	-	-	-	-	-	3	3	2	13	28	71	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

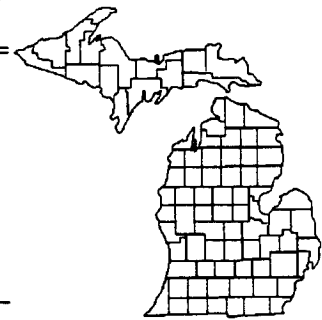
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	281	912.1	281	944.7	-	-	1	-
Diseases of the Heart	112	363.5	112	363.5	-	-	-	-
Malignant Neoplasms	67	217.5	67	217.5	-	-	-	-
Cerebrovascular Diseases	21	68.2	21	68.2	-	-	-	-
Accidents and Adverse Effects	14	45.4	14	45.4	-	-	1	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	10	32.5	10	32.5	-	-	-	-
Pneumonia and Influenza	6	19.5	6	19.5	-	-	-	-
Diabetes Mellitus	9	29.2	9	29.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	-	2	-	-	-	-	-
Homicide	1	-	1	-	-	-	-	-
Suicide	3	-	3	-	-	-	-	-
Atherosclerosis	4	-	4	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Iron County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	13,541	Total Live Births:	146	Total Deaths:	200
Rank Among Counties:	68	Teenage Mothers:	24	Infant Deaths:	-
Per Square Mile:	11.6	Low Weight Births:	8	Neonatal Deaths:	-
Median Age:	42	First Births:	48	Postneonatal Deaths:	-
Children Ages 1-19:	3,149	Median Age of Mother:	25	Perinatal Deaths:	3
		Fetal Deaths:			3
		Maternal Deaths:			-
MARRIAGE		DIVORCE			
Marriages:	98	Divorces:	41		
Marriage Rate:	14.5	Divorce Rate:	6.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	146	10.8	139	10.3	-	-	6	60.6
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	24	164.4	23	165.5	-	-	-	-
Low Weight	8	54.8	8	57.6	-	-	-	-
Under 1,500 Grams	2	.	2	.	-	-	-	-
< 38 Weeks Gestation	19	130.1	17	122.3	-	-	2	.
Prenatal Care Began in 1st Trimester	100	684.9	96	690.6	-	-	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	-	-	-	-	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	3	.	3	.	-	-	-	-
Fetal Deaths	3	.	3	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	200	105	95	199	105	94	-	-	-	1	-	1	
Mortality Rate	14.8	16.0	13.6	14.8	16.2	13.5	-	-	-	.	-	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	-	-	1	1	1	1	1	4	1	10	55	125	-
White Male	-	-	1	-	1	1	1	2	1	4	32	62	-
White Female	-	-	-	1	-	-	-	2	-	6	23	62	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

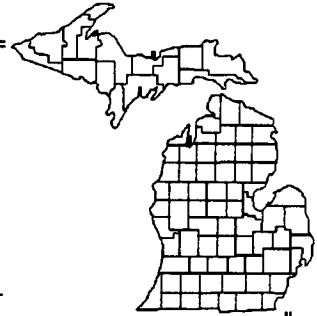
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	200	1,477.0	199	1,480.4	-	-	3	.
Diseases of the Heart	68	502.2	68	502.2	-	-	-	-
Malignant Neoplasms	48	354.5	48	354.5	-	-	-	-
Cerebrovascular Diseases	17	125.5	17	125.5	-	-	-	-
Accidents and Adverse Effects	5	.	5	.	-	-	1	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	3	.	3	.	-	-	-	-
Pneumonia and Influenza	14	103.4	14	103.4	-	-	-	-
Diabetes Mellitus	6	44.3	6	44.3	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	.	1	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	5	.	5	.	-	-	2	.
Atherosclerosis	2	.	2	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Isabella County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	54,404	Total Live Births:	694	Total Deaths:	327
Rank Among Counties:	32	Teenage Mothers:	67	Infant Deaths:	6
Per Square Mile:	94.4	Low Weight Births:	36	Neonatal Deaths:	2
Median Age:	27	First Births:	263	Postneonatal Deaths:	4
Children Ages 1-19:	14,408	Median Age of Mother:	26	Perinatal Deaths:	5
				Fetal Deaths:	4
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	424	Divorces:	212		
Marriage Rate:	15.6	Divorce Rate:	7.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	694	12.8	659	12.5	4	.	29	26.9
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	67	96.5	58	88.0	1	.	8	275.9
Low Weight	36	51.9	33	50.1	-	-	2	.
Under 1,500 Grams	5	.	5	.	-	-	-	.
< 38 Weeks Gestation	82	118.2	76	115.3	-	-	5	.
Prenatal Care Began in 1st Trimester	531	765.1	511	775.4	2	.	17	586.2

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	6	8.6	5	.	-	-	1	.
Neonatal Deaths	2	.	2	.	-	-	-	.
Postneonatal Deaths	4	.	3	.	-	-	1	.
Perinatal Deaths	5	.	5	.	-	-	-	.
Fetal Deaths	4	.	4	.	-	-	-	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	327	159	168	314	153	161	2	1	1	11	5	6	
Mortality Rate	6.0	6.1	6.0	5.9	6.0	5.9	.	.	.	10.2	5	11.7	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	6	1	1	-	2	3	9	5	18	38	80	164	-
White Male	3	-	1	-	1	3	5	5	9	20	44	62	-
White Female	2	1	-	-	1	-	4	-	7	16	32	98	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	1	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Male	-	-	-	-	-	-	-	-	-	1	2	1	-
Other Female	1	-	-	-	-	-	-	2	1	2	-	-	-

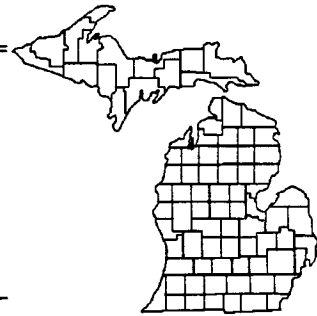
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	327	601.1	314	593.6	2	.	4	.
Diseases of the Heart	113	207.7	109	200.4	2	.	-	.
Malignant Neoplasms	80	147.0	77	141.5	-	-	1	.
Cerebrovascular Diseases	32	59.8	31	57.0	-	-	-	.
Accidents and Adverse Effects	17	31.2	17	31.2	-	-	2	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	11	20.2	11	20.2	-	-	-	.
Pneumonia and Influenza	13	23.9	13	23.9	-	-	-	.
Diabetes Mellitus	11	20.2	9	16.5	-	-	-	.
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	.
Homicide	-	-	-	-	-	-	-	.
Suicide	3	.	3	.	-	-	-	.
Atherosclerosis	6	11.0	6	11.0	-	-	-	.
AIDS	-	-	-	-	-	-	-	.

Note: Rate is per 100,000 population in specified group.

1989 Profile of Jackson County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	150,133	Total Live Births:	2,250	Total Deaths:	1,308
Rank Among Counties:	13	Teenage Mothers:	362	Infant Deaths:	25
Per Square Mile:	213.1	Low Weight Births:	184	Neonatal Deaths:	19
Median Age:	33	First Births:	870	Postneonatal Deaths:	6
Children Ages 1-19:	41,550	Median Age of Mother:	25	Perinatal Deaths:	41
				Fetal Deaths:	27
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	1,369	Divorces:	697		
Marriage Rate:	18.2	Divorce Rate:	9.3		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	2,250	15.0	2,016	14.6	207	18.4	21	17.4
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	362	160.9	297	147.3	59	285.0	5	.
Low Weight	184	81.8	153	75.9	29	140.1	1	.
Under 1,500 Grams	36	16.0	31	15.4	5	.	.	.
< 38 Weeks Gestation	359	159.6	304	150.8	49	236.7	4	.
Prenatal Care Began in 1st Trimester	1,548	688.0	1,431	709.8	100	483.1	15	714.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	25	11.1	23	11.4	2	.	.	.
Neonatal Deaths	19	8.4	18	8.9	1	.	.	.
Postneonatal Deaths	6	2.7	5	.	1	.	.	.
Perinatal Deaths	41	18.0	35	17.2	5	.	1	.
Fetal Deaths	27	11.9	22	10.8	4	.	1	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,308	666	642	1,229	616	613	74	48	26	5	2	3	
Mortality Rate	8.7	8.9	8.6	8.9	9.1	8.8	6.6	7.0	5.9	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	25	4	2	3	14	10	37	35	60	173	297	648	.
White Male	13	3	1	2	7	6	22	17	31	108	162	244	.
White Female	10	.	.	.	3	2	6	10	21	57	120	383	.
Black Male	.	1	.	1	2	2	7	7	6	4	6	12	.
Black Female	2	.	.	.	1	.	1	1	2	4	6	9	.
Other Male	.	.	1	.	.	.	1	.	.	.	.	.	.
Other Female	.	.	.	.	1	.	.	.	.	.	2	.	.

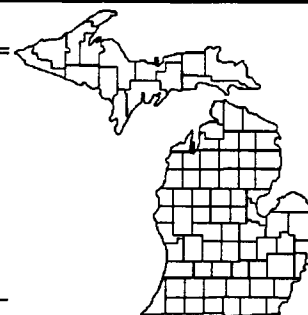
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,308	871.2	1,229	892.7	74	657.3	23	55.4
Diseases of the Heart	448	298.4	429	285.7	19	12.7	1	.
Malignant Neoplasms	331	220.5	318	211.8	13	8.7	2	.
Cerebrovascular Diseases	61	40.6	57	38.0	4	.	.	.
Accidents and Adverse Effects	67	44.6	62	41.3	4	.	11	26.5
Chronic Obstructive Pulmonary Diseases and Allied Conditions	65	43.3	63	42.0	1	.	.	.
Pneumonia and Influenza	51	34.0	50	33.3	1	.	1	.
Diabetes Mellitus	27	18.0	26	17.3	.	.	.	.
Chronic Liver Disease and Cirrhosis	16	10.7	14	9.3	2	.	.	.
Homicide	10	6.7	4	.	5	.	3	.
Suicide	14	9.3	10	6.7	4	.	1	.
Atherosclerosis	17	11.3	17	11.3	.	.	.	.
AIDS	13	8.7	4	.	9	6.0	.	.

Note: Rate is per 100,000 population in specified group.

1989 Profile of Kalamazoo County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	218,660	Total Live Births:	3,425	Total Deaths:	1,627
Rank Among Counties:	8	Teenage Mothers:	398	Infant Deaths:	37
Per Square Mile:	389.1	Low Weight Births:	206	Neonatal Deaths:	22
Median Age:	31	First Births:	1,448	Postneonatal Deaths:	15
Children Ages 1-19:	58,177	Median Age of Mother:	27	Perinatal Deaths:	32
				Fetal Deaths:	14
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	2,100	Divorces:	1,050		
Marriage Rate:	19.2	Divorce Rate:	9.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	3,425	15.7	2,836	14.4	532	27.7	52	17.7
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	398	116.2	255	89.9	141	265.0	2	-
Low Weight	206	60.1	139	49.0	61	114.7	6	115.4
Under 1,500 Grams	35	10.2	24	8.5	10	18.8	1	-
< 38 Weeks Gestation	550	160.6	397	140.0	140	263.2	13	250.0
Prenatal Care Began in 1st Trimester	2,795	816.1	2,424	854.7	325	610.9	42	807.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	37	10.8	27	9.5	9	16.9	1	-
Neonatal Deaths	22	6.4	16	5.6	6	11.3	-	-
Postneonatal Deaths	15	4.4	11	3.9	3	-	-	-
Perinatal Deaths	32	9.3	23	8.1	9	16.8	-	-
Fetal Deaths	14	4.1	10	3.5	4	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,627	773	854	1,499	707	792	120	60	60	8	6	2	
Mortality Rate	7.4	7.3	7.6	7.6	7.4	7.9	6.2	6.5	6.0	2.7	4.1	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	37	5	2	5	9	9	32	66	74	187	372	829	-
White Male	13	3	-	3	6	4	24	32	45	102	196	279	-
White Female	14	-	1	2	2	2	3	19	19	65	150	515	-
Black Male	4	1	1	-	1	2	2	6	7	8	15	13	-
Black Female	5	1	-	-	-	-	3	9	3	8	10	21	-
Other Male	-	-	-	-	-	1	-	-	-	2	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	1	-	-	-

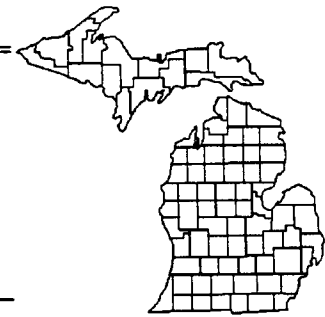
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,627	744.1	1,499	762.8	120	624.3	21	36.1
Diseases of the Heart	526	240.6	492	225.0	32	14.6	-	-
Malignant Neoplasms	401	183.4	373	170.6	28	12.8	3	-
Cerebrovascular Diseases	94	43.0	92	42.1	2	-	-	-
Accidents and Adverse Effects	59	27.0	51	23.3	5	-	9	15.5
Chronic Obstructive Pulmonary Diseases and Allied Conditions	74	33.8	71	32.5	3	-	-	-
Pneumonia and Influenza	79	36.1	76	34.8	3	-	-	-
Diabetes Mellitus	33	15.1	27	12.3	6	2.7	1	-
Chronic Liver Disease and Cirrhosis	18	8.2	17	7.8	1	-	-	-
Homicide	8	3.7	4	-	4	-	1	-
Suicide	13	5.9	13	5.9	-	-	-	-
Atherosclerosis	12	5.5	12	5.5	-	-	-	-
AIDS	6	2.7	5	-	1	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Kalkaska County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	12,518	Total Live Births:	191	Total Deaths:	107
Rank Among Counties:	69	Teenage Mothers:	38	Infant Deaths:	1
Per Square Mile:	22.2	Low Weight Births:	19	Neonatal Deaths:	-
Median Age:	31	First Births:	72	Postneonatal Deaths:	-
Children Ages 1-19:	3,910	Median Age of Mother:	25	Perinatal Deaths:	1
				Fetal Deaths:	1
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	119	Divorces:	73		
Marriage Rate:	19.0	Divorce Rate:	11.7		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	191	15.3	180	14.4	-	-	11	186.4
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	38	199.0	36	200.0	-	-	2	.
Low Weight	19	99.5	18	100.0	-	-	1	.
Under 1,500 Grams	3	.	2	.	-	-	1	.
< 38 Weeks Gestation	33	172.8	31	172.2	-	-	2	.
Prenatal Care Began in 1st Trimester	129	675.4	123	683.3	-	-	6	545.5

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	1	.	-	-	-	-	-	-
Fetal Deaths	1	.	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	107	66	41	107	66	41	-	-	-	-	-	-	
Mortality Rate	8.5	10.3	6.7	8.6	10.3	6.8	-	-	-	-	-	-	
	Age In Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	1	1	-	3	2	2	8	5	12	31	41	-
White Male	-	1	1	-	2	-	2	5	1	9	22	23	-
White Female	1	-	-	-	1	2	-	3	4	3	9	18	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

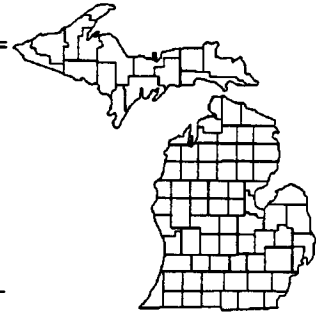
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	107	854.8	107	858.8	-	-	5	.
Diseases of the Heart	27	215.7	27	215.7	-	-	-	-
Malignant Neoplasms	27	215.7	27	215.7	-	-	-	-
Cerebrovascular Diseases	10	79.9	10	79.9	-	-	-	-
Accidents and Adverse Effects	8	63.9	8	63.9	-	-	1	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	6	47.9	6	47.9	-	-	-	-
Pneumonia and Influenza	2	.	2	.	-	-	-	-
Diabetes Mellitus	3	.	3	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	1	.	1	.	-	-	1	.
Suicide	5	.	5	.	-	-	2	.
Atherosclerosis	2	.	2	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Kent County



POPULATION

As of July 1, 1989: 489,620
 Rank Among Counties: 4
 Per Square Mile: 568.2
 Median Age: 30
 Children Ages 1-19: 144,360

NATALITY

Total Live Births: 9,421
 Teenage Mothers: 1,051
 Low Weight Births: 554
 First Births: 3,677
 Median Age of Mother: 28

MORTALITY

Total Deaths: 3,657
 Infant Deaths: 84
 Neonatal Deaths: 52
 Postneonatal Deaths: 32
 Perinatal Deaths: 92
 Fetal Deaths: 46
 Maternal Deaths: -

MARRIAGE

Marriages: 5,039
 Marriage Rate: 20.6

DIVORCE

Divorces: 2,289
 Divorce Rate: 9.4

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	9,421	19.2	8,099	18.3	1,177	29.3	135	21.7
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	1,051	111.6	688	84.9	339	288.0	23	170.4
Low Weight	554	58.8	388	47.9	156	132.5	10	74.1
Under 1,500 Grams	112	11.9	78	9.6	32	27.2	2	-
< 38 Weeks Gestation	1,246	132.3	958	118.3	270	229.4	16	118.5
Prenatal Care Began in 1st Trimester	7,558	802.3	6,760	834.7	695	590.5	95	703.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	84	8.9	63	7.8	20	17.0	1	-
Neonatal Deaths	52	5.5	35	4.3	16	13.6	1	-
Postneonatal Deaths	32	3.4	28	3.5	4	-	-	-
Perinatal Deaths	92	9.7	67	8.2	21	17.7	2	-
Fetal Deaths	46	4.9	35	4.3	8	6.8	1	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	3,657	1,805	1,852	3,373	1,649	1,724	260	141	119	24	15	9	
Mortality Rate	7.5	7.6	7.3	7.6	7.7	7.6	6.5	7.4	5.7	3.9	5.0	2.8	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	84	23	12	13	25	26	89	111	199	421	747	1,907	-
White Male	35	4	4	5	19	18	46	60	104	236	374	746	-
White Female	28	15	3	6	3	6	22	33	68	140	312	1,086	-
Black Male	12	1	2	-	3	3	13	10	14	19	30	34	-
Black Female	8	2	2	1	-	1	7	8	11	22	25	32	-
Other Male	1	-	-	1	-	-	1	-	1	4	3	4	-
Other Female	-	1	-	-	-	-	-	-	-	-	-	5	-

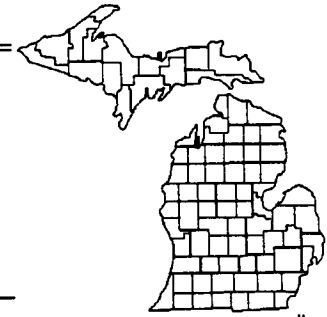
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	3,657	746.9	3,373	761.0	260	647.3	73	50.6
Diseases of the Heart	1,273	260.0	1,192	243.5	75	15.3	5	-
Malignant Neoplasms	898	183.4	834	170.3	60	12.3	10	6.9
Cerebrovascular Diseases	243	49.6	226	46.2	16	3.3	2	-
Accidents and Adverse Effects	145	29.6	129	26.3	15	3.1	27	18.7
Chronic Obstructive Pulmonary Diseases and Allied Conditions	118	24.1	114	23.3	2	-	-	-
Pneumonia and Influenza	173	35.3	158	32.3	11	2.2	4	-
Diabetes Mellitus	67	13.7	58	11.8	8	1.6	-	-
Chronic Liver Disease and Cirrhosis	38	7.8	36	7.4	2	-	-	-
Homicide	18	3.7	7	1.4	10	2.0	1	-
Suicide	47	9.6	43	8.8	4	-	5	-
Atherosclerosis	59	12.1	55	11.2	4	-	-	-
AIDS	14	2.9	11	2.2	3	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Keweenaw County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	1,951	Total Live Births:	11	Total Deaths:	32
Rank Among Counties:	83	Teenage Mothers:	1	Infant Deaths:	-
Per Square Mile:	3.6	Low Weight Births:	-	Neonatal Deaths:	-
Median Age:	45	First Births:	6	Postneonatal Deaths:	-
Children Ages 1-19:	382	Median Age of Mother:	31	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	15	Divorces:	5		
Marriage Rate:	15.4	Divorce Rate:	5.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	11	5.6	10	5.2	-	-	1	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	1	-	1	-	-	-	-	-
Low Weight	-	-	-	-	-	-	-	-
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	-	-	-	-	-	-	-	-
Prenatal Care Began in 1st Trimester	8	727.3	7	700.0	-	-	1	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	-	-	-	-	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	32	18	14	32	18	14	-	-	-	-	-	-	
Mortality Rate	16.4	17.1	15.6	16.6	17.3	15.7	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	-	-	-	-	-	-	-	1	1	1	1	1	-
White Male	-	-	-	-	-	-	-	1	1	1	1	1	-
White Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

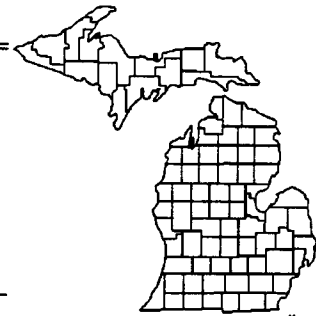
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	32	1,640.2	32	1,657.2	-	-	-	-
Diseases of the Heart	12	615.1	12	615.1	-	-	-	-
Malignant Neoplasms	9	461.3	9	461.3	-	-	-	-
Cerebrovascular Diseases	3	-	3	-	-	-	-	-
Accidents and Adverse Effects	2	-	2	-	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	1	-	1	-	-	-	-	-
Pneumonia and Influenza	1	-	1	-	-	-	-	-
Diabetes Mellitus	-	-	-	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	-	1	-	-	-	-	-
Homicide	1	-	-	-	1	-	-	-
Suicide	1	-	1	-	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Lake County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	9,191	Total Live Births:	119	Total Deaths:	151
Rank Among Counties:	75	Teenage Mothers:	27	Infant Deaths:	2
Per Square Mile:	16.2	Low Weight Births:	10	Neonatal Deaths:	-
Median Age:	40	First Births:	47	Postneonatal Deaths:	2
Children Ages 1-19:	2,235	Median Age of Mother:	23	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	68	Divorces:	26		
Marriage Rate:	14.8	Divorce Rate:	5.7		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	119	12.9	98	12.3	20	17.1	1	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	27	226.9	18	183.7	9	450.0	-	-
Low Weight	10	84.0	9	91.8	1	-	-	-
Under 1,500 Grams	2	-	2	-	-	-	-	-
< 38 Weeks Gestation	12	100.8	10	102.0	2	-	-	-
Prenatal Care Began in 1st Trimester	61	512.8	55	561.2	5	-	1	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	1	-	1	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	2	-	1	-	1	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	151	100	51	114	81	33	36	19	17	1	-	1	
Mortality Rate	16.4	22.6	10.7	14.3	20.8	8.1	30.7	37.3	25.6	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	-	-	1	-	3	5	29	41	70	-
White Male	1	-	-	-	-	1	-	2	4	20	26	27	-
White Female	-	-	-	-	-	-	-	-	-	6	8	19	-
Black Male	1	-	-	-	-	-	-	1	-	2	6	9	-
Black Female	-	-	-	-	-	-	-	-	1	1	-	15	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

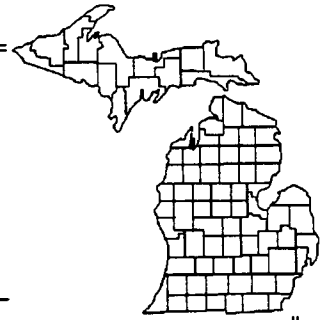
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	151	1,642.9	114	1,430.4	36	3,069.1	-	-
Diseases of the Heart	57	620.2	43	467.8	14	152.3	-	-
Malignant Neoplasms	39	424.3	35	380.8	4	-	-	-
Cerebrovascular Diseases	10	108.8	9	97.9	1	-	-	-
Accidents and Adverse Effects	5	-	4	-	1	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	6	65.3	5	-	1	-	-	-
Pneumonia and Influenza	4	-	-	-	4	-	-	-
Diabetes Mellitus	6	65.3	2	-	3	-	-	-
Chronic Liver Disease and Cirrhosis	1	-	1	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	1	-	1	-	-	-	-	-
Atherosclerosis	1	-	1	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Lapeer County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	75,158	Total Live Births:	1,057	Total Deaths:	469
Rank Among Counties:	23	Teenage Mothers:	123	Infant Deaths:	11
Per Square Mile:	114.2	Low Weight Births:	47	Neonatal Deaths:	8
Median Age:	30	First Births:	419	Postneonatal Deaths:	3
Children Ages 1-19:	24,181	Median Age of Mother:	26	Perinatal Deaths:	8
				Fetal Deaths:	3
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	612	Divorces:	320		
Marriage Rate:	16.3	Divorce Rate:	8.5		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,057	14.1	1,046	14.0	1	.	6	13.6
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	123	116.4	121	115.7	-	-	1	.
Low Weight	47	44.5	47	44.9	-	-	-	-
Under 1,500 Grams	11	10.4	11	10.5	-	-	-	-
< 38 Weeks Gestation	148	140.0	148	141.5	-	-	-	-
Prenatal Care Began in 1st Trimester	851	805.1	845	807.8	1	.	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	11	10.4	11	10.5	-	-	-	-
Neonatal Deaths	8	7.6	8	7.6	-	-	-	-
Postneonatal Deaths	3	.	3	.	-	-	-	-
Perinatal Deaths	8	7.5	8	7.6	-	-	-	-
Fetal Deaths	3	.	3	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	469	256	213	465	255	210	1	-	1	3	1	2	
Mortality Rate	6.2	6.9	5.6	6.2	6.9	5.6	.	-	.	.	.	.
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	11	1	1	2	5	2	14	23	27	59	113	211	-
White Male	7	1	1	1	3	1	9	18	14	44	62	94	-
White Female	4	-	-	1	2	1	5	5	12	15	50	115	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Male	-	-	-	-	-	-	-	-	1	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	469	624.0	465	623.9	1	.	9	37.2
Diseases of the Heart	173	230.2	172	228.9	-	-	1	.
Malignant Neoplasms	103	137.0	102	135.7	-	-	-	-
Cerebrovascular Diseases	24	31.9	23	30.6	-	-	-	-
Accidents and Adverse Effects	33	43.9	33	43.9	-	-	4	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	14	18.6	14	18.6	-	-	-	-
Pneumonia and Influenza	7	9.3	7	9.3	-	-	-	-
Diabetes Mellitus	15	20.0	15	20.0	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	.	4	.	-	-	-	-
Homicide	2	.	2	.	-	-	1	.
Suicide	6	8.0	6	8.0	-	-	1	.
Atherosclerosis	5	.	5	.	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Leelanau County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	15,856	Total Live Births:	233	Total Deaths:	150
Rank Among Counties:	66	Teenage Mothers:	15	Infant Deaths:	2
Per Square Mile:	46.4	Low Weight Births:	14	Neonatal Deaths:	1
Median Age:	35	First Births:	92	Postneonatal Deaths:	1
Children Ages 1-19:	4,213	Median Age of Mother:	29	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	125	Divorces:	65		
Marriage Rate:	15.8	Divorce Rate:	8.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	233	14.7	218	14.0	-	-	14	55.8
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	15	64.4	12	55.0	-	-	2	-
Low Weight	14	60.1	12	55.0	-	-	2	-
Under 1,500 Grams	2	-	2	-	-	-	-	-
< 38 Weeks Gestation	31	133.0	25	114.7	-	-	6	428.6
Prenatal Care Began in 1st Trimester	182	781.1	175	802.8	-	-	6	428.6

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	2	-	-	-	-	-
Neonatal Deaths	1	-	1	-	-	-	-	-
Postneonatal Deaths	1	-	1	-	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	150	76	74	147	75	72	-	-	-	3	1	2	
Mortality Rate	9.5	9.6	9.3	9.4	9.6	9.3	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	1	-	2	5	5	2	11	36	88	-
White Male	-	-	-	1	-	1	3	4	2	8	21	35	-
White Female	2	-	-	-	-	1	-	1	-	3	15	50	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	1	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	1	-	-	-	-	1	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	150	946.0	147	943.3	-	-	1	-
Diseases of the Heart	53	334.3	53	334.3	-	-	-	-
Malignant Neoplasms	38	239.7	38	239.7	-	-	1	-
Cerebrovascular Diseases	11	69.4	11	69.4	-	-	-	-
Accidents and Adverse Effects	6	37.8	5	-	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	-	5	-	-	-	-	-
Pneumonia and Influenza	4	-	4	-	-	-	-	-
Diabetes Mellitus	2	-	2	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	4	-	4	-	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Lenawee County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	92,154	Total Live Births:	1,340	Total Deaths:	779
Rank Among Counties:	20	Teenage Mothers:	194	Infant Deaths:	11
Per Square Mile:	122.5	Low Weight Births:	60	Neonatal Deaths:	8
Median Age:	32	First Births:	528	Postneonatal Deaths:	3
Children Ages 1-19:	27,255	Median Age of Mother:	25	Perinatal Deaths:	13
				Fetal Deaths:	5
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	655	Divorces:	379		
Marriage Rate:	14.2	Divorce Rate:	8.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,340	14.5	1,313	14.5	19	19.8	7	11.5
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	194	144.8	189	143.9	5	-	-	-
Low Weight	60	44.8	59	44.9	-	-	1	-
Under 1,500 Grams	8	6.0	8	6.1	-	-	-	-
< 38 Weeks Gestation	179	133.6	175	133.3	3	-	1	-
Prenatal Care Began in 1st Trimester	1,072	800.0	1,050	799.7	14	736.8	7	1,000.0

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	11	8.2	10	7.6	1	-	-	-
Neonatal Deaths	8	6.0	7	5.3	1	-	-	-
Postneonatal Deaths	3	-	3	-	-	-	-	-
Perinatal Deaths	13	9.7	11	8.4	1	-	-	-
Fetal Deaths	5	-	4	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	779	389	390	770	384	386	2	1	1	7	4	3	
Mortality Rate	8.5	8.6	8.3	8.5	8.7	8.3	-	-	-	11.5	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	11	2	-	4	10	7	19	25	36	86	198	381	-
White Male	5	-	-	2	3	5	14	17	18	43	107	170	-
White Female	5	1	-	2	7	2	5	8	17	41	89	209	-
Black Male	-	-	-	-	-	-	-	-	-	-	1	-	-
Black Female	1	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	1	1	1	1	-
Other Female	-	1	-	-	-	-	-	-	-	1	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	779	845.3	770	850.0	2	-	16	58.7
Diseases of the Heart	257	278.9	255	276.7	-	-	-	-
Malignant Neoplasms	206	223.5	204	221.4	1	-	1	-
Cerebrovascular Diseases	60	65.1	59	64.0	-	-	-	-
Accidents and Adverse Effects	53	57.5	52	56.4	-	-	13	47.7
Chronic Obstructive Pulmonary Diseases and Allied Conditions	31	33.6	31	33.6	-	-	-	-
Pneumonia and Influenza	26	28.2	26	28.2	-	-	-	-
Diabetes Mellitus	14	15.2	14	15.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	6	6.5	6	6.5	-	-	-	-
Homicide	3	-	2	-	-	-	-	-
Suicide	9	9.8	9	9.8	-	-	-	-
Atherosclerosis	13	14.1	13	14.1	-	-	-	-
AIDS	1	-	1	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Livingston County

**POPULATION**

As of July 1, 1989: 115,270
 Rank Among Counties: 18
 Per Square Mile: 200.7
 Median Age: 32
 Children Ages 1-19: 35,399

NATALITY

Total Live Births: 1,578
 Teenage Mothers: 99
 Low Weight Births: 71
 First Births: 625
 Median Age of Mother: 28

MORTALITY

Total Deaths: 626
 Infant Deaths: 7
 Neonatal Deaths: 5
 Postneonatal Deaths: 2
 Perinatal Deaths: 11
 Fetal Deaths: 6
 Maternal Deaths: 1

MARRIAGE

Marriages: 961
 Marriage Rate: 16.7

DIVORCE

Divorces: 527
 Divorce Rate: 9.1

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,578	13.7	1,565	13.7	2	.	9	9.2
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	99	62.7	97	62.0	-	-	1	.
Low Weight	71	45.0	71	45.4	-	-	-	-
Under 1,500 Grams	13	8.2	13	8.3	-	-	-	-
< 38 Weeks Gestation	213	135.0	209	133.5	2	.	-	-
Prenatal Care Began in 1st Trimester	1,311	830.8	1,300	830.7	2	.	7	777.8

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	7	4.4	7	4.5	-	-	-	-
Neonatal Deaths	5	.	5	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	11	6.9	11	6.6	-	-	-	-
Fetal Deaths	6	3.8	6	3.8	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	626	325	301	623	324	299	2	-	2	1	1	-	
Mortality Rate	5.4	5.5	5.3	5.5	5.6	5.3	.	-	.	1	1	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	7	2	1	1	3	2	22	24	43	89	163	269	-
White Male	6	-	1	-	3	2	15	18	30	44	90	115	-
White Female	1	2	-	1	-	-	7	6	13	44	73	152	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	2	-
Other Male	-	-	-	-	-	-	-	-	-	1	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

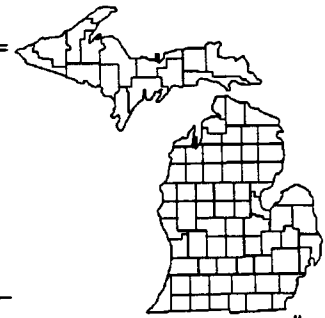
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	626	543.1	623	547.0	2	.	7	19.8
Diseases of the Heart	227	196.9	225	195.2	2	.	-	-
Malignant Neoplasms	182	157.9	181	157.0	-	-	1	.
Cerebrovascular Diseases	28	24.3	28	24.3	-	-	-	-
Accidents and Adverse Effects	32	27.8	32	27.8	-	-	3	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	28	24.3	28	24.3	-	-	-	-
Pneumonia and Influenza	10	8.7	10	8.7	-	-	-	-
Diabetes Mellitus	15	13.0	15	13.0	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	.	4	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	10	8.7	10	8.7	-	-	-	-
Atherosclerosis	4	.	4	.	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Luce County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	5,840	Total Live Births:	86	Total Deaths:	73
Rank Among Counties:	82	Teenage Mothers:	20	Infant Deaths:	2
Per Square Mile:	6.5	Low Weight Births:	3	Neonatal Deaths:	-
Median Age:	37	First Births:	32	Postneonatal Deaths:	2
Children Ages 1-19:	1,503	Median Age of Mother:	24	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	41	Divorces:	24		
Marriage Rate:	14.0	Divorce Rate:	8.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	86	14.7	82	14.7	-	-	4	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	20	232.6	20	243.9	-	-	-	-
Low Weight	3	-	3	-	-	-	-	-
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	12	139.5	12	146.3	-	-	-	-
Prenatal Care Began in 1st Trimester	59	686.0	57	695.1	-	-	2	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	1	-	-	-	1	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	2	-	1	-	-	-	1	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	73	46	27	70	45	25	-	-	-	3	1	2	
Mortality Rate	12.5	15.8	9.2	12.5	16.4	8.8	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	-	-	1	-	1	4	9	18	38	-
White Male	-	-	-	-	-	-	-	1	3	5	14	22	-
White Female	1	-	-	-	-	1	-	-	1	3	4	15	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Female	1	-	-	-	-	-	-	-	-	1	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	73	1,250.0	70	1,252.9	-	-	-	-
Diseases of the Heart	24	411.0	24	411.0	-	-	-	-
Malignant Neoplasms	18	308.2	17	291.1	-	-	-	-
Cerebrovascular Diseases	3	-	3	-	-	-	-	-
Accidents and Adverse Effects	3	-	3	-	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	-	4	-	-	-	-	-
Pneumonia and Influenza	3	-	3	-	-	-	-	-
Diabetes Mellitus	1	-	1	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	-	1	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	-	-	-	-	-	-	-	-
Atherosclerosis	1	-	1	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Mackinac County



POPULATION

As of July 1, 1989:	10,512
Rank Among Counties:	74
Per Square Mile:	10.3
Median Age:	36
Children Ages 1-19:	2,793

NATALITY

Total Live Births:	157
Teenage Mothers:	23
Low Weight Births:	10
First Births:	60
Median Age of Mother:	24

MORTALITY

Total Deaths:	129
Infant Deaths:	2
Neonatal Deaths:	2
Postneonatal Deaths:	-
Perinatal Deaths:	2
Fetal Deaths:	1
Maternal Deaths:	-

MARRIAGE

Marriages:	166
Marriage Rate:	31.6

DIVORCE

Divorces:	47
Divorce Rate:	8.9

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	157	14.9	132	14.0	1	-	24	22.9
Teenage Mothers	23	146.5	12	90.9	1	-	10	416.7
Low Weight	10	63.7	9	68.2	-	-	1	-
Under 1,500 Grams	1	-	1	-	-	-	-	-
< 38 Weeks Gestation	25	159.2	22	166.7	-	-	3	-
Prenatal Care Began in 1st Trimester	114	726.1	101	765.2	-	-	13	541.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	-	1	-	-	-	1	-
Neonatal Deaths	2	-	1	-	-	-	1	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	2	-	2	-	-	-	-	-
Fetal Deaths	1	-	1	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	129	71	58	120	65	55	-	-	-	9	6	3	
Mortality Rate	12.3	13.9	10.8	12.7	14.2	11.2	-	-	-	8.6	10.9	-	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	1	1	-	-	-	-	1	5	9	17	22	72	-
White Female	-	-	-	-	-	-	-	2	6	9	16	29	-
Black Male	-	-	-	-	-	-	-	1	3	6	4	41	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	1	-	-	-	-	-	-	-	-	2	1	1	-
Other Female	-	-	-	-	-	-	-	1	-	-	1	1	-

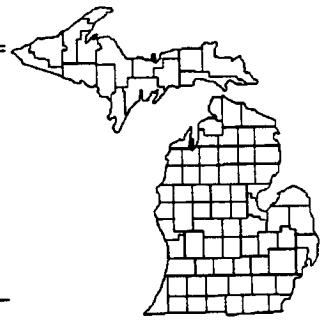
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	129	1,227.2	120	1,268.2	-	-	1	-
Diseases of the Heart	46	437.6	43	409.1	-	-	-	-
Malignant Neoplasms	34	323.4	33	313.9	-	-	-	-
Cerebrovascular Diseases	10	95.1	10	95.1	-	-	-	-
Accidents and Adverse Effects	4	-	3	-	-	-	1	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	12	114.2	11	104.6	-	-	-	-
Pneumonia and Influenza	8	76.1	7	66.6	-	-	-	-
Diabetes Mellitus	2	-	2	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	-	1	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	-	2	-	-	-	-	-
Atherosclerosis	1	-	1	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Macomb County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	708,905	Total Live Births:	10,075	Total Deaths:	5,719
Rank Among Counties:	3	Teenage Mothers:	617	Infant Deaths:	80
Per Square Mile:	1,469.5	Low Weight Births:	592	Neonatal Deaths:	50
Median Age:	33	First Births:	4,213	Postneonatal Deaths:	30
Children Ages 1-19:	189,556	Median Age of Mother:	27	Perinatal Deaths:	84
				Fetal Deaths:	38
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	6,403	Divorces:	3,024		
Marriage Rate:	18.1	Divorce Rate:	8.5		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	10,075	14.2	9,579	13.9	203	19.3	166	17.5
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	617	61.2	551	57.5	44	216.7	13	78.3
Low Weight	582	57.8	531	55.4	24	118.2	17	102.4
Under 1,500 Grams	110	10.9	98	10.2	4	.	3	.
< 38 Weeks Gestation	1,482	147.1	1,367	142.7	58	285.7	33	198.8
Prenatal Care Began in 1st Trimester	8,755	869.0	8,400	876.9	124	610.8	135	813.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	80	7.9	76	7.9	3	.	1	.
Neonatal Deaths	50	5.0	48	5.0	1	.	1	.
Postneonatal Deaths	30	3.0	28	2.9	2	.	-	.
Perinatal Deaths	84	8.3	78	8.1	2	.	2	.
Fetal Deaths	38	3.8	34	3.5	1	.	1	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	5,719	2,875	2,844	5,596	2,807	2,789	79	42	37	44	26	18	
Mortality Rate	8.1	8.3	7.8	8.1	8.4	7.9	7.5	8.1	6.9	4.6	5.8	3.6	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	80	14	10	7	32	40	131	190	328	778	1,517	2,592	-
White Male	43	4	5	3	22	29	83	124	193	465	822	1,014	-
White Female	31	10	4	4	9	11	39	51	120	290	677	1,536	-
Black Male	2	-	1	-	1	-	3	5	5	3	8	14	-
Black Female	1	-	-	-	-	-	2	3	5	8	4	14	-
Other Male	-	-	-	-	-	-	3	3	-	5	2	8	-
Other Female	-	-	-	-	-	-	1	2	4	4	3	2	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	5,719	806.7	5,596	812.3	79	752.8	63	33.2
Diseases of the Heart	2,138	301.6	2,095	295.5	29	4.1	1	.
Malignant Neoplasms	1,494	210.7	1,468	207.1	14	2.0	9	4.7
Cerebrovascular Diseases	380	53.6	373	52.6	6	0.8	1	.
Accidents and Adverse Effects	164	23.1	156	22.0	3	.	25	13.2
Chronic Obstructive Pulmonary Diseases and Allied Conditions	197	27.8	194	27.4	1	.	-	-
Pneumonia and Influenza	212	29.9	207	29.2	4	.	-	-
Diabetes Mellitus	139	19.6	134	18.9	4	.	-	-
Chronic Liver Disease and Cirrhosis	78	11.0	77	10.9	1	.	-	-
Homicide	37	5.2	31	4.4	5	.	7	3.7
Suicide	83	11.7	82	11.6	-	-	3	.
Atherosclerosis	52	7.3	52	7.3	-	-	-	-
AIDS	19	2.7	17	2.4	2	.	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Manistee County



POPULATION

As of July 1, 1989:	22,377
Rank Among Counties:	56
Per Square Mile:	41.2
Median Age:	36
Children Ages 1-19:	5,755

NATALITY

Total Live Births:	267
Teenage Mothers:	35
Low Weight Births:	23
First Births:	96
Median Age of Mother:	26

MORTALITY

Total Deaths:	264
Infant Deaths:	3
Neonatal Deaths:	2
Postneonatal Deaths:	1
Perinatal Deaths:	6
Fetal Deaths:	4
Maternal Deaths:	-

MARRIAGE

Marriages:	173
Marriage Rate:	15.5

DIVORCE

Divorces:	64
Divorce Rate:	5.7

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	267	11.9	256	11.6	1	.	8	30.4
Teenage Mothers	35	131.1	31	121.1	1	.	3	.
Low Weight	23	86.1	23	89.8	-	-	-	-
Under 1,500 Grams	5	.	5	.	-	-	-	-
< 38 Weeks Gestation	51	191.0	49	191.4	-	-	2	.
Prenatal Care Began in 1st Trimester	182	681.6	175	683.6	1	.	5	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	3	.	3	.	-	-	-	-
Neonatal Deaths	2	.	2	.	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	6	22.1	6	23.1	-	-	-	-
Fetal Deaths	4	.	4	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Deaths	264	150	114	256	145	111	4	3	1	4	2	2
Mortality Rate	11.8	13.6	10.0	11.6	13.3	9.9	.	.	.	.	.	.

	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	3	-	-	1	-	2	-	4	8	26	66	154	-
White Male	1	-	-	-	-	1	-	3	6	24	44	66	-
White Female	2	-	-	1	-	1	-	1	1	1	19	85	-
Black Male	-	-	-	-	-	-	-	-	-	-	1	2	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Male	-	-	-	-	-	-	-	-	1	-	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

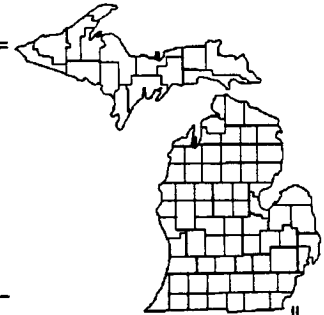
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	264	1,179.8	256	1,159.9	4	.	1	.
Diseases of the Heart	96	429.0	95	424.5	1	.	-	-
Malignant Neoplasms	57	254.7	56	250.3	-	-	-	-
Cerebrovascular Diseases	30	134.1	28	125.1	1	.	-	-
Accidents and Adverse Effects	6	26.8	6	26.8	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	9	40.2	8	35.8	-	-	-	-
Pneumonia and Influenza	5	.	4	.	1	.	-	-
Diabetes Mellitus	10	44.7	9	40.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	.	4	.	-	-	-	-
Homicide	1	.	1	.	-	-	-	-
Suicide	2	.	2	.	-	-	-	-
Atherosclerosis	5	.	5	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Marquette County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	70,807	Total Live Births:	994	Total Deaths:	503
Rank Among Counties:	25	Teenage Mothers:	87	Infant Deaths:	6
Per Square Mile:	38.9	Low Weight Births:	46	Neonatal Deaths:	4
Median Age:	30	First Births:	409	Postneonatal Deaths:	2
Children Ages 1-19:	19,247	Median Age of Mother:	26	Perinatal Deaths:	12
				Fetal Deaths:	8
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	614	Divorces:	347		
Marriage Rate:	17.3	Divorce Rate:	9.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	994	14.0	942	13.8	15	11.7	37	28.9
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	87	87.5	83	88.1	1	.	3	.
Low Weight	46	46.3	38	40.3	3	.	5	.
Under 1,500 Grams	9	9.1	5	.	1	.	3	.
< 38 Weeks Gestation	135	135.8	123	130.6	4	.	8	216.2
Prenatal Care Began in 1st Trimester	824	829.0	787	835.5	12	800.0	25	675.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	6	6.0	6	6.4	-	-	-	-
Neonatal Deaths	4	.	4	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	12	12.0	9	9.5	-	-	3	.
Fetal Deaths	8	8.0	5	.	-	-	3	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	503	271	232	499	268	231	2	2	-	2	1	1	
Mortality Rate	7.1	7.5	6.7	7.3	7.7	6.9	.	.	-	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	6	2	1	2	2	3	14	13	16	51	116	277	-
White Male	5	2	-	1	1	1	10	6	12	33	73	124	-
White Female	1	-	1	1	1	2	3	6	4	18	41	153	-
Black Male	-	-	-	-	-	-	1	1	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	503	710.4	499	731.2	2	.	7	36.4
Diseases of the Heart	163	230.2	161	227.4	1	.	-	-
Malignant Neoplasms	109	153.9	109	153.9	-	-	-	-
Cerebrovascular Diseases	42	59.3	42	59.3	-	-	-	-
Accidents and Adverse Effects	28	39.5	28	39.5	-	-	4	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	26.8	18	25.4	-	-	-	-
Pneumonia and Influenza	16	22.6	16	22.6	-	-	-	-
Diabetes Mellitus	9	12.7	9	12.7	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	.	5	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	13	18.4	13	18.4	-	-	-	-
Atherosclerosis	13	18.4	13	18.4	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Mason County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	26,556	Total Live Births:	339	Total Deaths:	307
Rank Among Counties:	50	Teenage Mothers:	46	Infant Deaths:	3
Per Square Mile:	53.7	Low Weight Births:	19	Neonatal Deaths:	1
Median Age:	35	First Births:	120	Postneonatal Deaths:	2
Children Ages 1-19:	7,307	Median Age of Mother:	26	Perinatal Deaths:	1
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	231	Divorces:	109		
Marriage Rate:	17.4	Divorce Rate:	8.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	339	12.8	326	12.5	1	.	12	40.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	46	135.7	43	131.9	1	.	2	.
Low Weight	19	56.0	19	56.3	-	-	-	-
Under 1,500 Grams	4	.	4	.	-	-	-	-
< 38 Weeks Gestation	42	123.9	40	122.7	1	.	1	.
Prenatal Care Began in 1st Trimester	244	719.8	237	727.0	-	-	7	583.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	3	.	3	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	1	.	1	.	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	307	158	149	303	155	148	-	-	-	4	3	1	
Mortality Rate	11.6	12.0	11.2	11.6	12.0	11.3	-	-	-	4	3	1	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	3	-	-	-	1	1	5	10	7	35	75	170	-
White Male	3	-	-	-	1	1	3	5	6	22	37	77	-
White Female	-	-	-	-	-	-	1	4	1	12	37	93	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	1	1	-	-	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	1	-	-	-

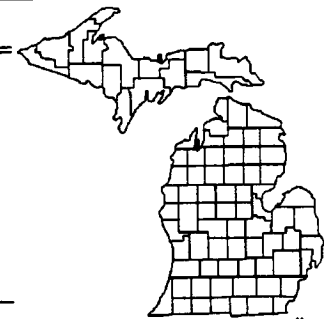
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	307	1,156.0	303	1,163.3	-	-	1	.
Diseases of the Heart	105	395.4	104	391.6	-	-	-	-
Malignant Neoplasms	92	346.4	91	342.7	-	-	-	-
Cerebrovascular Diseases	20	75.3	20	75.3	-	-	-	-
Accidents and Adverse Effects	9	33.9	9	33.9	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	9	33.9	9	33.9	-	-	-	-
Pneumonia and Influenza	7	26.4	7	26.4	-	-	-	-
Diabetes Mellitus	10	37.7	10	37.7	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	.	3	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	.	1	.	-	-	1	.
Atherosclerosis	6	22.6	6	22.6	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Mecosta County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	38,725	Total Live Births:	451	Total Deaths:	274
Rank Among Counties:	42	Teenage Mothers:	51	Infant Deaths:	1
Per Square Mile:	69.1	Low Weight Births:	21	Neonatal Deaths:	-
Median Age:	28	First Births:	161	Postneonatal Deaths:	1
Children Ages 1-19:	9,671	Median Age of Mother:	26	Perinatal Deaths:	3
				Fetal Deaths:	3
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	245	Divorces:	121		
Marriage Rate:	12.7	Divorce Rate:	6.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	451	11.6	432	11.5	10	12.2	8	19.0
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	51	113.1	48	111.1	1	.	2	.
Low Weight	21	46.6	17	39.4	2	.	2	.
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	42	93.1	41	94.9	1	.	-	-
Prenatal Care Began in 1st Trimester	289	640.8	280	648.1	5	.	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	3	.	3	.	-	-	-	-
Fetal Deaths	3	.	3	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	274	142	132	271	142	129	3	-	3	-	-	-	
Mortality Rate	7.1	7.2	7.0	7.2	7.4	7.1	.	-	3	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	2	1	-	3	3	6	9	10	25	56	158	-
White Male	1	1	1	-	2	2	4	7	6	16	30	72	-
White Female	-	1	-	-	1	1	2	2	4	9	26	83	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	3	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

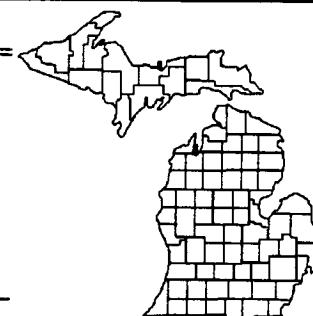
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	274	707.6	271	723.0	3	.	6	62.0
Diseases of the Heart	93	240.2	93	240.2	-	-	-	-
Malignant Neoplasms	60	154.9	59	152.4	1	.	-	-
Cerebrovascular Diseases	23	59.4	22	56.8	1	.	-	-
Accidents and Adverse Effects	13	33.6	13	33.6	-	-	3	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	7	18.1	7	18.1	-	-	-	-
Pneumonia and Influenza	8	20.7	7	18.1	1	.	-	-
Diabetes Mellitus	14	36.2	14	36.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	.	1	.	-	-	-	-
Homicide	3	.	3	.	-	-	-	-
Suicide	3	.	3	.	-	-	1	.
Atherosclerosis	3	.	3	.	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Menominee County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	25,938	Total Live Births:	206	Total Deaths:	173
Rank Among Counties:	52	Teenage Mothers:	21	Infant Deaths:	1
Per Square Mile:	24.8	Low Weight Births:	7	Neonatal Deaths:	-
Median Age:	33	First Births:	86	Postneonatal Deaths:	-
Children Ages 1-19:	7,732	Median Age of Mother:	25	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	231	Divorces:	99		
Marriage Rate:	17.8	Divorce Rate:	7.6		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	206	7.9	195	7.6	-	-	11	28.4
Teenage Mothers	21	101.9	19	97.4	-	-	2	.
Low Weight	7	34.0	5	.	-	-	2	.
Under 1,500 Grams	2	.	1	.	-	-	1	.
< 38 Weeks Gestation	20	97.1	19	97.4	-	-	1	.
Prenatal Care Began in 1st Trimester	159	771.8	154	789.7	-	-	5	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	173	101	72	170	100	70	-	-	-	3	1	2	
Mortality Rate	6.7	7.9	5.4	6.7	8.0	5.4	-	-	-	3	1	2	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	-	1	1	2	2	3	3	9	19	36	96	-
White Male	-	-	-	-	2	1	2	2	7	14	21	51	-
White Female	1	-	1	-	-	-	1	1	2	5	14	45	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	1	-	-
Other Female	-	-	-	1	-	1	-	-	-	-	-	-	-

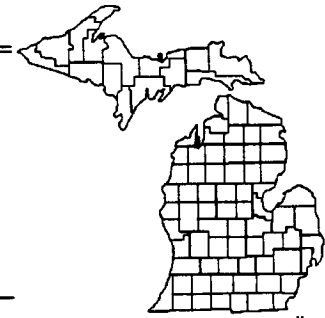
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	173	667.0	170	665.4	-	-	4	.
Diseases of the Heart	64	246.7	64	246.7	-	-	-	-
Malignant Neoplasms	28	107.9	28	107.9	-	-	1	.
Cerebrovascular Diseases	24	92.5	24	92.5	-	-	-	-
Accidents and Adverse Effects	6	23.1	4	.	-	-	1	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	3	.	2	.	-	-	-	-
Pneumonia and Influenza	6	23.1	6	23.1	-	-	-	-
Diabetes Mellitus	3	.	3	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	.	2	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	4	.	4	.	-	-	-	-
Atherosclerosis	9	34.7	9	34.7	-	-	1	.
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Midland County



POPULATION

As of July 1, 1989:	75,943
Rank Among Counties:	22
Per Square Mile:	144.6
Median Age:	32
Children Ages 1-19:	22,777

NATALITY

Total Live Births:	1,116
Teenage Mothers:	109
Low Weight Births:	51
First Births:	430
Median Age of Mother:	27

MORTALITY

Total Deaths:	454
Infant Deaths:	13
Neonatal Deaths:	10
Postneonatal Deaths:	3
Perinatal Deaths:	15
Fetal Deaths:	7
Maternal Deaths:	-

MARRIAGE

Marriages:	677
Marriage Rate:	17.8

DIVORCE

Divorces:	332
Divorce Rate:	8.7

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,116	14.7	1,091	14.8	10	12.7	14	11.6
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	109	97.7	105	96.2	1	.	2	.
Low Weight	51	45.7	50	45.8	-	-	1	.
Under 1,500 Grams	9	8.1	9	8.2	-	-	-	.
< 38 Weeks Gestation	134	120.1	129	118.2	1	.	4	.
Prenatal Care Began in 1st Trimester	916	820.8	897	822.2	7	700.0	11	785.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	13	11.6	13	11.9	-	-	-	-
Neonatal Deaths	10	9.0	10	9.2	-	-	-	-
Postneonatal Deaths	3	.	3	.	-	-	-	-
Perinatal Deaths	15	13.4	14	12.8	1	.	-	-
Fetal Deaths	7	6.2	6	5.5	1	.	-	-

Note: Rate is per 1,000 on live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	454	246	208	448	241	207	-	-	-	6	5	1	
Mortality Rate	6.0	6.5	5.4	6.1	6.6	5.6	-	-	-	5.0	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	13	-	1	-	5	4	6	10	25	60	107	223	-
White Male	7	-	1	-	3	2	2	5	19	33	68	101	-
White Female	6	-	-	-	1	2	4	5	5	25	39	120	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	1	-	-	-	-	1	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	454	597.8	448	605.8	-	-	6	26.3
Diseases of the Heart	152	200.2	150	197.5	-	-	-	-
Malignant Neoplasms	119	156.7	117	154.1	-	-	1	.
Cerebrovascular Diseases	31	40.8	30	39.5	-	-	-	-
Accidents and Adverse Effects	22	29.0	21	27.7	-	-	3	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	17	22.4	17	22.4	-	-	-	-
Pneumonia and Influenza	13	17.1	13	17.1	-	-	-	-
Diabetes Mellitus	12	15.8	12	15.8	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	.	4	.	-	-	-	-
Homicide	1	.	1	.	-	-	-	-
Suicide	2	.	2	.	-	-	1	.
Atherosclerosis	14	18.4	14	18.4	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Missaukee County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	11,835	Total Live Births:	174	Total Deaths:	111
Rank Among Counties:	70	Teenage Mothers:	21	Infant Deaths:	2
Per Square Mile:	21.0	Low Weight Births:	7	Neonatal Deaths:	-
Median Age:	32	First Births:	58	Postneonatal Deaths:	-
Children Ages 1-19:	3,786	Median Age of Mother:	25	Perinatal Deaths:	2
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	105	Divorces:	46		
Marriage Rate:	17.7	Divorce Rate:	7.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
Live Births	Number	Rate	Number	Rate	Number	Rate	Number	Rate
	174	14.7	170	14.5	-	-	3	-
	Total		White		Black		Other	
Teenage Mothers	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Low Weight	7	40.2	20	117.6	-	-	1	-
Under 1,500 Grams	1	-	6	35.3	-	-	1	-
< 38 Weeks Gestation	1	-	1	-	-	-	-	-
Prenatal Care Began in 1st Trimester	27	155.2	27	158.8	-	-	-	-
	140	804.6	138	811.8	-	-	1	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
Infant Deaths	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Neonatal Deaths	2	-	2	-	-	-	-	-
Postneonatal Deaths	-	-	2	-	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	2	-	2	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
Deaths	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Mortality Rate	9.4	11.1	7.7	9.4	11.2	7.8	-	-	-	-	-	-	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	2	3	-	-	1	-	4	4	6	14	23	54	-
White Female	-	1	-	-	-	-	2	2	1	10	15	30	-
Black Male	-	-	-	-	-	-	2	2	5	4	8	24	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
All Causes	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Diseases of the Heart	111	937.9	111	944.4	-	-	4	-
Malignant Neoplasms	37	312.6	37	312.6	-	-	-	-
Cerebrovascular Diseases	27	228.1	27	228.1	-	-	-	-
Accidents and Adverse Effects	11	92.9	11	92.9	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	9	76.0	9	76.0	-	-	3	-
Pneumonia and Influenza	2	-	2	-	-	-	-	-
Diabetes Mellitus	2	-	2	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	-	3	-	-	-	-	-
Homicide	1	-	1	-	-	-	-	-
Suicide	1	-	1	-	-	-	-	-
Atherosclerosis	1	-	1	-	-	-	1	-
AIDS	3	-	3	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Monroe County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	137,606	Total Live Births:	1,936	Total Deaths:	944
Rank Among Counties:	16	Teenage Mothers:	260	Infant Deaths:	13
Per Square Mile:	247.2	Low Weight Births:	111	Neonatal Deaths:	7
Median Age:	31	First Births:	755	Postneonatal Deaths:	6
Children Ages 1-19:	42,689	Median Age of Mother:	26	Perinatal Deaths:	10
				Fetal Deaths:	4
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	995	Divorces:	674		
Marriage Rate:	14.5	Divorce Rate:	9.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,936	14.1	1,876	14.0	44	18.6	14	18.2
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	260	134.3	250	133.3	8	181.8	1	.
Low Weight	111	57.3	107	57.0	2	.	2	.
Under 1,500 Grams	18	9.3	17	9.1	1	.	-	.
< 38 Weeks Gestation	313	161.7	303	161.5	8	181.8	2	.
Prenatal Care Began in 1st Trimester	1,612	832.6	1,576	840.1	23	522.7	13	928.6

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	13	6.7	13	6.9	-	-	-	-
Neonatal Deaths	7	3.6	7	3.7	-	-	-	-
Postneonatal Deaths	6	3.1	6	3.2	-	-	-	-
Perinatal Deaths	10	5.2	9	4.8	1	.	-	-
Fetal Deaths	4	.	3	.	1	.	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	944	482	462	927	475	452	14	5	9	3	2	1	
Mortality Rate	6.9	7.1	6.6	6.9	7.1	6.7	5.9	.	7.6	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	13	1	2	2	7	11	24	24	58	116	216	470	-
White Male	5	1	1	2	2	9	20	14	28	76	116	201	-
White Female	8	-	1	-	5	2	4	10	28	39	95	260	-
Black Male	-	-	-	-	-	-	-	-	1	-	1	3	-
Black Female	-	-	-	-	-	-	-	-	-	1	2	6	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	944	686.0	927	689.3	14	593.0	12	28.1
Diseases of the Heart	337	244.9	329	239.1	7	5.1	-	-
Malignant Neoplasms	233	169.3	230	167.1	3	.	1	.
Cerebrovascular Diseases	55	40.0	53	38.5	2	.	-	-
Accidents and Adverse Effects	44	32.0	44	32.0	-	-	8	18.7
Chronic Obstructive Pulmonary Diseases and Allied Conditions	47	34.2	46	33.4	-	-	-	-
Pneumonia and Influenza	24	17.4	24	17.4	-	-	-	-
Diabetes Mellitus	31	22.5	31	22.5	-	-	-	-
Chronic Liver Disease and Cirrhosis	11	8.0	11	8.0	-	-	-	-
Homicide	3	.	3	.	-	-	-	-
Suicide	16	11.6	16	11.6	-	-	-	-
Atherosclerosis	6	4.4	6	4.4	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Montcalm County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	53,682	Total Live Births:	840	Total Deaths:	435
Rank Among Counties:	33	Teenage Mothers:	151	Infant Deaths:	9
Per Square Mile:	75.3	Low Weight Births:	34	Neonatal Deaths:	4
Median Age:	32	First Births:	315	Postneonatal Deaths:	5
Children Ages 1-19:	15,958	Median Age of Mother:	24	Perinatal Deaths:	9
				Fetal Deaths:	6
				Maternal Deaths:	1
MARRIAGE		DIVORCE			
Marriages:	477	Divorces:	269		
Marriage Rate:	17.8	Divorce Rate:	10.0		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	840	15.6	825	15.5	2	.	13	33.2
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	151	179.8	149	180.6	-	-	2	.
Low Weight	34	40.5	34	41.2	-	-	-	-
Under 1,500 Grams	3	.	3	.	-	-	-	-
< 38 Weeks Gestation	99	117.9	97	117.6	-	-	2	.
Prenatal Care Began in 1st Trimester	604	719.0	593	718.8	2	.	9	692.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	9	10.7	9	10.9	-	-	-	-
Neonatal Deaths	4	.	4	.	-	-	-	-
Postneonatal Deaths	5	.	5	.	-	-	-	-
Perinatal Deaths	9	10.6	9	10.8	-	-	-	-
Fetal Deaths	6	7.1	6	7.2	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	435	228	207	433	227	206	1	-	1	1	1	-	
Mortality Rate	8.1	8.6	7.6	8.1	8.7	7.6	.	-	1	1	1	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	9	3	2	-	3	4	11	15	21	59	83	215	-
White Male	2	2	2	-	2	1	7	11	13	35	52	100	-
White Female	7	1	-	-	1	3	4	4	8	24	40	114	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	0	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Male	-	-	-	-	-	-	-	-	-	-	1	0	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	0	-

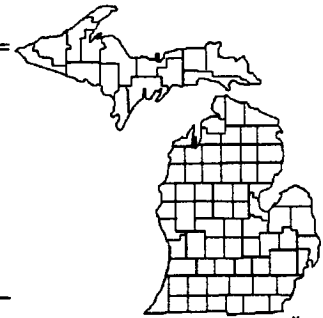
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	435	810.3	433	814.3	1	.	8	50.1
Diseases of the Heart	152	283.1	152	283.1	-	-	-	-
Malignant Neoplasms	101	188.1	99	184.4	1	.	-	-
Cerebrovascular Diseases	24	44.7	24	44.7	-	-	-	-
Accidents and Adverse Effects	32	59.6	32	59.6	-	-	6	37.6
Chronic Obstructive Pulmonary Diseases and Allied Conditions	21	39.1	21	39.1	-	-	-	-
Pneumonia and Influenza	14	26.1	14	26.1	-	-	-	-
Diabetes Mellitus	7	13.0	7	13.0	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	.	5	.	-	-	-	-
Homicide	1	.	1	.	-	-	-	-
Suicide	9	16.8	9	16.8	-	-	1	.
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Montmorency County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	8,754	Total Live Births:	87	Total Deaths:	136
Rank Among Counties:	78	Teenage Mothers:	13	Infant Deaths:	1
Per Square Mile:	15.9	Low Weight Births:	5	Neonatal Deaths:	1
Median Age:	39	First Births:	29	Postneonatal Deaths:	-
Children Ages 1-19:	2,296	Median Age of Mother:	26	Perinatal Deaths:	2
				Fetal Deaths:	1
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	54	Divorces:	40		
Marriage Rate:	12.3	Divorce Rate:	9.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	87	9.9	87	10.0	-	-	-	-
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	13	149.4	13	149.4	-	-	-	-
Low Weight	5	.	5	.	-	-	-	-
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	12	137.9	12	137.9	-	-	-	-
Prenatal Care Began in 1st Trimester	67	770.1	67	770.1	-	-	-	-

None: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	2	.	2	.	-	-	-	-
Fetal Deaths	1	.	1	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	136	72	64	134	72	62	1	-	1	1	-	1	
Mortality Rate	15.5	17.0	14.1	15.4	17.2	13.8	.	-	.	.	-	.	
	Age In Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	1	-	-	1	1	-	3	4	24	32	69	-
White Male	-	1	-	-	1	1	-	2	4	17	14	32	-
White Female	1	-	-	-	-	-	-	-	-	7	17	37	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	0	-
Black Female	-	-	-	-	-	-	-	1	-	-	-	0	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	0	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	0	-

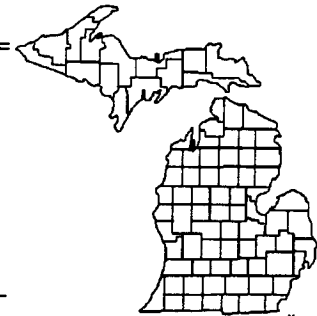
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	136	1,553.6	134	1,544.5	1	.	2	.
Diseases of the Heart	48	548.3	48	548.3	-	-	-	-
Malignant Neoplasms	45	514.1	44	502.6	-	-	-	-
Cerebrovascular Diseases	8	91.4	8	91.4	-	-	-	-
Accidents and Adverse Effects	6	68.5	6	68.5	-	-	1	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	4	.	4	.	-	-	-	-
Pneumonia and Influenza	2	.	2	.	-	-	-	-
Diabetes Mellitus	2	.	2	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	3	.	3	.	-	-	1	.
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Muskegon County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	162,576	Total Live Births:	2,728	Total Deaths:	1,433
Rank Among Counties:	12	Teenage Mothers:	421	Infant Deaths:	29
Per Square Mile:	320.6	Low Weight Births:	193	Neonatal Deaths:	15
Median Age:	32	First Births:	985	Postneonatal Deaths:	14
Children Ages 1-19:	48,412	Median Age of Mother:	25	Perinatal Deaths:	28
				Fetal Deaths:	15
				Maternal Deaths:	1
MARRIAGE		DIVORCE			
Marriages:	1,415	Divorces:	874		
Marriage Rate:	17.4	Divorce Rate:	10.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	2,728	16.8	2,110	15.2	590	26.8	23	12.5
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	421	154.3	242	114.7	176	298.3	3	.
Low Weight	193	70.7	111	52.6	82	139.0	-	-
Under 1,500 Grams	33	12.1	14	6.6	19	32.2	-	-
< 38 Weeks Gestation	455	166.8	315	149.3	138	233.9	1	.
Prenatal Care Began in 1st Trimester	1,888	692.1	1,560	739.3	310	525.4	14	608.7

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	29	10.6	16	7.6	13	22.0	-	-
Neonatal Deaths	15	5.5	7	3.3	8	13.6	-	-
Postneonatal Deaths	14	5.1	9	4.3	5	.	-	-
Perinatal Deaths	28	10.2	17	8.0	11	18.5	-	-
Fetal Deaths	15	5.5	11	5.2	4	.	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,433	716	717	1,250	620	630	172	90	82	11	6	5	
Mortality Rate	8.8	9.2	8.5	9.0	9.3	8.7	7.8	8.7	7.0	6.0	6.9	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	29	8	2	4	11	15	22	50	92	177	321	702	-
White Male	10	4	-	2	6	9	11	26	44	86	157	265	-
White Female	6	-	1	1	2	2	6	14	29	67	125	377	-
Black Male	6	-	-	1	2	2	5	6	8	12	22	26	-
Black Female	7	4	1	-	1	2	-	4	5	11	15	32	-
Other Male	-	-	-	-	-	-	-	-	1	-	1	2	-
Other Female	-	-	-	-	-	-	-	-	3	1	1	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,433	881.4	1,250	901.0	172	781.4	25	51.8
Diseases of the Heart	507	311.9	466	286.6	37	22.8	-	-
Malignant Neoplasms	315	193.8	271	166.7	40	24.6	2	.
Cerebrovascular Diseases	115	70.7	104	64.0	11	6.8	-	-
Accidents and Adverse Effects	83	51.1	70	43.1	13	8.0	13	26.9
Chronic Obstructive Pulmonary Diseases and Allied Conditions	51	31.4	46	28.3	5	.	-	-
Pneumonia and Influenza	52	32.0	45	27.7	6	3.7	-	-
Diabetes Mellitus	59	36.3	50	30.8	9	5.5	-	-
Chronic Liver Disease and Cirrhosis	13	8.0	11	6.8	2	.	-	-
Homicide	15	9.2	7	4.3	8	4.9	2	.
Suicide	12	7.4	11	6.8	1	.	1	.
Atherosclerosis	14	8.6	11	6.8	2	.	-	-
AIDS	4	.	4	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Newaygo County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	39,900	Total Live Births:	630	Total Deaths:	335
Rank Among Counties:	39	Teenage Mothers:	98	Infant Deaths:	8
Per Square Mile:	47.1	Low Weight Births:	27	Neonatal Deaths:	4
Median Age:	33	First Births:	229	Postneonatal Deaths:	4
Children Ages 1-19:	12,228	Median Age of Mother:	25	Perinatal Deaths:	8
				Fetal Deaths:	4
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	353	Divorces:	210		
Marriage Rate:	17.7	Divorce Rate:	10.5		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	630	15.8	615	15.8	6	8.4	9	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	98	155.6	97	157.7	-	-	1	.
Low Weight	27	42.9	26	42.3	1	.	-	-
Under 1,500 Grams	4	.	4	.	-	-	-	-
< 38 Weeks Gestation	66	104.8	62	100.8	2	.	2	.
Prenatal Care Began in 1st Trimester	414	657.1	404	656.9	3	.	7	777.8

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	8	12.7	7	11.4	-	-	1	.
Neonatal Deaths	4	.	3	.	-	-	1	.
Postneonatal Deaths	4	.	4	.	-	-	-	-
Perinatal Deaths	8	12.6	7	11.3	-	-	1	.
Fetal Deaths	4	.	4	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	335	180	155	321	174	147	8	3	5	6	3	3	
Mortality Rate	8.4	9.2	7.7	8.3	9.1	7.4	11.2	.	.	21.4	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	8	1	3	1	3	3	5	12	11	42	80	166	-
White Male	5	-	2	1	1	3	4	9	3	31	47	68	-
White Female	2	1	1	-	1	-	1	3	7	11	30	90	-
Black Male	-	-	-	-	-	-	-	-	-	-	2	1	-
Black Female	-	-	-	-	-	-	-	-	-	-	1	4	-
Other Male	1	-	-	-	-	-	-	-	-	-	-	2	-
Other Female	-	-	-	-	1	-	-	-	-	-	-	-	-

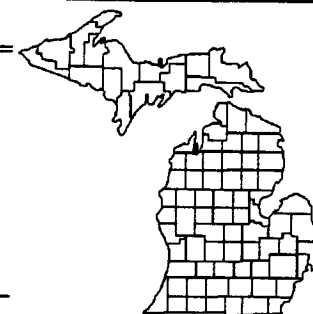
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	335	839.6	321	825.0	8	1,122.0	8	65.4
Diseases of the Heart	132	330.8	127	318.3	3	.	-	-
Malignant Neoplasms	69	172.9	68	170.4	1	.	1	.
Cerebrovascular Diseases	18	45.1	17	42.6	-	-	-	-
Accidents and Adverse Effects	23	57.6	22	55.1	1	.	6	49.1
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	47.6	18	45.1	1	.	-	-
Pneumonia and Influenza	11	27.6	11	27.6	-	-	-	-
Diabetes Mellitus	9	22.6	9	22.6	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	.	2	.	-	-	-	-
Homicide	1	.	-	-	-	-	1	.
Suicide	2	.	2	.	-	-	-	-
Atherosclerosis	2	.	2	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Oakland County



POPULATION

As of July 1, 1989:	1,057,402
Rank Among Counties:	2
Per Square Mile:	1,208.6
Median Age:	34
Children Ages 1-19:	280,451

NATALITY

Total Live Births:	16,414
Teenage Mothers:	1,162
Low Weight Births:	976
First Births:	7,047
Median Age of Mother:	28

MORTALITY

Total Deaths:	7,873
Infant Deaths:	142
Neonatal Deaths:	97
Postneonatal Deaths:	45
Perinatal Deaths:	182
Fetal Deaths:	90
Maternal Deaths:	1

MARRIAGE

Marriages:	9,572
Marriage Rate:	18.1

DIVORCE

Divorces:	4,833
Divorce Rate:	9.1

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	16,414	15.5	14,493	14.9	1,426	23.0	358	17.4
Teenage Mothers	1,162	70.8	826	57.0	315	220.9	15	41.9
Low Weight	976	59.5	765	52.8	179	125.5	24	67.0
Under 1,500 Grams	180	11.0	132	9.1	42	29.5	4	•
< 38 Weeks Gestation	2,415	147.1	1,994	137.6	332	232.8	60	167.6
Prenatal Care Began in 1st Trimester	14,155	862.4	12,751	879.8	993	696.4	297	829.6

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	142	8.7	103	7.1	34	23.8	5	•
Neonatal Deaths	97	5.9	69	4.8	26	18.2	2	•
Postneonatal Deaths	45	2.7	34	2.3	8	5.6	3	•
Perinatal Deaths	182	11.0	126	8.7	42	29.1	5	•
Fetal Deaths	90	5.5	61	4.2	17	11.8	3	•

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	7,873	3,906	3,967	7,345	3,608	3,737	444	251	193	84	47	37	
Mortality Rate	7.4	7.5	7.3	7.5	7.6	7.5	7.2	8.3	6.0	4.1	4.5	3.6	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	56	4	6	9	31	30	122	274	457	951	1,783	3,918	1
White Female	46	9	6	6	10	11	48	142	248	506	928	1,526	-
Black Male	17	-	1	1	7	7	22	93	149	370	746	2,239	-
Black Female	17	-	2	-	1	2	7	20	36	32	49	59	-
Other Male	2	1	-	-	-	-	1	3	5	11	42	68	1
Other Female	3	1	-	-	1	-	-	3	2	6	7	8	-

Note: Mortality rate is per 1,000 population in specified group.

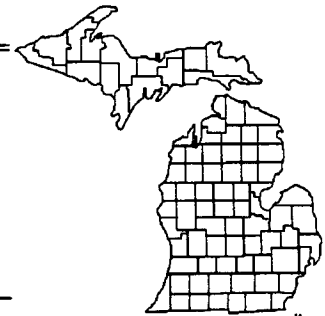
LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	7,873	744.6	7,345	753.5	444	715.2	97	34.6
Diseases of the Heart	2,826	267.3	2,658	251.4	136	12.9	2	•
Malignant Neoplasms	1,966	185.9	1,847	174.7	104	9.8	9	3.2
Cerebrovascular Diseases	592	56.0	559	52.9	24	2.3	1	•
Accidents and Adverse Effects	251	23.7	226	21.4	20	1.9	37	13.2
Chronic Obstructive Pulmonary Diseases and Allied Conditions	276	26.1	261	24.7	11	1.0	1	•
Pneumonia and Influenza	225	21.3	216	20.4	8	0.8	1	•
Diabetes Mellitus	197	18.6	183	17.3	12	1.1	1	•
Chronic Liver Disease and Cirrhosis	113	10.7	103	9.7	8	0.8	-	-
Homicide	57	5.4	28	2.6	29	2.7	7	2.5
Suicide	118	11.2	112	10.6	5	•	11	3.9
Atherosclerosis	65	6.1	62	5.9	3	•	-	-
AIDS	40	3.8	32	3.0	8	0.8	-	-

Note: Rate is per 100,000 population in specified group.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1989 Profile of Oceana County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	23,593	Total Live Births:	346	Total Deaths:	214
Rank Among Counties:	54	Teenage Mothers:	45	Infant Deaths:	2
Per Square Mile:	43.6	Low Weight Births:	19	Neonatal Deaths:	1
Median Age:	34	First Births:	119	Postneonatal Deaths:	1
Children Ages 1-19:	7,190	Median Age of Mother:	25	Perinatal Deaths:	3
				Fetal Deaths:	2
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	191	Divorces:	83		
Marriage Rate:	16.2	Divorce Rate:	7.0		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	346	14.7	338	14.5	-	-	8	35.4
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	45	130.1	42	124.3	-	-	3	*
Low Weight	19	54.9	19	56.2	-	-	-	-
Under 1,500 Grams	2	.	2	.	-	-	-	-
< 38 Weeks Gestation	45	130.1	44	130.2	-	-	1	*
Prenatal Care Began in 1st Trimester	232	670.5	229	677.5	-	-	3	*

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	.	2	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	3	.	3	.	-	-	-	-
Fetal Deaths	2	.	2	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	214	104	110	212	104	108	1	-	1	1	-	1	
Mortality Rate	9.1	9.2	8.9	9.1	9.3	8.9	.	-	.	.	-	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	-	-	-	3	-	7	4	17	28	42	111	-
White Male	2	-	-	-	2	-	5	4	8	12	24	47	-
White Female	-	-	-	-	1	-	2	-	9	16	17	63	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

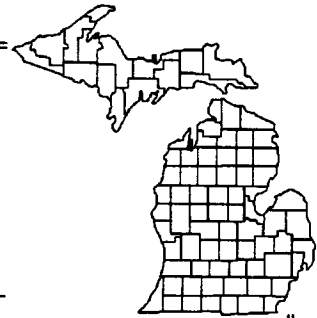
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	214	907.0	212	908.7	1	.	3	.
Diseases of the Heart	87	368.8	87	368.8	-	-	-	-
Malignant Neoplasms	46	195.0	46	195.0	-	-	-	-
Cerebrovascular Diseases	17	72.1	17	72.1	-	-	-	-
Accidents and Adverse Effects	10	42.4	10	42.4	-	-	2	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	8	33.9	8	33.9	-	-	-	-
Pneumonia and Influenza	10	42.4	9	38.1	1	.	-	-
Diabetes Mellitus	5	.	5	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	.	2	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	.	2	.	-	-	1	.
Atherosclerosis	4	.	3	.	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Ogemaw County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	18,897	Total Live Births:	268	Total Deaths:	258
Rank Among Counties:	61	Teenage Mothers:	44	Infant Deaths:	1
Per Square Mile:	33.2	Low Weight Births:	14	Neonatal Deaths:	-
Median Age:	34	First Births:	97	Postneonatal Deaths:	1
Children Ages 1-19:	5,484	Median Age of Mother:	25	Perinatal Deaths:	3
				Fetal Deaths:	3
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	168	Divorces:	64		
Marriage Rate:	17.8	Divorce Rate:	6.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	268	14.2	259	13.8	1	.	8	58.0
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	44	164.2	43	166.0	-	-	1	.
Low Weight	14	52.2	13	50.2	-	-	1	.
Under 1,500 Grams	1	.	1	.	-	-	-	-
< 38 Weeks Gestation	40	149.3	38	146.7	-	-	2	.
Prenatal Care Began in 1st Trimester	222	828.4	215	830.1	1	.	6	750.0

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	1	.	1	.	-	-	-	-
Perinatal Deaths	3	.	3	.	-	-	-	-
Fetal Deaths	3	.	3	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	258	146	112	256	145	111	-	-	-	2	1	1	
Mortality Rate	13.7	15.7	11.7	13.6	15.7	11.6	-	-	-	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	-	-	1	-	1	5	5	13	29	76	127	-
White Male	1	-	-	1	-	1	3	5	10	17	45	62	-
White Female	-	-	-	-	-	-	2	-	3	12	30	64	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	1	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

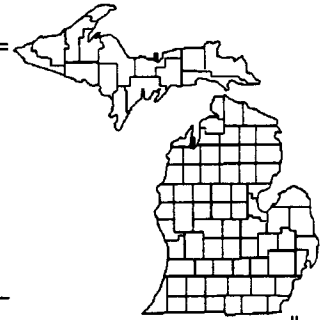
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	258	1,365.3	256	1,364.8	-	-	1	.
Diseases of the Heart	87	460.4	87	460.4	-	-	-	-
Malignant Neoplasms	60	317.5	59	312.2	-	-	-	-
Cerebrovascular Diseases	24	127.0	24	127.0	-	-	-	-
Accidents and Adverse Effects	8	42.3	8	42.3	-	-	1	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	100.5	19	100.5	-	-	-	-
Pneumonia and Influenza	7	37.0	7	37.0	-	-	-	-
Diabetes Mellitus	5	.	5	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	.	3	.	-	-	-	-
Homicide	1	.	-	-	-	-	-	-
Suicide	4	.	4	.	-	-	-	-
Atherosclerosis	7	37.0	7	37.0	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Ontonagon County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	9,069	Total Live Births:	96	Total Deaths:	116
Rank Among Counties:	76	Teenage Mothers:	12	Infant Deaths:	1
Per Square Mile:	6.9	Low Weight Births:	10	Neonatal Deaths:	1
Median Age:	39	First Births:	35	Postneonatal Deaths:	-
Children Ages 1-19:	2,393	Median Age of Mother:	24	Perinatal Deaths:	1
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	75	Divorces:	29		
Marriage Rate:	16.5	Divorce Rate:	6.4		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	96	10.6	94	10.5	-	-	2	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	12	125.0	12	127.7	-	-	-	-
Low Weight	10	104.2	10	106.4	-	-	-	-
Under 1,500 Grams	1	.	1	.	-	-	-	-
< 38 Weeks Gestation	13	135.4	13	138.3	-	-	-	-
Prenatal Care Began in 1st Trimester	67	697.9	65	691.5	-	-	2	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	1	.	1	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	1	.	1	.	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	116	62	54	116	62	54	-	-	-	-	-	-	
Mortality Rate	12.8	13.7	11.8	12.9	13.9	12.0	-	-	-	-	-	-	
	Age In Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	1	-	-	-	-	-	4	-	6	17	22	66	-
White Male	1	-	-	-	-	-	3	-	4	10	11	33	-
White Female	-	-	-	-	-	-	1	-	2	7	11	33	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	116	1,279.1	116	1,293.2	-	-	-	-
Diseases of the Heart	52	573.4	52	573.4	-	-	-	-
Malignant Neoplasms	22	242.6	22	242.6	-	-	-	-
Cerebrovascular Diseases	12	132.3	12	132.3	-	-	-	-
Accidents and Adverse Effects	3	.	3	.	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	2	.	2	.	-	-	-	-
Pneumonia and Influenza	2	.	2	.	-	-	-	-
Diabetes Mellitus	5	.	5	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	-	-	-	-	-	-	-	-
Atherosclerosis	6	66.2	6	66.2	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Osceola County



POPULATION

As of July 1, 1989:	21,282
Rank Among Counties:	59
Per Square Mile:	37.4
Median Age:	34
Children Ages 1-19:	6,519

NATALITY

Total Live Births:	303
Teenage Mothers:	40
Low Weight Births:	19
First Births:	110
Median Age of Mother:	25

MORTALITY

Total Deaths:	167
Infant Deaths:	6
Neonatal Deaths:	3
Postneonatal Deaths:	3
Perinatal Deaths:	5
Fetal Deaths:	4
Maternal Deaths:	-

MARRIAGE

Marriages:	180
Marriage Rate:	16.9

DIVORCE

Divorces:	100
Divorce Rate:	9.4

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	303	14.2	300	14.2	-	-	3	-
Teenage Mothers	40	132.0	40	133.3	-	-	-	-
Low Weight	19	62.7	19	63.3	-	-	-	-
Under 1,500 Grams	2	-	2	-	-	-	-	-
< 38 Weeks Gestation	26	85.8	26	86.7	-	-	-	-
Prenatal Care Began in 1st Trimester	206	679.9	204	680.0	-	-	2	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	6	19.8	6	20.0	-	-	-	-
Neonatal Deaths	3	-	3	-	-	-	-	-
Postneonatal Deaths	3	-	3	-	-	-	-	-
Perinatal Deaths	5	-	5	-	-	-	-	-
Fetal Deaths	4	-	4	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	167	85	82	166	85	81	-	-	-	1	-	1	
Mortality Rate	7.8	7.9	7.8	7.9	8.0	7.7	-	-	-	-	-	-	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	6	-	-	-	3	3	1	2	6	10	50	86	-
White Female	2	-	-	-	1	2	-	-	2	6	31	41	-
Black Male	4	-	-	-	2	1	1	2	4	4	19	44	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	1	-

Note: Mortality rate is per 1,000 population in specified group.

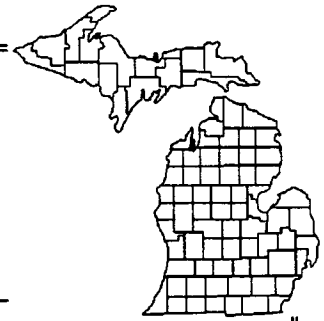
LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	167	784.7	166	787.6	-	-	3	-
Diseases of the Heart	57	267.8	56	263.1	-	-	-	-
Malignant Neoplasms	41	192.7	41	192.7	-	-	1	-
Cerebrovascular Diseases	11	51.7	11	51.7	-	-	-	-
Accidents and Adverse Effects	12	56.4	12	56.4	-	-	2	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	8	37.6	8	37.6	-	-	-	-
Pneumonia and Influenza	9	42.3	9	42.3	-	-	-	-
Diabetes Mellitus	2	-	2	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	-	1	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	1	-	1	-	-	-	-	-
Atherosclerosis	5	-	5	-	-	-	-	-
AIDS	1	-	1	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1989 Profile of Oscoda County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	7,452	Total Live Births:	105	Total Deaths:	96
Rank Among Counties:	81	Teenage Mothers:	10	Infant Deaths:	3
Per Square Mile:	13.1	Low Weight Births:	8	Neonatal Deaths:	1
Median Age:	36	First Births:	36	Postneonatal Deaths:	2
Children Ages 1-19:	2,003	Median Age of Mother:	25	Perinatal Deaths:	2
				Fetal Deaths:	1
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	58	Divorces:	24		
Marriage Rate:	15.6	Divorce Rate:	6.4		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	105	14.1	104	14.0	-	-	1	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	10	95.2	10	96.2	-	-	-	-
Low Weight	8	76.2	8	76.9	-	-	-	-
Under 1,500 Grams	1	.	1	.	-	-	-	-
< 38 Weeks Gestation	18	171.4	18	173.1	-	-	-	-
Prenatal Care Began in 1st Trimester	69	657.1	68	653.8	-	-	1	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	3	.	3	.	-	-	-	-
Neonatal Deaths	1	.	1	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	2	.	2	.	-	-	-	-
Fetal Deaths	1	.	1	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	96	57	39	95	57	38	-	-	-	1	-	1	
Mortality Rate	12.9	16.7	9.7	12.8	16.8	9.5	-	-	-	.	-	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	3	-	-	-	-	-	-	2	5	13	21	52	-
White Male	1	-	-	-	-	-	-	2	1	11	12	30	-
White Female	2	-	-	-	-	-	-	-	4	2	8	22	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	-	-

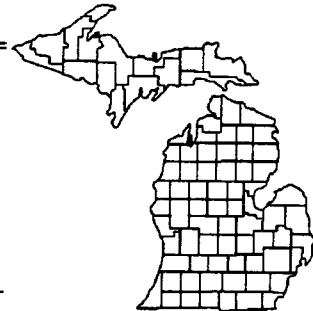
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	96	1,288.1	95	1,282.1	-	-	-	-
Diseases of the Heart	35	469.7	35	469.7	-	-	-	-
Malignant Neoplasms	18	241.5	18	241.5	-	-	-	-
Cerebrovascular Diseases	6	80.5	6	80.5	-	-	-	-
Accidents and Adverse Effects	3	.	3	.	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	.	5	.	-	-	-	-
Pneumonia and Influenza	6	80.5	6	80.5	-	-	-	-
Diabetes Mellitus	2	.	1	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	.	1	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	-	-	-	-	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Otsego County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	17,223	Total Live Births:	242	Total Deaths:	173
Rank Among Counties:	64	Teenage Mothers:	32	Infant Deaths:	6
Per Square Mile:	33.4	Low Weight Births:	4	Neonatal Deaths:	4
Median Age:	37	First Births:	90	Postneonatal Deaths:	2
Children Ages 1-19:	5,287	Median Age of Mother:	25	Perinatal Deaths:	4
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	165	Divorces:	101		
Marriage Rate:	19.2	Divorce Rate:	11.7		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	242	14.1	237	13.8	-	-	4	-
Teenage Mothers	32	132.2	32	135.0	-	-	-	-
Low Weight	4	.	4	.	-	-	-	-
Under 1,500 Grams	1	.	1	.	-	-	-	-
< 38 Weeks Gestation	36	148.8	35	147.7	-	-	1	.
Prenatal Care Began in 1st Trimester	202	834.7	197	831.2	-	-	4	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	6	24.8	6	25.3	-	-	-	-
Neonatal Deaths	4	.	4	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	4	.	4	.	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	173	94	79	170	92	78	-	-	-	3	2	1	
Mortality Rate	10.0	10.8	9.2	9.9	10.7	9.2	-	-	-	-	-	-	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	6	-	1	-	-	1	2	7	6	22	42	86	-
White Female	2	-	1	-	-	1	1	4	3	16	19	45	-
Black Male	4	-	-	-	-	-	-	2	3	6	22	40	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	1	-	-	1	-	-

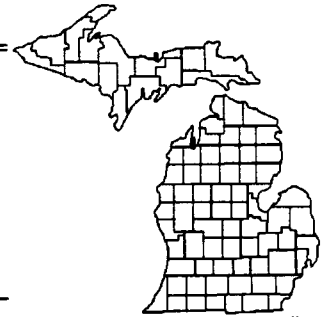
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	173	1,004.5	170	993.3	-	-	1	.
Diseases of the Heart	64	371.6	63	365.8	-	-	-	-
Malignant Neoplasms	42	243.9	41	238.1	-	-	-	-
Cerebrovascular Diseases	10	58.1	9	52.3	-	-	-	-
Accidents and Adverse Effects	4	.	4	.	-	-	-	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	9	52.3	9	52.3	-	-	-	-
Pneumonia and Influenza	6	34.8	6	34.8	-	-	-	-
Diabetes Mellitus	4	.	4	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	2	.	2	.	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	.	2	.	-	-	-	-
Atherosclerosis	2	.	2	.	-	-	-	-
AIDS	1	.	1	.	-	-	1	.

Note: Rate is per 100,000 population in specified group.

1989 Profile of Ottawa County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	183,637	Total Live Births:	3,103	Total Deaths:	1,013
Rank Among Counties:	10	Teenage Mothers:	247	Infant Deaths:	27
Per Square Mile:	323.8	Low Weight Births:	150	Neonatal Deaths:	17
Median Age:	30	First Births:	1,172	Postneonatal Deaths:	10
Children Ages 1-19:	56,074	Median Age of Mother:	27	Perinatal Deaths:	21
				Fetal Deaths:	8
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	1,487	Divorces:	654		
Marriage Rate:	16.2	Divorce Rate:	7.1		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	3,103	16.9	3,034	16.8	16	18.8	50	26.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	247	79.6	234	77.1	5	.	8	160.0
Low Weight	150	48.3	146	48.1	-	-	4	.
Under 1,500 Grams	29	9.3	28	9.2	-	-	1	.
< 38 Weeks Gestation	398	128.3	386	127.2	2	.	10	200.0
Prenatal Care Began in 1st Trimester	2,627	846.6	2,580	850.4	8	500.0	36	720.0

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	27	8.7	26	8.6	1	.	-	-
Neonatal Deaths	17	5.5	16	5.3	1	.	-	-
Postneonatal Deaths	10	73.5	10	3.3	-	-	-	-
Perinatal Deaths	21	6.8	19	6.2	1	.	1	.
Fetal Deaths	8	2.6	7	2.3	-	-	1	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,013	489	524	1,002	481	521	4	3	1	7	5	2	
Mortality Rate	5.5	5.4	5.7	5.5	5.4	5.7	.	.	.	3.6	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	27	2	1	5	9	11	28	22	52	86	216	554	-
White Male	19	-	-	1	7	10	17	13	29	52	116	217	-
White Female	7	2	1	3	2	1	10	7	23	33	98	334	-
Black Male	1	-	-	-	-	-	-	1	-	-	-	1	-
Black Female	-	-	-	-	-	-	-	-	-	-	1	-	-
Other Male	-	-	-	1	-	-	1	-	-	1	1	1	-
Other Female	-	-	-	-	-	-	-	1	-	-	-	1	-

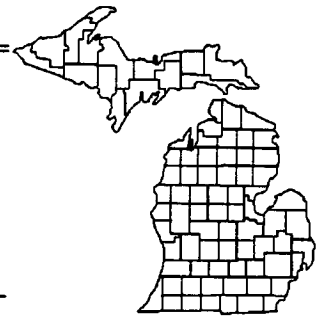
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,013	551.6	1,002	554.0	4	.	17	30.3
Diseases of the Heart	333	181.3	332	180.8	-	-	-	-
Malignant Neoplasms	240	130.7	238	129.6	1	.	6	10.7
Cerebrovascular Diseases	80	43.6	79	43.0	-	-	-	-
Accidents and Adverse Effects	60	32.7	57	31.0	-	-	8	14.3
Chronic Obstructive Pulmonary Diseases and Allied Conditions	37	20.1	37	20.1	-	-	-	-
Pneumonia and Influenza	46	25.0	46	25.0	-	-	-	-
Diabetes Mellitus	17	9.3	17	9.3	-	-	-	-
Chronic Liver Disease and Cirrhosis	4	.	4	.	-	-	-	-
Homicide	1	.	1	.	-	-	1	.
Suicide	11	6.0	11	6.0	-	-	-	-
Atherosclerosis	17	9.3	17	9.3	-	-	-	-
AIDS	3	.	2	.	1	.	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Presque Isle County



POPULATION

As of July 1, 1989:	14,244
Rank Among Counties:	67
Per Square Mile:	21.7
Median Age:	36
Children Ages 1-19:	3,928

NATALITY

Total Live Births:	169
Teenage Mothers:	13
Low Weight Births:	9
First Births:	58
Median Age of Mother:	27

MORTALITY

Total Deaths:	144
Infant Deaths:	-
Neonatal Deaths:	-
Postneonatal Deaths:	-
Perinatal Deaths:	1
Fetal Deaths:	1
Maternal Deaths:	-

MARRIAGE

Marriages:	90
Marriage Rate:	12.6

DIVORCE

Divorces:	38
Divorce Rate:	5.3

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	169	11.9	168	11.9	-	-	1	-
Teenage Mothers	13	76.9	13	77.4	-	-	-	-
Low Weight	9	53.3	9	53.6	-	-	-	-
Under 1,500 Grams	1	-	1	-	-	-	-	-
< 38 Weeks Gestation	17	100.6	16	95.2	-	-	1	-
Prenatal Care Began in 1st Trimester	149	881.7	148	881.0	-	-	1	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	-	-	-	-	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	1	-	1	-	-	-	-	-
Fetal Deaths	1	-	1	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	144	80	64	144	80	64	-	-	-	-	-	-	
Mortality Rate	10.1	11.2	9.0	10.2	11.3	9.1	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	-	1	-	-	-	-	4	1	2	24	42	70	-
White Male	-	1	-	-	-	-	2	1	1	12	29	34	-
White Female	-	-	-	-	-	-	2	-	1	12	13	36	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

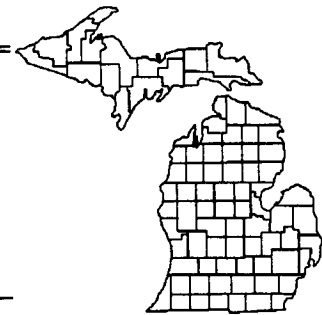
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

All Causes	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Diseases of the Heart	53	372.1	53	372.1	-	-	1	-
Malignant Neoplasms	36	252.7	36	252.7	-	-	-	-
Cerebrovascular Diseases	9	63.2	9	63.2	-	-	-	-
Accidents and Adverse Effects	7	49.1	7	49.1	-	-	1	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	3	-	3	-	-	-	-	-
Pneumonia and Influenza	5	-	5	-	-	-	-	-
Diabetes Mellitus	4	-	4	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	-	2	-	-	-	-	-
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Roscommon County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	20,925	Total Live Births:	236	Total Deaths:	256
Rank Among Counties:	60	Teenage Mothers:	32	Infant Deaths:	2
Per Square Mile:	39.6	Low Weight Births:	18	Neonatal Deaths:	2
Median Age:	44	First Births:	97	Postneonatal Deaths:	-
Children Ages 1-19:	4,441	Median Age of Mother:	25	Perinatal Deaths:	2
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	196	Divorces:	96		
Marriage Rate:	18.7	Divorce Rate:	9.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	236	11.3	231	11.1	-	-	3	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	32	135.6	32	138.5	-	-	-	-
Low Weight	18	76.3	17	73.6	-	-	1	.
Under 1,500 Grams	5	.	4	.	-	-	1	.
< 38 Weeks Gestation	37	156.8	36	155.8	-	-	1	.
Prenatal Care Began in 1st Trimester	186	788.1	183	792.2	-	-	3	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	2	.	2	.	-	-	-	-
Neonatal Deaths	2	.	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	2	.	2	.	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	256	141	115	254	140	114	-	-	-	2	1	1	
Mortality Rate	12.2	13.4	11.0	12.2	13.3	11.0	-	-	-	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	2	1	1	-	1	-	3	4	8	39	70	127	-
White Male	-	-	-	-	1	-	2	1	4	28	40	66	-
White Female	2	1	-	-	-	-	1	3	3	13	30	61	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	1	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	1	-	-	-	-	-

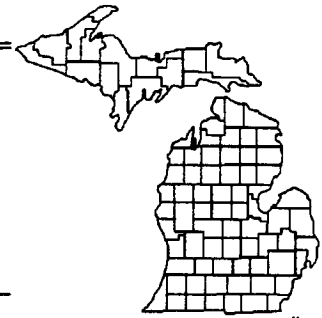
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	256	1,223.4	254	1,219.6	-	-	3	.
Diseases of the Heart	98	468.3	97	463.6	-	-	-	-
Malignant Neoplasms	69	329.7	69	329.7	-	-	-	-
Cerebrovascular Diseases	14	66.9	14	66.9	-	-	-	-
Accidents and Adverse Effects	9	43.0	8	38.2	-	-	3	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	14	66.9	14	66.9	-	-	-	-
Pneumonia and Influenza	2	.	2	.	-	-	-	-
Diabetes Mellitus	4	.	4	.	-	-	-	-
Chronic Liver Disease and Cirrhosis	6	28.7	6	28.7	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	.	2	.	-	-	-	-
Atherosclerosis	3	14.3	3	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Saginaw County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	214,166	Total Live Births:	3,560	Total Deaths:	1,895
Rank Among Counties:	9	Teenage Mothers:	610	Infant Deaths:	47
Per Square Mile:	262.7	Low Weight Births:	328	Neonatal Deaths:	30
Median Age:	36	First Births:	1,436	Postneonatal Deaths:	17
Children Ages 1-19:	64,591	Median Age of Mother:	25	Perinatal Deaths:	51
				Fetal Deaths:	27
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	1,623	Divorces:	857		
Marriage Rate:	15.2	Divorce Rate:	8.0		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	3,560	16.6	2,553	14.7	961	25.2	35	17.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	610	171.3	301	117.9	299	311.1	8	228.6
Low Weight	328	92.1	166	65.0	159	165.5	2	-
Under 1,500 Grams	69	19.4	24	9.4	45	46.8	-	-
< 38 Weeks Gestation	591	166.0	347	135.9	239	248.7	5	-
Prenatal Care Began in 1st Trimester	2,702	759.0	2,053	804.2	622	647.2	18	514.3

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	47	13.2	18	7.1	29	30.2	-	-
Neonatal Deaths	30	8.4	11	4.3	19	19.8	-	-
Postneonatal Deaths	17	4.8	7	2.7	10	10.4	-	-
Perinatal Deaths	51	14.2	25	9.7	26	26.7	-	-
Fetal Deaths	27	7.5	15	5.8	12	12.3	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,895	1,004	891	1,595	835	760	292	163	129	8	6	2	
Mortality Rate	8.8	9.8	8.0	9.2	9.9	8.4	7.7	9.2	6.3	3.9	6.4	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	47	9	2	7	13	13	51	59	121	228	432	913	-
White Male	8	4	1	3	9	9	26	16	50	108	210	391	-
White Female	10	3	1	3	1	2	6	12	48	68	157	449	-
Black Male	16	2	-	-	3	2	12	16	14	32	31	35	-
Black Female	13	-	-	1	-	-	7	12	9	18	33	36	-
Other Male	-	-	-	-	-	-	-	3	-	1	-	1	-
Other Female	-	-	-	-	-	-	-	-	-	1	1	-	-

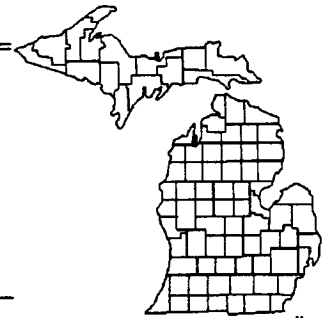
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,895	884.8	1,595	916.7	292	765.8	31	48.0
Diseases of the Heart	697	325.4	615	287.2	80	37.4	1	-
Malignant Neoplasms	408	190.5	340	158.8	66	30.8	2	-
Cerebrovascular Diseases	113	52.8	94	43.9	18	8.4	1	-
Accidents and Adverse Effects	87	40.6	75	35.0	12	5.6	16	24.8
Chronic Obstructive Pulmonary Diseases and Allied Conditions	76	35.5	68	31.8	8	3.7	-	-
Pneumonia and Influenza	57	26.6	49	22.9	8	3.7	1	-
Diabetes Mellitus	58	27.1	50	23.3	8	3.7	-	-
Chronic Liver Disease and Cirrhosis	37	17.3	32	14.9	5	-	-	-
Homicide	20	9.3	9	4.2	11	5.1	2	-
Suicide	20	9.3	16	7.5	3	-	3	-
Atherosclerosis	31	14.5	29	13.5	1	-	-	-
AIDS	6	2.8	3	-	3	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of St. Clair County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	146,740	Total Live Births:	2,161	Total Deaths:	1,280
Rank Among Counties:	14	Teenage Mothers:	284	Infant Deaths:	19
Per Square Mile:	199.8	Low Weight Births:	131	Neonatal Deaths:	14
Median Age:	32	First Births:	845	Postneonatal Deaths:	5
Children Ages 1-19:	44,011	Median Age of Mother:	25	Perinatal Deaths:	25
				Fetal Deaths:	12
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	1,272	Divorces:	779		
Marriage Rate:	17.3	Divorce Rate:	10.6		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	2,161	14.7	2,066	14.5	68	2.1	19	17.1
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	284	131.4	259	125.4	22	323.5	3	.
Low Weight	131	60.6	123	59.5	7	102.9	-	-
Under 1,500 Grams	23	10.6	22	10.6	1	.	-	-
< 38 Weeks Gestation	322	149.0	297	143.8	22	323.5	2	.
Prenatal Care Began in 1st Trimester	1,717	794.5	1,654	800.6	39	573.5	16	842.1

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	19	8.8	15	7.3	4	.	-	-
Neonatal Deaths	14	6.5	12	5.8	2	.	-	-
Postneonatal Deaths	5	.	3	.	2	.	-	-
Perinatal Deaths	25	11.5	23	11.1	2	.	-	-
Fetal Deaths	12	5.5	12	5.8	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,280	672	608	1,239	645	594	35	24	11	6	3	3	
Mortality Rate	8.7	9.4	8.1	8.7	9.3	8.2	10.6	16.0	6.1	5.4	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	19	2	3	5	14	16	34	46	54	145	320	622	-
White Male	7	2	3	3	9	11	25	30	23	95	180	257	-
White Female	8	-	-	2	5	3	9	13	30	44	126	353	-
Black Male	4	-	-	-	-	2	-	2	-	4	6	6	-
Black Female	-	-	-	-	-	-	-	-	1	2	3	5	-
Other Male	-	-	-	-	-	-	-	-	-	-	3	-	-
Other Female	-	-	-	-	-	-	-	1	-	-	1	-	-

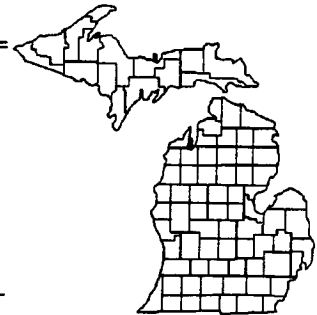
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,280	872.3	1,239	870.6	35	1,055.5	24	54.5
Diseases of the Heart	483	329.2	471	321.0	10	6.8	-	-
Malignant Neoplasms	307	209.2	297	202.4	9	6.1	-	-
Cerebrovascular Diseases	79	53.8	76	51.8	3	.	-	-
Accidents and Adverse Effects	67	45.7	66	45.0	1	.	14	31.8
Chronic Obstructive Pulmonary Diseases and Allied Conditions	65	44.3	63	42.9	1	.	2	.
Pneumonia and Influenza	41	27.9	39	26.6	1	.	1	.
Diabetes Mellitus	31	21.1	30	20.4	1	.	-	-
Chronic Liver Disease and Cirrhosis	20	13.6	17	11.6	2	.	-	-
Homicide	8	5.5	7	4.8	1	.	-	-
Suicide	16	10.9	16	10.9	-	-	5	.
Atherosclerosis	-	-	-	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of St. Joseph County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	60,629	Total Live Births:	912	Total Deaths:	522
Rank Among Counties:	28	Teenage Mothers:	123	Infant Deaths:	9
Per Square Mile:	120.6	Low Weight Births:	65	Neonatal Deaths:	5
Median Age:	32	First Births:	317	Postneonatal Deaths:	4
Children Ages 1-19:	18,333	Median Age of Mother:	25	Perinatal Deaths:	6
				Fetal Deaths:	2
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	496	Divorces:	310		
Marriage Rate:	16.4	Divorce Rate:	10.2		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	912	15.0	877	14.9	27	18.0	7	18.9
Teenage Mothers	123	134.9	116	132.3	6	222.2	1	.
Low Weight	65	71.3	62	70.7	2	.	1	.
Under 1,500 Grams	14	15.4	14	16.0	-	-	-	-
< 38 Weeks Gestation	150	164.5	134	152.8	14	518.5	2	.
Prenatal Care Began in 1st Trimester	679	744.5	658	750.3	15	555.6	5	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	9	9.9	9	10.3	-	-	-	-
Neonatal Deaths	5	.	5	.	-	-	-	-
Postneonatal Deaths	4	.	4	.	-	-	-	-
Perinatal Deaths	6	6.6	6	6.8	-	-	-	-
Fetal Deaths	2	.	2	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	522	274	248	499	266	233	19	7	12	4	1	3	
Mortality Rate	8.6	9.2	8.0	8.5	9.2	7.8	12.6	10.5	14.4	.	.	.	
	Age In Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	6	1	-	3	2	4	10	10	10	48	57	117	-
White Female	3	2	-	1	4	-	2	6	12	22	38	143	-
Black Male	-	-	-	-	-	1	-	-	-	1	1	4	-
Black Female	-	-	-	1	-	-	-	-	-	1	3	7	-
Other Male	-	-	-	-	-	-	1	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	1	-	1	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

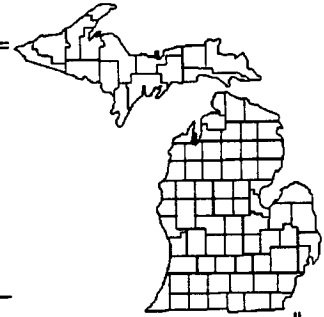
LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	522	861.0	499	849.3	19	1,265.0	12	65.5
Diseases of the Heart	179	295.2	171	282.0	6	9.9	-	-
Malignant Neoplasms	124	204.5	116	191.3	8	13.2	-	-
Cerebrovascular Diseases	33	54.4	31	51.1	2	.	-	-
Accidents and Adverse Effects	34	56.1	31	51.1	1	.	9	49.1
Chronic Obstructive Pulmonary Diseases and Allied Conditions	22	36.3	22	36.3	-	-	-	-
Pneumonia and Influenza	12	19.8	11	18.1	1	.	1	.
Diabetes Mellitus	16	26.4	16	26.4	-	-	-	-
Chronic Liver Disease and Cirrhosis	3	.	3	.	-	-	-	-
Homicide	2	.	2	.	-	-	-	-
Suicide	6	9.9	6	9.9	-	-	1	.
Atherosclerosis	5	.	5	.	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1989 Profile of Sanilac County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	41,647	Total Live Births:	545	Total Deaths:	438
Rank Among Counties:	37	Teenage Mothers:	64	Infant Deaths:	5
Per Square Mile:	43.2	Low Weight Births:	22	Neonatal Deaths:	2
Median Age:	32	First Births:	195	Postneonatal Deaths:	3
Children Ages 1-19:	12,575	Median Age of Mother:	25	Perinatal Deaths:	-
				Fetal Deaths:	-
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	302	Divorces:	166		
Marriage Rate:	14.5	Divorce Rate:	8.0		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	545	13.1	534	12.9	1	-	6	22.5
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	64	117.4	62	116.1	-	-	2	-
Low Weight	22	40.4	22	41.2	-	-	-	-
Under 1,500 Grams	3	-	3	-	-	-	-	-
< 38 Weeks Gestation	74	135.8	72	134.8	-	-	2	-
Prenatal Care Began in 1st Trimester	394	722.9	387	724.7	1	-	2	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	5	-	5	-	-	-	-	-
Neonatal Deaths	2	-	2	-	-	-	-	-
Postneonatal Deaths	3	-	3	-	-	-	-	-
Perinatal Deaths	-	-	-	-	-	-	-	-
Fetal Deaths	-	-	-	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	438	224	214	437	224	213	-	-	-	1	-	1	
Mortality Rate	10.5	11.0	10.0	10.6	11.1	10.1	-	-	-	-	-	-	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	5	3	1	2	4	3	11	18	20	47	109	215	-
White Male	1	2	-	1	2	3	7	11	14	23	65	95	-
White Female	4	1	1	1	2	-	4	7	6	24	42	120	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-

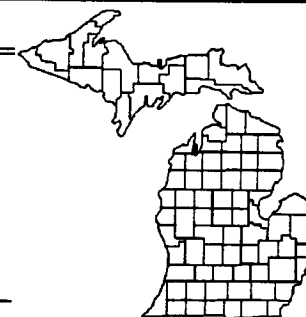
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	438	1,051.7	437	1,056.6	-	-	10	79.5
Diseases of the Heart	156	374.6	156	374.6	-	-	-	-
Malignant Neoplasms	101	242.5	101	242.5	-	-	1	-
Cerebrovascular Diseases	38	91.2	38	91.2	-	-	-	-
Accidents and Adverse Effects	25	60.0	25	60.0	-	-	8	63.6
Chronic Obstructive Pulmonary Diseases and Allied Conditions	15	36.0	15	36.0	-	-	-	-
Pneumonia and Influenza	13	31.2	13	31.2	-	-	-	-
Diabetes Mellitus	13	31.2	13	31.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	5	-	5	-	-	-	-	-
Homicide	2	-	2	-	-	-	-	-
Suicide	11	26.4	11	26.4	-	-	-	-
Atherosclerosis	2	-	2	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Schoolcraft County

**POPULATION**

As of July 1, 1989:	8,396
Rank Among Counties:	79
Per Square Mile:	7.2
Median Age:	36
Children Ages 1-19:	2,260

NATALITY

Total Live Births:	92
Teenage Mothers:	13
Low Weight Births:	4
First Births:	37
Median Age of Mother:	26

MORTALITY

Total Deaths:	110
Infant Deaths:	-
Neonatal Deaths:	-
Postneonatal Deaths:	-
Perinatal Deaths:	2
Fetal Deaths:	2
Maternal Deaths:	-

MARRIAGE

Marriages:	54
Marriage Rate:	12.9

DIVORCE

Divorces:	30
Divorce Rate:	7.1

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	92	11.0	86	10.7	-	-	6	16.8
Teenage Mothers	13	141.3	12	139.5	-	-	1	-
Low Weight	4	-	4	-	-	-	-	-
Under 1,500 Grams	-	-	-	-	-	-	-	-
< 38 Weeks Gestation	14	152.2	14	162.8	-	-	-	-
Prenatal Care Began in 1st Trimester	72	782.6	69	802.3	-	-	3	-

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	-	-	-	-	-	-	-	-
Neonatal Deaths	-	-	-	-	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	2	-	2	-	-	-	-	-
Fetal Deaths	2	-	2	-	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	110	58	52	105	56	49	-	-	-	5	2	3	
Mortality Rate	13.1	14.3	12.0	13.1	14.3	11.9	-	-	-	5	2	3	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	-	-	2	1	1	2	2	5	6	28	61	-	-
White Male	-	-	-	-	-	2	1	3	6	13	29	-	-
White Female	-	-	1	1	1	-	-	2	-	14	30	-	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	1	-	-	-	1	-	-	-	-	-	-
Other Female	-	-	-	-	-	-	-	-	-	1	2	-	-

Note: Mortality rate is per 1,000 population in specified group.

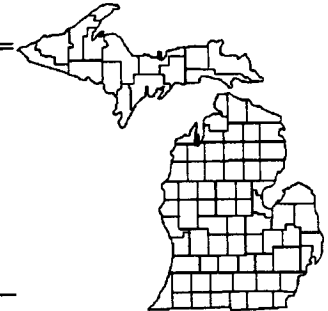
LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	110	1,310.1	105	1,306.1	-	-	4	-
Diseases of the Heart	38	452.6	37	440.7	-	-	1	-
Malignant Neoplasms	26	309.7	24	285.9	-	-	1	-
Cerebrovascular Diseases	5	-	5	-	-	-	-	-
Accidents and Adverse Effects	5	-	4	-	-	-	2	-
Chronic Obstructive Pulmonary Diseases and Allied Conditions	3	-	3	-	-	-	-	-
Pneumonia and Influenza	4	-	4	-	-	-	-	-
Diabetes Mellitus	2	-	2	-	-	-	-	-
Chronic Liver Disease and Cirrhosis	1	-	1	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	2	-	1	-	-	-	-	-
Atherosclerosis	3	-	3	-	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1989 Profile of Shiawassee County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	70,868	Total Live Births:	980	Total Deaths:	538
Rank Among Counties:	24	Teenage Mothers:	120	Infant Deaths:	9
Per Square Mile:	131.1	Low Weight Births:	61	Neonatal Deaths:	5
Median Age:	31	First Births:	383	Postneonatal Deaths:	4
Children Ages 1-19:	22,274	Median Age of Mother:	25	Perinatal Deaths:	13
				Fetal Deaths:	8
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	617	Divorces:	329		
Marriage Rate:	17.4	Divorce Rate:	9.3		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	980	13.8	973	13.9	-	-	5	.
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	120	122.4	118	121.3	-	-	1	.
Low Weight	61	62.2	61	62.7	-	-	-	-
Under 1,500 Grams	9	9.2	9	9.2	-	-	-	-
< 38 Weeks Gestation	148	151.0	148	152.1	-	-	-	-
Prenatal Care Began in 1st Trimester	792	808.2	788	809.9	-	-	2	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	9	9.2	9	9.2	-	-	-	-
Neonatal Deaths	5	.	5	.	-	-	-	-
Postneonatal Deaths	4	.	4	.	-	-	-	-
Perinatal Deaths	13	13.2	13	13.3	-	-	-	-
Fetal Deaths	8	8.1	8	8.2	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	538	274	264	534	272	262	-	-	-	4	2	2	
Mortality Rate	7.6	7.9	7.3	7.6	7.9	7.3	-	-	-	.	.	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	9	2	1	3	6	2	16	11	32	59	129	268	-
White Male	4	2	1	1	6	1	15	9	18	38	82	95	-
White Female	5	-	-	1	-	1	1	1	13	21	47	172	-
Black Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	1	-	-	-	-	-
Other Female	-	-	-	1	-	-	-	-	1	-	-	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	538	759.2	534	760.6	-	-	12	53.9
Diseases of the Heart	169	238.5	167	235.6	-	-	-	.
Malignant Neoplasms	131	184.9	131	184.9	-	-	1	.
Cerebrovascular Diseases	56	79.0	56	79.0	-	-	-	-
Accidents and Adverse Effects	30	42.3	29	40.9	-	-	10	44.9
Chronic Obstructive Pulmonary Diseases and Allied Conditions	18	25.4	18	25.4	-	-	-	-
Pneumonia and Influenza	9	12.7	9	12.7	-	-	-	-
Diabetes Mellitus	15	21.2	15	21.2	-	-	-	-
Chronic Liver Disease and Cirrhosis	10	14.1	10	14.1	-	-	-	-
Homicide	1	.	1	.	-	-	-	-
Suicide	7	9.9	7	9.9	-	-	-	-
Atherosclerosis	24	33.9	24	33.9	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Tuscola County



POPULATION

As of July 1, 1989:	56,696
Rank Among Counties:	31
Per Square Mile:	69.8
Median Age:	32
Children Ages 1-19:	17,226

NATALITY

Total Live Births:	787
Teenage Mothers:	106
Low Weight Births:	58
First Births:	310
Median Age of Mother:	26

MORTALITY

Total Deaths:	450
Infant Deaths:	8
Neonatal Deaths:	8
Postneonatal Deaths:	-
Perinatal Deaths:	9
Fetal Deaths:	2
Maternal Deaths:	-

MARRIAGE

Marriages:	430
Marriage Rate:	15.2

DIVORCE

Divorces:	215
Divorce Rate:	7.6

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	787	13.9	777	13.9	2	.	7	18.4
Teenage Mothers	106	134.7	104	133.8	1	.	1	.
Low Weight	58	73.7	58	74.6	-	-	-	-
Under 1,500 Grams	7	8.9	7	9.0	-	-	-	-
< 38 Weeks Gestation	113	143.6	111	142.9	1	.	1	.
Prenatal Care Began in 1st Trimester	629	799.2	623	801.8	2	.	3	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	8	10.2	8	10.3	-	-	-	-
Neonatal Deaths	8	10.2	8	10.3	-	-	-	-
Postneonatal Deaths	-	-	-	-	-	-	-	-
Perinatal Deaths	9	11.4	9	11.6	-	-	-	-
Fetal Deaths	2	.	2	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Deaths	450	243	207	445	240	205	2	2	-	3	1	2
Mortality Rate	7.9	8.7	7.2	7.9	8.7	7.2	.	.	-	.	.	.

	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	8	3	2	2	9	3	7	12	27	50	102	225	-
White Male	2	1	2	2	7	2	7	6	17	22	68	104	-
White Female	6	2	-	-	1	1	-	6	10	26	33	120	-
Black Male	-	-	-	-	-	-	-	-	-	1	1	-	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female	-	-	-	-	1	-	-	-	-	1	-	1	-

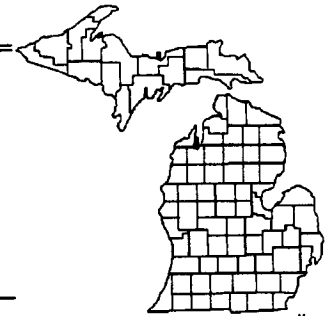
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	450	793.7	445	794.8	2	.	16	92.9
Diseases of the Heart	179	315.7	179	315.7	-	-	-	-
Malignant Neoplasms	83	146.4	81	142.9	1	.	1	.
Cerebrovascular Diseases	34	60.0	34	60.0	-	-	-	-
Accidents and Adverse Effects	29	51.1	28	49.4	-	-	11	63.9
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19	33.5	17	30.0	1	.	-	-
Pneumonia and Influenza	12	21.2	12	21.2	-	-	-	-
Diabetes Mellitus	11	19.4	11	19.4	-	-	-	-
Chronic Liver Disease and Cirrhosis	6	10.6	6	10.6	-	-	-	-
Homicide	1	.	1	.	-	-	1	.
Suicide	9	15.9	9	15.9	-	-	1	.
Atherosclerosis	5	.	5	.	-	-	-	-
AIDS	1	.	1	.	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Van Buren County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	70,067	Total Live Births:	1,139	Total Deaths:	634
Rank Among Counties:	26	Teenage Mothers:	197	Infant Deaths:	11
Per Square Mile:	114.6	Low Weight Births:	76	Neonatal Deaths:	4
Median Age:	32	First Births:	437	Postneonatal Deaths:	7
Children Ages 1-19:	21,403	Median Age of Mother:	25	Perinatal Deaths:	11
				Fetal Deaths:	8
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	637	Divorces:	408		
Marriage Rate:	18.2	Divorce Rate:	11.6		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	1,139	16.3	1,045	16.3	82	15.5	10	12.7
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	197	173.0	167	159.8	27	329.3	3	.
Low Weight	76	66.7	64	61.2	11	134.1	1	.
Under 1,500 Grams	9	7.9	7	6.7	2	.	-	.
< 38 Weeks Gestation	188	165.1	166	158.9	20	243.9	2	.
Prenatal Care Began in 1st Trimester	810	711.2	757	724.4	47	573.2	5	.

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	11	9.7	10	9.6	1	.	-	.
Neonatal Deaths	4	.	3	.	1	.	-	.
Postneonatal Deaths	7	6.1	7	6.7	-	-	-	-
Perinatal Deaths	11	9.6	11	10.4	-	-	-	-
Fetal Deaths	8	7.0	8	7.6	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	634	322	312	559	284	275	66	32	34	9	6	3	
Mortality Rate	9.0	9.4	8.7	8.7	9.0	8.5	12.5	13.3	11.8	11.4	19.7	.	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	11	4	3	2	5	4	13	16	30	80	118	347	1
White Male	7	3	-	1	4	2	8	10	18	37	55	138	1
White Female	3	1	2	1	1	2	3	5	10	30	46	171	-
Black Male	-	-	1	-	-	-	-	-	2	9	6	14	-
Black Female	1	-	-	-	-	-	1	1	-	2	7	21	-
Other Male	-	-	-	-	-	-	1	-	-	1	3	-	-
Other Female	-	-	-	-	-	-	-	-	-	-	1	2	-

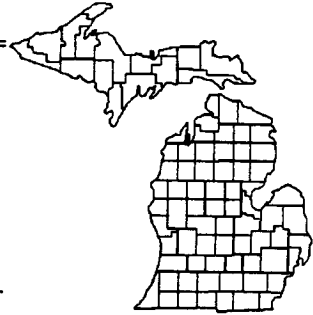
Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	634	904.8	559	873.5	66	1,249.8	14	65.4
Diseases of the Heart	210	299.7	184	262.6	22	31.4	-	-
Malignant Neoplasms	158	225.5	137	195.5	20	28.5	-	-
Cerebrovascular Diseases	37	52.8	31	44.2	6	8.6	-	-
Accidents and Adverse Effects	42	59.9	40	57.1	1	.	8	37.4
Chronic Obstructive Pulmonary Diseases and Allied Conditions	28	40.0	27	38.5	1	.	-	-
Pneumonia and Influenza	19	27.1	18	25.7	1	.	-	-
Diabetes Mellitus	19	27.1	14	20.0	5	.	1	-
Chronic Liver Disease and Cirrhosis	2	.	2	.	-	-	-	-
Homicide	4	.	4	.	-	-	-	-
Suicide	10	14.3	9	12.8	1	.	1	-
Atherosclerosis	17	24.3	15	21.4	2	.	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Washtenaw County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	272,187	Total Live Births:	4,172	Total Deaths:	1,483
Rank Among Counties:	7	Teenage Mothers:	326	Infant Deaths:	37
Per Square Mile:	383.2	Low Weight Births:	284	Neonatal Deaths:	27
Median Age:	30	First Births:	1,851	Postneonatal Deaths:	10
Children Ages 1-19:	65,933	Median Age of Mother:	28	Perinatal Deaths:	50
				Fetal Deaths:	28
				Maternal Deaths:	-
MARRIAGE		DIVORCE			
Marriages:	2,349	Divorces:	1,128		
Marriage Rate:	17.3	Divorce Rate:	8.3		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	4,172	15.3	3,329	14.3	632	19.9	209	25.5
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	326	78.1	194	58.3	131	207.3	1	.
Low Weight	284	68.1	167	50.2	104	164.6	12	57.4
Under 1,500 Grams	61	14.6	27	8.1	32	50.6	2	.
< 38 Weeks Gestation	677	162.3	477	143.3	173	273.7	27	129.2
Prenatal Care Began in 1st Trimester	3,504	839.9	2,894	869.3	429	678.8	181	866.0

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	37	8.9	23	6.9	13	20.6	1	.
Neonatal Deaths	27	6.5	16	4.8	11	17.4	-	-
Postneonatal Deaths	10	2.4	7	2.1	2	.	1	.
Perinatal Deaths	50	11.9	35	10.4	13	20.4	-	-
Fetal Deaths	28	6.7	22	6.6	4	.	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	1,483	715	768	1,320	624	696	151	85	66	12	6	6	
Mortality Rate	5.4	5.2	5.7	5.7	5.4	6.0	4.7	5.4	4.1	1.5	1.4	1.6	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	37	4	1	4	20	19	42	57	81	168	307	743	-
White Male	16	3	1	-	8	14	23	21	34	91	149	264	-
White Female	7	-	-	4	10	2	9	24	25	55	118	442	-
Black Male	7	1	-	-	1	3	7	6	13	13	18	16	-
Black Female	6	-	-	-	1	-	1	5	6	8	19	20	-
Other Male	1	-	-	-	-	-	1	1	1	1	-	-	-
Other Female	-	-	-	-	-	-	1	-	2	-	2	1	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	1,483	544.8	1,320	568.5	151	475.0	29	44.0
Diseases of the Heart	484	177.8	448	164.6	34	12.5	1	.
Malignant Neoplasms	341	125.3	299	109.9	38	14.0	1	.
Cerebrovascular Diseases	75	27.6	71	26.1	4	.	1	.
Accidents and Adverse Effects	74	27.2	68	25.0	6	2.2	15	22.8
Chronic Obstructive Pulmonary Diseases and Allied Conditions	46	16.9	46	16.9	-	-	-	-
Pneumonia and Influenza	54	19.8	49	18.0	5	.	1	.
Diabetes Mellitus	35	12.9	29	10.7	5	.	-	-
Chronic Liver Disease and Cirrhosis	9	3.3	7	2.6	2	.	-	-
Homicide	6	2.2	3	.	3	.	1	.
Suicide	28	10.3	26	9.6	1	.	1	.
Atherosclerosis	19	7.0	17	6.2	2	.	-	-
AIDS	8	2.9	6	2.2	2	.	-	-

Note: Rate is per 100,000 population in specified group.

1989 Profile of Wayne County



POPULATION		NATALITY		MORTALITY	
As of July 1, 1989:	2,108,933	Total Live Births:	39,024	Total Deaths:	21,822
Rank Among Counties:	1	Teenage Mothers:	6,913	Infant Deaths:	630
Per Square Mile:	3,428.6	Low Weight Births:	4,454	Neonatal Deaths:	425
Median Age:	31	First Births:	15,241	Postneonatal Deaths:	205
Children Ages 1-19:	603,372	Median Age of Mother:	25	Perinatal Deaths:	674
				Fetal Deaths:	317
				Maternal Deaths:	6
MARRIAGE		DIVORCE			
Marriages:	13,036	Divorces:	8,257		
Marriage Rate:	12.4	Divorce Rate:	7.8		

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	39,024	18.5	18,632	14.6	19,669	24.3	537	21.0
	Total		White		Black		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Teenage Mothers	6,913	177.1	1,780	95.5	5,034	255.9	51	95.0
Low Weight	4,454	114.1	1,195	64.1	3,185	161.9	40	74.5
Under 1,500 Grams	983	25.2	191	10.3	782	39.8	2	.
< 38 Weeks Gestation	8,932	228.9	2,973	159.6	5,814	295.6	104	193.7
Prenatal Care Began in 1st Trimester	28,214	723.0	15,437	828.5	12,317	626.2	367	683.4

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	630	16.1	160	8.6	459	23.3	10	18.6
Neonatal Deaths	425	10.9	108	5.8	310	15.8	5	.
Postneonatal Deaths	205	5.3	52	2.8	150	7.6	2	.
Perinatal Deaths	674	17.1	187	10.0	477	24.0	5	.
Fetal Deaths	317	8.1	97	5.2	214	10.8	2	.

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	21,822	11,517	10,305	12,751	6,490	6,261	8,949	4,957	3,992	122	70	52	
Mortality Rate	10.3	11.4	9.4	10.0	10.5	9.6	11.1	13.2	9.2	4.8	5.7	3.9	
	Age in Years												
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
Total Deaths	630	69	42	44	226	271	772	1,235	1,465	3,082	5,263	8,721	2
White Male	89	12	8	10	48	56	211	275	389	1,066	1,809	2,516	1
White Female	71	16	4	4	14	16	74	135	270	645	1,429	3,580	1
Black Male	242	23	14	18	126	152	338	555	499	772	1,123	1,095	-
Black Female	217	18	14	12	36	46	147	263	296	582	876	1,483	-
Other Male	4	-	1	-	2	-	1	4	5	10	16	22	-
Other Female	3	-	-	-	-	1	-	3	4	7	7	18	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	21,822	1,034.7	12,751	1,000.9	8,949	1,105.6	381	63.1
Diseases of the Heart	7,984	378.6	5,122	242.9	2,814	133.4	8	1.3
Malignant Neoplasms	4,677	221.8	2,940	139.4	1,712	81.2	22	3.6
Cerebrovascular Diseases	1,240	58.8	711	33.7	523	24.8	1	.
Accidents and Adverse Effects	691	32.8	384	18.2	301	14.3	107	17.7
Chronic Obstructive Pulmonary Diseases and Allied Conditions	621	29.4	438	20.8	179	8.5	5	.
Pneumonia and Influenza	658	31.2	420	19.9	237	11.2	9	1.5
Diabetes Mellitus	608	28.8	325	15.4	278	13.2	1	.
Chronic Liver Disease and Cirrhosis	510	24.2	243	11.5	264	12.5	1	.
Homicide	735	34.9	105	5.0	627	29.7	138	22.9
Suicide	265	12.6	191	9.1	73	3.5	29	4.8
Atherosclerosis	106	5.0	79	3.7	26	1.2	-	-
AIDS	171	8.1	53	2.5	118	5.6	1	.

Note: Rate is per 100,000 population in specified group.

1989 Profile of Wexford County



POPULATION

As of July 1, 1989:	27,482
Rank Among Counties:	48
Per Square Mile:	48.6
Median Age:	34
Children Ages 1-19:	8,030

NATALITY

Total Live Births:	397
Teenage Mothers:	53
Low Weight Births:	18
First Births:	-
Median Age of Mother:	25

MORTALITY

Total Deaths:	239
Infant Deaths:	5
Neonatal Deaths:	3
Postneonatal Deaths:	2
Perinatal Deaths:	7
Fetal Deaths:	5
Maternal Deaths:	-

MARRIAGE

Marriages:	272
Marriage Rate:	19.8

DIVORCE

Divorces:	154
Divorce Rate:	11.2

NATALITY BY RACE OF MOTHER

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births	397	14.4	387	14.2	-	-	9	51.4
Teenage Mothers	53	133.5	51	131.8	-	-	2	.
Low Weight	18	45.3	18	46.5	-	-	-	-
Under 1,500 Grams	1	.	1	.	-	-	-	-
< 38 Weeks Gestation	43	108.3	42	108.5	-	-	1	.
Prenatal Care Began in 1st Trimester	319	803.5	311	803.6	-	-	7	777.8

Note: Rate is per 1,000 population and ratio per 1,000 live births in specified group.

INFANT AND PERINATAL MORTALITY BY RACE

	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Infant Deaths	5	.	5	.	-	-	-	-
Neonatal Deaths	3	.	3	.	-	-	-	-
Postneonatal Deaths	2	.	2	.	-	-	-	-
Perinatal Deaths	7	17.4	7	17.9	-	-	-	-
Fetal Deaths	5	.	5	.	-	-	-	-

Note: Rate is per 1,000 live births or total births in specified group.

MORTALITY

	All Races			White			Black			Other			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Deaths	239	134	105	237	134	103	1	-	1	1	-	1	
Mortality Rate	8.7	10.2	7.3	8.7	10.3	7.2	.	-	.	1	-	1	
	Age in Years												
Total Deaths	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-69	70+	Unk
White Male	4	-	-	3	-	2	3	5	13	27	64	117	-
White Female	1	-	-	1	-	1	2	4	9	17	41	54	-
Black Male	-	-	-	-	-	-	-	1	4	10	22	62	-
Black Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Female	-	-	-	-	-	-	-	-	-	-	-	-	-
											1	-	-

Note: Mortality rate is per 1,000 population in specified group.

LEADING CAUSES OF DEATH

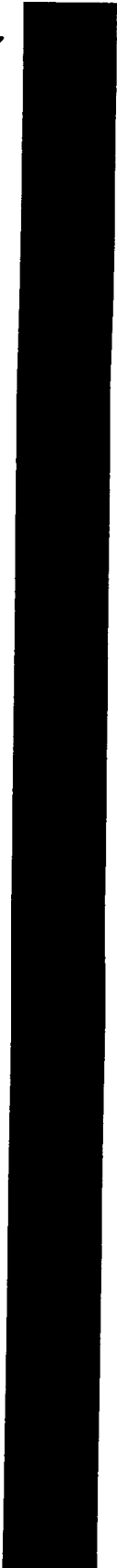
	Total		White		Black		Children Ages 1-19	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Causes	239	869.7	237	868.0	1	.	3	.
Diseases of the Heart	79	287.5	78	283.8	1	.	-	-
Malignant Neoplasms	62	225.6	62	225.6	-	-	-	-
Cerebrovascular Diseases	19	69.1	19	69.1	-	-	-	-
Accidents and Adverse Effects	7	25.5	7	25.5	-	-	3	.
Chronic Obstructive Pulmonary Diseases and Allied Conditions	14	50.9	14	50.9	-	-	-	-
Pneumonia and Influenza	14	50.9	13	47.3	-	-	-	-
Diabetes Mellitus	6	21.8	6	21.8	-	-	-	-
Chronic Liver Disease and Cirrhosis	-	-	-	-	-	-	-	-
Homicide	-	-	-	-	-	-	-	-
Suicide	3	.	3	.	-	-	-	-
Atherosclerosis	8	29.1	8	29.1	-	-	-	-
AIDS	-	-	-	-	-	-	-	-

Note: Rate is per 100,000 population in specified group.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

NATALITY

SECTION I



NATALITY

An Overview, 1989

Total Resident Births	149,045
Total Resident Live Births	148,164
Resident Live Births per Day	406
Total Resident Fetal Deaths	881
Resident Fetal Deaths per Day	2
Crude Birth Rate	16.0
Fertility Rate	67.9
Fetal Death Ratio	5.9
First Order Births (Percent of Total Live Births)	39.9
Median Birth Weight in Grams (Live Births)	3,380
Median Birth Weight in Grams (Fetal Deaths)	567
Low Weight Live Births	11,323
Low Weight Birth Ratio	76.4
Median Age of Mother (Live Births)	26
Median Age of Mother (Fetal Deaths)	26
Live Births with Congenital Anomalies	3,161
Congenital Anomalies per 10,000 Live Births	213.3
Live Births with no Prenatal Care	2,549
No Prenatal Care Ratio	17.2
Home Births	802
Live Born Sets of Twins	1,851
Live Born Sets of Triplets	41
Live Born Multiple Births of Four or More	7
Male Live Births per 100 Female Live Births	105.6

Table 1.1
Total Births¹
Michigan Residents
Selected Years, 1900 - 1989

Year	Total
1900	45,024
1901	44,722
1910	66,668
1920	96,015
1930	102,596
1933	83,258
1940	101,708
1950	163,150
1957	211,642
1960	198,064
1970	173,727
1971	164,167
1972	148,624
1973	143,232
1974	138,852
1975	135,287
1976	132,642
1977	139,700
1978	140,003
1979	145,627
1980	146,297
1981	141,619
1982	138,903
1983	133,959
1984	136,711
1985	139,005
1986	138,491
1987	141,290
1988	140,396
1989	149,045

¹ Live births plus fetal deaths.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Between 1900 and 1989, the number of total births (live births and fetal deaths) has varied considerably (Table 1.1). The general trend has been increasing numbers of total births from 1900 through 1957, declining numbers through 1976 and fairly stable numbers until 1989 which posted the largest number of total births since 1971.

According to the annual enumeration of births by local officials in 1900 there were 45,024 births in Michigan. This figure

dropped slightly to 44,722 in 1901 (the lowest total in the century). The number of reported births increased significantly with the initiation in 1906 of mandatory filing of individual certificates for each Michigan birth. Total births increased during the next two decades, dropped temporarily in 1919, and then leveled off at just over 100,000 between 1924 and 1930.

During the first years of the Great Depression, total births declined from 102,596 in 1930 to 83,258 in 1933. Then from 1933 to 1957,

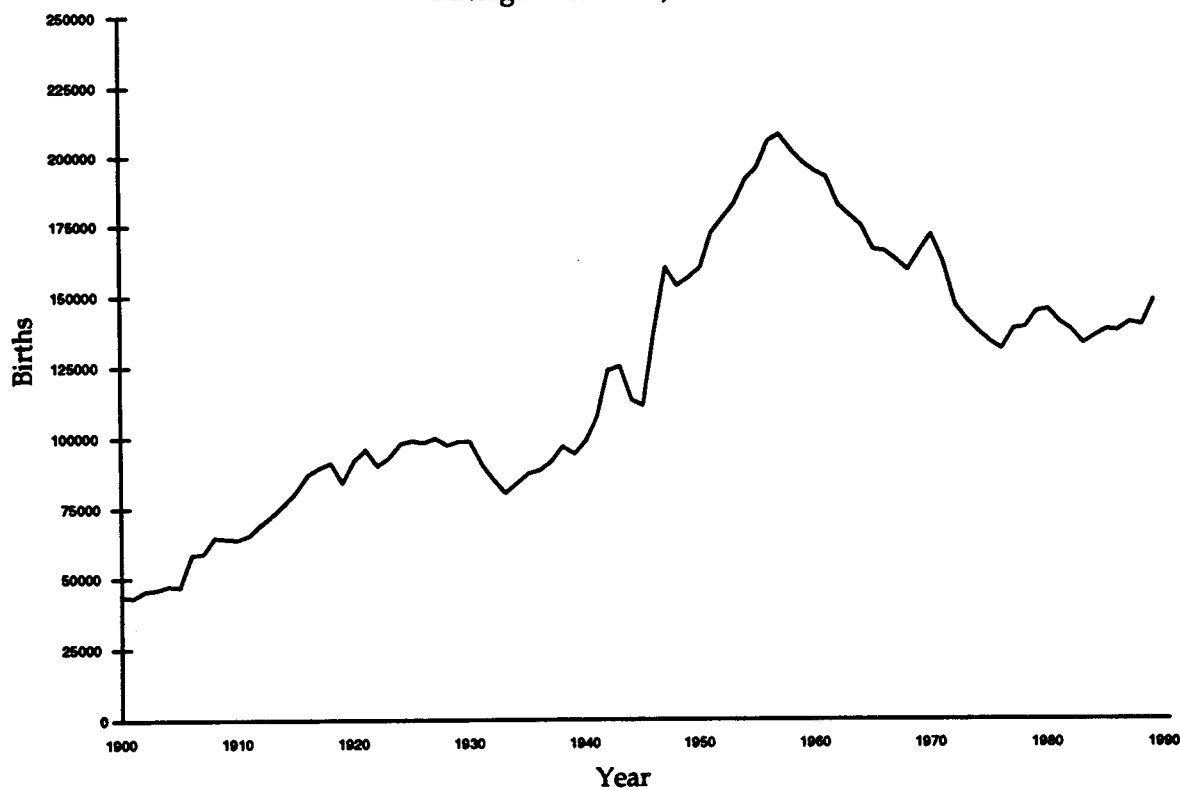
excluding the war years of 1944 and 1945, total births increased to a century high peak of 211,642 in 1957. Births in the next two decades dropped to a post-World War II low of 132,642 in 1976. Since 1976, the number of total births increased, reaching 146,297 in 1980, declined to 133,959 in 1983 and generally increased to 149,045 in 1989.

LIVE BIRTHS

The smallest number of live births officially recorded in this century was 43,221 in 1901. The actual number of live births was undoubtedly higher. Because of the method of recording, many live births were probably not recorded. Figure 1.1 portrays the number of live births for Michigan from 1900 through 1989.

Live births, which constitute a large percentage of total births, naturally followed the same pattern of increases and decreases, rising appreciably from 43,699 in 1900 to 208,488 in 1957, the peak year for this century (Figure 1.1 and Table 1.2). Between 1957 and 1976, live births decreased by 37.0 percent to 131,378, the lowest total in 31 years. In 1977, however, live births increased by 5.4 percent, the largest such increase since 1951. In each of the following three years the number of live births also increased. In 1980 there were 145,162 live births, the highest annual total since 1972. Between 1980 and 1983 the number of live births declined by 8.4 percent, reaching 133,026 in 1983. By 1988 the number of live births increased 5.0 percent to 139,635. Between 1988 and 1989 the number increased 7.2 percent to 148,164.

Figure 1.1
Live Births
Michigan Residents, 1900-1989



The national pattern was similar to that observed in Michigan. Live births increased from an estimated 2,718,000 in 1909 to an estimated 4,300,000 in 1957. Since 1957, there has been a general decline in live births. The low point occurred in 1973 when live births in the United States totaled 3,136,965. Unlike Michigan, the number of live births for the nation increased in ten out of thirteen years from 1977 through 1989. For 1989 the provisional figure was 4,021,000 an increase (2.9 percent) from the number born in 1988.

Another view of the historic pattern in live births may be obtained through examination of changes in the crude birth rate. By considering population size the historic pattern of live births is stabilized (Figure 1.2). The crude birth rate in Michigan ranges from a low of 14.4 per 1,000 residents in 1976 to a high of 27.4 in 1956. The crude birth rate increased from 22.1 in 1906, the first year for filing birth certificates, to 26.2 in 1916. During the period 1917 to 1933 Michigan's crude birth rate declined steadily, reaching 16.2. The birth rate rose over the next 23 years to a peak in 1956 (27.4). Between 1956 and 1976 Michigan's crude birth rate declined by 47.4 percent, falling to 14.4. Since 1976, the crude birth rate has fluctuated between the high of 16.0 in 1989 and a low of 14.5 in 1983.

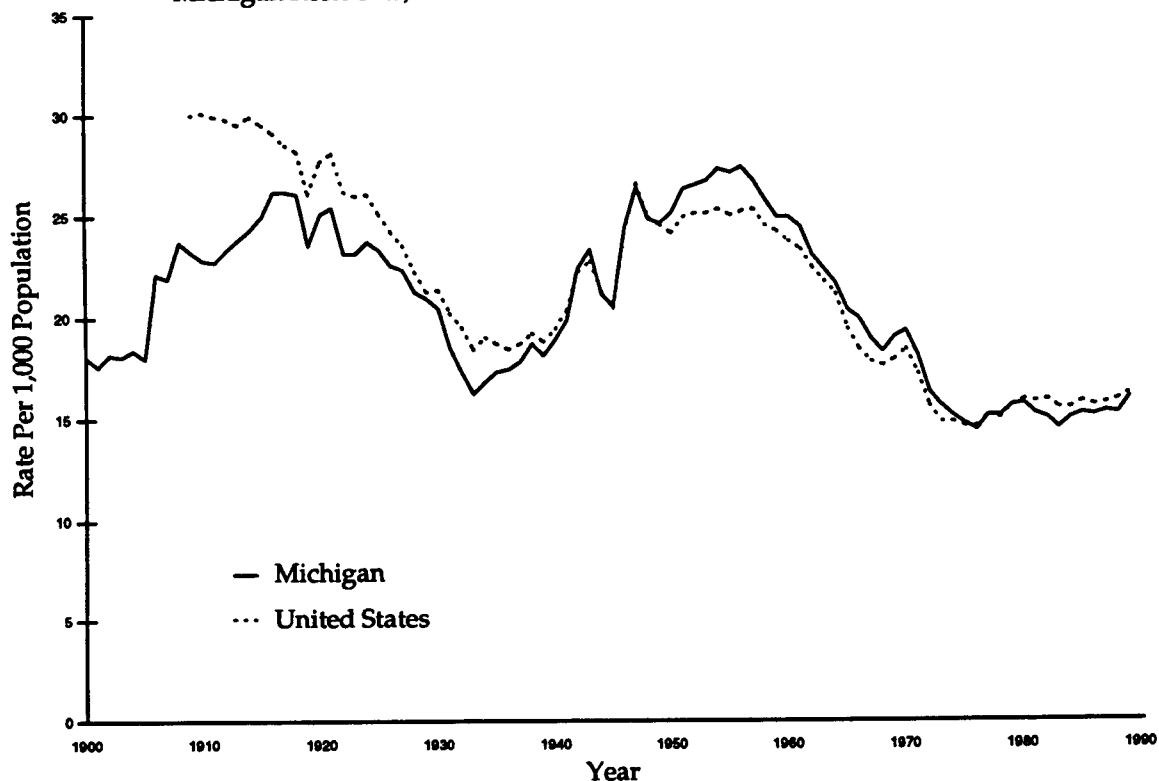
National statistics since 1900 follow the same general pattern of rising and falling as observed in Michigan. The highest rate observed nationally over the period 1909 through 1986 was 30.1 in 1910, while the lowest was 14.6, occurring in both 1975 and 1976. United States live birth rates were above those observed in Michigan without exception from 1909 to 1941. Between 1942 and 1947, national rates were slightly above those for the state twice. National birth rates were below Michigan rates from 1949 through 1975. For thirteen of the past fourteen years, the rates for the nation were equal to or above those observed in Michigan. The 1989

Table 1.2
Live Births and Crude Birth Rates
Michigan and United States Residents
Selected Years, 1900 - 1989

United States		Year	Michigan	
Number	Rate		Number	Rate
—	—	1900	43,699	18.1
2,777,000	30.1	1910	64,109	22.8
2,950,000	27.7	1920	92,245	25.1
2,618,000	21.3	1930	98,882	20.4
2,559,000	19.4	1940	99,106	18.9
3,632,000	24.1	1950	160,055	25.1
4,257,850	23.7	1960	195,056	24.9
4,268,326	23.3	1961	192,825	24.4
4,167,362	22.4	1962	182,790	23.0
4,098,020	21.7	1963	178,871	22.3
4,027,490	21.1	1964	175,103	21.6
3,760,358	19.4	1965	166,464	20.3
3,606,274	18.4	1966	165,794	19.9
3,520,959	17.8	1967	162,756	18.9
3,501,564	17.6	1968	159,058	18.3
3,600,206	17.9	1969	165,760	19.0
3,731,386	18.4	1970	171,667	19.3
3,555,970	17.2	1971	162,244	18.1
3,258,411	15.6	1972	146,854	16.3
3,136,965	14.8	1973	141,550	15.6
3,159,958	14.8	1974	137,414	15.1
3,144,198	14.6	1975	133,931	14.7
3,167,788	14.6	1976	131,378	14.4
3,326,632	15.1	1977	138,416	15.1
3,333,279	15.0	1978	138,802	15.1
3,494,398	15.6	1979	144,452	15.6
3,612,258	15.9	1980	145,162	15.7
3,629,238	15.8	1981	140,579	15.2
3,680,537	15.9	1982	137,950	15.0
3,638,933	15.5	1983	133,026	14.5
3,669,141	15.5	1984	135,782	15.0
3,760,561	15.8	1985	138,052	15.2
3,756,547	15.6	1986	137,626	15.1
3,809,394	15.7	1987	140,466	15.3
3,909,510	15.9	1988	139,635	15.2
4,021,000Pr.	16.2Pr.	1989	148,164	16.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 1.2
Live Birth Rates
 Michigan Residents, 1900 - 1989 and United States¹ Residents, 1909 - 1989²



¹ United States rates prior to 1909 are not available.

² United States rate for 1989 is provisional.

provisional rate for the United States was 16.2 per 1,000 people.

FERTILITY

The crude birth rates examined above are useful statistics for gauging overall trends in live births for specific geographic areas. Where attempts are made to interpret such trends, however, crude birth rates can be misleading. These rates do not specifically incorporate the size of the population capable of bearing children. This population subset, generally considered to be women between the ages of 15 through 44, does not always maintain a stable relationship with the total population. A more exact measure for analyzing changing birth patterns is the fer-

tility rate. Since the fertility rate relates the number of live births to the female population of childbearing age, more valid comparisons for various periods of time and locations are possible.

A comparison of fertility rates for Michigan with those for the United States is presented in Table 1.3. The crude birth rate changes observed understate the recent decline in fecundity for both regions. Since 1960 the crude birth rate in Michigan has dropped 35.7 percent, while the fertility rate in 1989 was 44.8 percent below the 1960 rate. For the United States over this same period the crude birth rate declined 31.6 percent and the fertility rate fell by 41.7 percent. The difference in these two measures occurred because the proportion of the population in the childbear-

Table 1.3
Fertility Rates
Michigan and United States Residents
 Selected Years, 1900 - 1989

United States	Year	Michigan
—	1900	78.5
126.8	1910	99.0
117.9	1920	111.6
89.2	1930	87.6
79.9	1940	78.9
106.2	1950	110.5
118.0	1960	123.1
117.1	1961	119.0
112.0	1962	110.8
108.3	1963	106.6
104.7	1964	102.6
96.3	1965	95.9
90.8	1966	94.0
87.2	1967	90.8
85.2	1968	87.3
86.1	1969	89.6
87.9	1970	91.7
81.6	1971	85.0
73.1	1972	75.7
68.8	1973	71.7
67.8	1974	68.3
66.0	1975	65.8
65.0	1976	63.6
66.8	1977	65.8
65.5	1978	64.9
67.2	1979	66.4
68.4	1980	66.3
67.4	1981	63.2
67.3	1982	61.7
65.8	1983	59.3
65.4	1984	63.1
66.2	1985	63.8
65.4	1986	63.2
65.7	1987	64.3
67.2	1988	63.9
68.8Pr.	1989	67.9

Source: Office of the State Registrar and Center for Health Statistics, MDPH

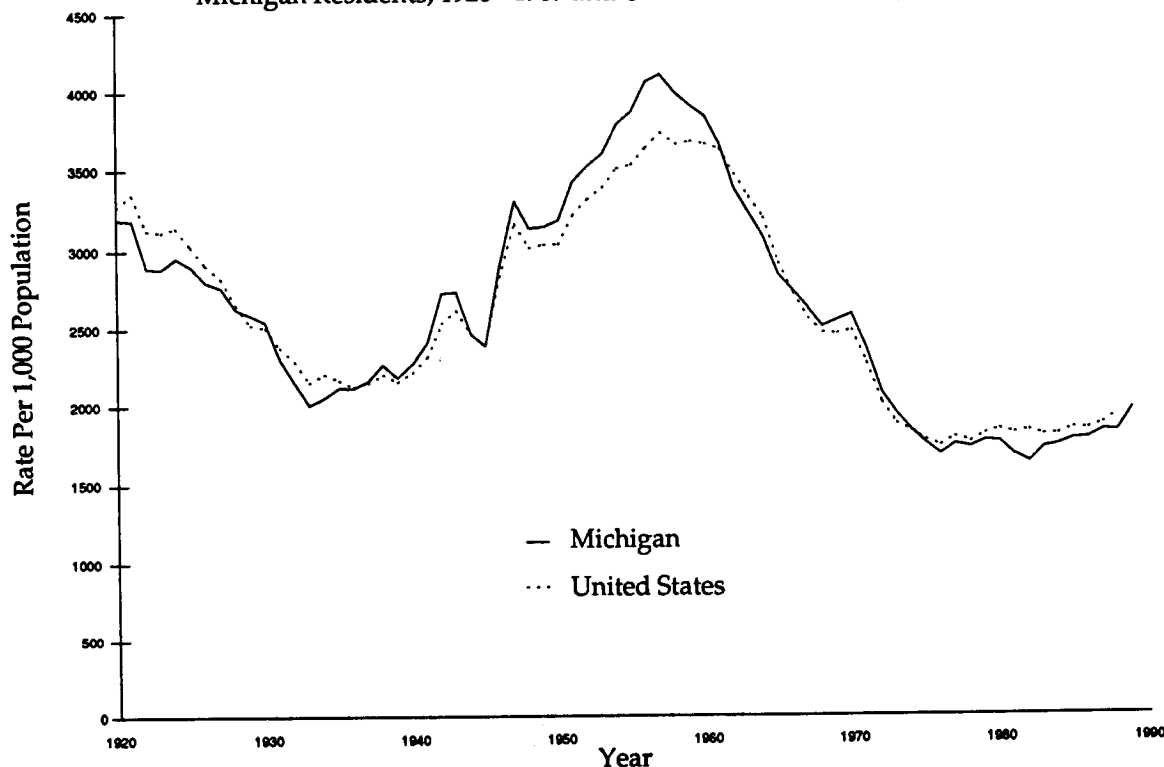
ing ages has increased over this 29 year period. In Michigan, though the total population has increased 18.5 percent in this time period, the number of women 15 to 44 years of age has increased 37.7 percent. The proportion of women of childbearing age in Michigan increased from 20.3 percent to 23.5 percent of the population.

Figure 1.3 displays the changes in the total fertility rate between 1920 and 1989 for Michigan and the United States. (See also Table 4.4) The total fertility rate is a hypothetical measure of the number of live births that would occur to each 1,000 women during their reproductive life, if these women experienced the age-specific birth rates observed in a given year.

Michigan's total fertility rate has generally paralleled that of the nation. The Michigan rate dropped from 3,195.5 in 1920 to 2,006.5 in 1933 and then increased between 1933 and 1957, reaching 4,100.0 in the latter year. Between 1957 and 1976 the total fertility rate in Michigan declined to a low of 1,682.0 in 1976. The rates for the following thirteen years were higher, fluctuating between a high level 1,962.0 in 1989 and a low of 1,632.5 in 1982. The rate was 1,932.0 in 1988 for the United States. The national rates were higher than the Michigan rates each year between 1975 and 1988.

Since 1973 both Michigan and national total fertility rates have been below 2,000. A total fertility rate of over 2,000 is necessary for replacement of the parents, since not all women survive the reproductive years nor would all children survive to adulthood. If the total fertility rate falls below 2,000 for a long period, a natural decrease in population would eventually result. It should be noted that although the total fertility rate has been below 2,000 since 1973, the rate of natural increase for Michigan remains positive. Over the period 1973 through 1989, there were

Figure 1.3
Total Fertility Rates¹
 Michigan Residents, 1920 - 1989 and United States Residents, 1920 - 1988



¹ Total fertility rate is total children to 1,000 women in their lifetime assuming constant live birth rates.

1,058,367 persons added to the population of Michigan through the excess of live births over deaths.

RACIAL COMPOSITION

The racial composition of women having live births in Michigan changed over the period 1970 through 1989 (Table 1.4). Live births to white women declined from 84.0 percent of all live births in 1970 to 81.3 percent in 1973. Between 1974 and 1985, this percentage held between 82.1 and 83.0. The percentage declined to 80.4 in 1988 and fell to a low of 77.7 percent in 1989.

Live births to black women increased from 15.4 percent of the total in 1970 to 17.8 percent

in 1973 and then decreased in proportion through 1982. From 1983 on the proportion generally increased reaching 17.8 percent again in 1987 and a high of 20.1 percent of all live births in 1989. Live births of all other races increased from 0.5 percent in 1970 to 1.3 percent in 1980, held at that level through 1985 and increased to 1.7 in 1989.

It should be noted that Indians from India were classified as white before 1978 and among Asian or Pacific Islanders since 1978. There has been a corresponding increase in the number of live births recorded to Asian or Pacific Islander mothers since 1978.

In absolute terms, the numbers of live births to black and white mothers declined between 1970 and 1976, with an especially sharp

decline observed in births to white mothers between 1970 and 1972. Between 1976 and 1980 the numbers of live births to white and black mothers increased by 10.5 and 7.5 percent respectively. From 1980 through 1983 the numbers of infants born to white and black women decreased to the second lowest and lowest numbers respectively since 1970. The numbers of infants born to white women fluctuated between 1984 and 1988, but showed a large increase in 1989. The numbers for black infants have increased 18.3 percent between 1983 and 1988 and rose 18.4 percent in 1989.

A sharp increase in the number of births to Asian and Pacific Islanders occurred in 1978

when births to Indians from India were added to this category. The numbers of births to American Indians gradually increased by about 80.4 percent between 1970 and 1988. American Indians showed a large increase in 1989. Between 1988 and 1989 American Indian live births increased 62.9 percent. The number of births to Asian or Pacific Islanders remained fairly stable between 1970 and 1977. There has been an 41.1 percent increase in the number of live births to Asian or Pacific Islander mothers between 1978 and 1989.

Although 77.7 percent of the mothers were white only 76.8 percent of the live births in 1989 were white infants (Tables 1.4 and 1.5). Conversely 20.1 percent of the mothers were

Table 1.4
Live Births by Mother's Race or National Origin
Michigan Residents, 1970 - 1989¹

Year	All Races	White ²	Black	American Indian	Asian or Pacific Islander ^{2,3}	Other ⁴	Unknown
1970	171,667	144,159	26,513	291	490	90	124
1971	162,244	134,486	26,755	281	494	115	113
1972	146,854	120,042	25,760	274	523	139	116
1973	141,550	115,150	25,252	255	391	280	222
1974	137,414	112,768	22,836	234	379	337	860
1975	133,931	110,058	22,692	227	425	299	230
1976	131,378	108,295	21,778	262	471	367	205
1977	138,416	114,511	22,620	291	452	316	226
1978	138,802	114,652	22,423	342	1,157	8	220
1979	144,452	119,218	23,346	363	1,253	6	266
1980	145,162	119,698	23,422	416	1,387	22	217
1981	140,579	116,596	22,002	419	1,408	20	134
1982	137,950	114,465	21,574	425	1,356	16	114
1983	133,026	109,892	21,295	457	1,243	21	118
1984	135,782	111,574	22,322	490	1,274	28	94
1985	138,052	114,150	21,935	471	1,311	38	147
1986	137,626	112,255	23,366	478	1,405	44	78
1987	140,466	113,386	24,975	484	1,477	31	113
1988	139,635	112,232	25,217	525	1,521	47	93
1989	148,164	115,186	29,839	844	1,633	48	614

¹ Coding changes initiated in 1984 resulted in a net decrease of 0.7 and 0.1 percent of the infants coded to the races White and Black respectively. This change resulted in an increase in the number of infants coded to races other than White or Black in 1984.

² Persons of Spanish or of Mexican-American descent are included with White. Indians from India were counted as "White" from 1970-1977 and with "Other Asian or Pacific Islander" since 1978.

³ Includes Chinese, Japanese, Hawaiian, Filipino, and other Asian or Pacific Islander.

⁴ Includes Koreans for 1973-1977. Koreans are included in "Other Asian or Pacific Islander" for other years.

Table 1.5
Live Births by Infant's Race or National Origin
 Michigan Residents, 1970 - 1989¹

Year	Total All Races	White ²	Black	American Indian	Asian or Pacific Islander ^{2,3}	Other ⁴	Unknown
1970	171,667	143,871	26,957	299	356	74	110
1971	162,244	134,165	27,245	313	373	40	108
1972	146,854	119,787	26,215	316	366	64	106
1973	141,550	114,878	25,741	302	288	144	197
1974	137,414	112,474	23,328	270	310	194	838
1975	133,931	109,718	23,224	294	331	184	180
1976	131,378	107,907	22,349	368	390	188	176
1977	138,416	114,042	23,195	431	365	221	162
1978	138,802	114,217	23,025	377	998	7	178
1979	144,452	118,671	24,010	435	1,117	13	206
1980	145,162	119,103	24,127	481	1,230	32	189
1981	140,579	115,972	22,705	526	1,256	16	104
1982	137,950	113,868	22,270	488	1,224	17	83
1983	133,026	109,335	21,932	490	1,154	25	90
1984	135,782	110,418	23,005	780	1,462	46	71
1985	138,052	112,994	22,659	748	1,486	52	113
1986	137,626	111,115	24,078	753	1,571	58	51
1987	140,466	112,167	25,729	777	1,654	51	88
1988	139,635	110,982	26,034	766	1,732	58	63
1989	148,164	113,724	30,730	1,248	1,834	70	558

¹ Coding changes initiated in 1984 resulted in a net decrease of 0.7 and 0.1 percent of the infants coded to the races White and Black respectively. This change resulted in an increase in the number of infants coded to races other than White or Black in 1984.

² Persons of Spanish or of Mexican-American descent are included with White. Indians from India were counted as "White" from 1970-1977 and with "Other Asian or Pacific Islander" since 1978.

³ Includes Chinese, Japanese, Hawaiian, Filipino, and other Asian or Pacific Islander.

⁴ Includes Koreans for 1973-1977. Koreans are included in "Other Asian or Pacific Islander" for other years.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

black and 20.7 percent of the infants were black. Mothers of other races delivered 2.7 percent of the infants but 2.1 percent of the infants were of other races. These differences were due to births born to parents of different races in 1989.

Table 1.6 provides a comparison between crude birth rates and fertility rates for white and black persons in Michigan for the period since 1970. In 1970 the crude birth rate for black persons was 51.6 percent above that for white persons. By 1973, this percentage had increased to 70.0 percent. In 1974, the percent dropped sharply returning to 52.8, and by 1982 it had fallen to 20.0 percent. By 1989 the crude birth rate for black persons was 67.6

percent higher than the rate for white persons as the rate increased substantially for black persons.

Paralleling the trends in numbers of live births, the crude birth rates for both groups declined between 1970 and 1976. Between 1976 and 1980 the crude birth rate for white persons increased by 9.5 percent, while that for black persons remained essentially unchanged. By 1989 the crude birth rate for white persons declined by 3.3 percent, while the crude birth rate for black persons increased by 24.6 percent. The crude birth rate for white persons in 1989 was 21.2 percent below that observed in 1970 while the rate for

the black group was 12.9 percent below the rate for 1970.

The fertility rates contained in Table 1.6 reveal that there are important differences in population structure for white persons compared to that of black persons. By comparing live births to the respective numbers of women aged 15-44 for these two groups, the relative differences in rates for 1989 decrease. The fertility rate for black persons was 40.7

percent above the rate for white persons in 1970, fell to 10.8 percent higher in 1985 and increased to 49.1 percent higher in 1989. Since 1970 the fertility rate for black persons has declined 24.0 percent compared with a 28.4 percent drop for white persons.

The general pattern of crude live birth rates and fertility rates when presented by race of infant (Table 1.7), is quite similar to that described above based on race of mother.

Table 1.6
Crude Live Birth Rates and Fertility Rates by Race of Mother
Michigan Residents, 1970 - 1989

Crude Birth Rate		Year	Fertility Rate	
White	Black		White	Black
18.4	27.9	1970	87.9	123.5
17.0	27.1	1971	80.8	119.5
15.2	25.4	1972	71.2	111.0
14.5	24.5	1973	67.2	105.8
14.2	21.7	1974	64.7	92.8
13.9	21.1	1975	62.6	89.5
13.7	19.9	1976	60.8	83.4
14.4	20.3	1977	63.3	83.8
14.4	19.7	1978	62.5	80.4
14.9	20.0	1979	64.1	81.1
15.0	19.5	1980	64.2	78.3
14.7	17.9	1981	61.8	71.3
14.5	17.4	1982	60.5	68.6
14.1	17.0	1983	58.0	66.7
14.5	18.3	1984	61.7	71.6
14.7	17.9	1985	62.8	69.6
14.4	19.0	1986	61.4	73.5
14.4	20.3	1987	61.8	78.2
14.2	20.6	1988	61.1	79.2
14.5	24.3	1989	62.9	93.8
-21.2	-12.9	Percent Change 1970-1989	-28.4	-24.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.7
Crude Live Birth Rates and Fertility Rates by Race of Infant
Michigan Residents, 1970 - 1989

Crude Birth Rate		Year	Fertility Rate	
White	Black		White	Black
18.4	28.4	1970	88.0	125.6
17.0	27.6	1971	80.2	121.7
15.1	25.9	1972	70.6	112.9
14.5	24.9	1973	66.7	107.9
14.1	22.2	1974	64.5	94.8
13.8	21.6	1975	62.4	91.6
13.6	20.5	1976	60.7	85.5
14.4	20.8	1977	63.3	85.9
14.4	20.2	1978	62.6	82.5
14.9	20.6	1979	64.2	83.4
15.0	20.1	1980	63.9	80.7
15.2	18.5	1981	64.6	72.0
15.0	18.1	1982	63.9	69.9
14.6	17.7	1983	61.9	68.2
14.3	18.8	1984	61.0	73.7
14.6	18.5	1985	62.2	71.9
14.2	19.6	1986	60.8	75.8
14.3	20.9	1987	61.2	80.5
14.1	21.2	1988	60.5	81.8
14.4	25.0	1989	62.1	96.6
-21.7	-12.0	Percent Change 1970-1989	-29.4	-23.1

Source: Office of the State Registrar and Center for Health Statistics, MDPH

AGE OF MOTHER

In 1989, 39.8 percent of all live births were to women less than 25 years of age. Only 0.9 percent occurred to women 40 or more years of age. The median age of mothers was 26 years. Black mothers were younger (median 23 years) than white mothers (median 27 years). The median age for mothers of all other races was the same as the median age for white mothers.

Approximately 57.7 percent of the infants born to black women were born to women aged 24 or less compared to 35.2 percent of infants born to white women and 33.7 percent of infants born to women of all other races. This differential was the result of the relatively large percentage of infants born to black women at ages below 20 (26.1 percent) (Table 1.8). The live birth data by age of mother when presented by the infant's race are generally similar to results as described by the race of the mother (Table 1.9).

Information on the ancestry of a birth's mother was collected on the Michigan certifi-

cate of live birth for the first time in 1989. Since this item was a write-in item, numerous categories of ancestry were obtained. For purposes of reporting vital statistics data by ancestry, interest from academic, health and environmental professionals focused on five specific categories, some of which were aggregates of a number of more specific categories. These five categories included: African, American Indian, Arabian Asian, European and Hispanic. Specifically mentioned ancestry groups which could not be placed in one the these five groups were combined in the Other category.

The median age for mothers reporting African ancestry was 23 years, with mothers of American Indian and Hispanic ancestry both having a median age of 24 years (Table 1.10). Mothers of European and Arab Asian ancestry had median ages of 27 and 28 years, respectively, with mothers of all other ancestry groups having a median age of 25 years.

Table 1.8
Live Births and Percent Distribution by Age and Race of Mother
Michigan Residents, 1989

Age of Mother	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
< 15 Years	396	0.3	112	0.1	281	0.9	2	0.1	1	0.2
15-19 Years	19,149	12.9	11,263	9.8	7,530	25.2	275	10.9	81	13.2
20-24 Years	39,352	26.6	29,192	25.3	9,442	31.6	574	22.7	144	23.5
25-29 Years	47,853	32.3	39,992	34.7	6,861	23.0	819	32.4	181	29.5
30-34 Years	30,462	20.6	25,639	22.3	4,097	13.7	582	23.0	144	23.5
35-39 Years	9,571	6.5	7,899	6.9	1,379	4.6	234	9.3	59	9.6
40 + Years	1,265	0.9	1,014	0.9	211	0.7	36	1.4	4	0.7
Not Stated	116	0.1	75	0.1	38	0.1	3	0.1	-	-
Total	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0
Median Age at Last Birthday	26		27		23		27		27	

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.9
Live Births and Percent Distribution by Age of Mother and Race of Child
 Michigan Residents, 1989

Age of Mother in Years	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
< 15	396	0.3	112	0.1	281	0.9	2	0.1	1	0.2
15 - 19	19,149	12.9	11,062	9.7	7,650	24.9	359	11.4	78	14.0
20 - 24	39,352	26.6	28,732	25.3	9,735	31.7	754	23.9	131	23.5
25 - 29	47,853	32.3	39,603	34.8	7,096	23.1	992	31.5	162	29.0
30 - 34	30,462	20.6	25,362	22.3	4,253	13.8	719	22.8	128	22.9
35 - 39	9,571	6.5	7,781	6.8	1,461	4.8	275	8.7	54	9.7
40 +	1,265	0.9	998	0.9	216	0.7	47	1.5	4	0.7
Not Stated	116	0.1	74	0.1	38	0.1	4	0.1	-	-
Total	148,164	100.0	113,724	100.0	30,730	100.0	3,152	100.0	558	100.0
Median Age at Last Birthday	26		27		23		27		27	

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.10
Live Births and Percent Distribution by Age and Ancestry of Mother
 Michigan Residents, 1989

Age of Mother in Years	Total		African		American Indian		Arabian Asian		European		Hispanic		Other (Inc. American)		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Under 15	396	0.3	174	0.9	4	0.2	1	0.0	50	0.1	22	0.5	124	0.3	21	0.2
15 - 19	19,149	12.9	4,748	24.8	510	20.5	161	7.0	5,520	7.6	855	20.6	6,011	15.7	1,344	15.1
20 - 24	39,352	26.6	6,164	32.3	891	35.8	519	22.5	16,471	22.6	1,326	31.9	11,186	29.2	2,795	31.4
25 - 29	47,853	32.3	4,420	23.1	670	26.9	778	33.7	26,342	36.2	1,091	26.3	11,794	30.8	2,758	30.9
30 - 34	30,462	20.6	2,565	13.4	297	11.9	573	24.8	18,001	24.7	604	14.5	6,951	18.1	1,471	16.5
35 - 39	9,571	6.5	897	4.7	105	4.2	224	9.7	5,725	7.9	217	5.2	1,989	5.2	414	4.6
40 +	1,265	0.9	128	0.7	11	0.4	51	2.2	725	1.0	37	0.9	263	0.7	50	0.6
Not Stated	116	0.1	13	0.1	2	0.1	1	0.0	25	0.0	4	0.1	11	0.0	60	0.7
Total	148,164	100.0	19,109	100.0	2,490	100.0	2,308	100.0	72,859	100.0	4,156	100.0	38,329	100.0	8,913	100.0
Median Age at Last Birthday	26		23		24		28		27		24		25		25	

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Women under 25 years of age gave birth to 58.0 percent of the live births born to women of African ancestry. The percentages of live births to American Indian and Hispanic women 24 years of age or younger were 56.4 and 53.0 percent, respectively. For women of European ancestry, those under 25 years of age accounted for 30.3 percent of the live births. Twenty-nine and one-half (29.5) percent of the live births to women of Arab Asian ancestry were born to women 24 years of age or younger. Women under 25 years of age of all other ancestries, delivered 45.2 percent of the live births to women in this group. Six (6.0) percent of all live births were to mothers of unknown ancestry. Also, it appears that African ancestry may be considerably under reported on the live birth certificate.

The total number of live births increased by 2.6 percent between 1979 and 1989 (Table 1.11) while the number of women of child bearing age (15 to 44 years of age) increased by 0.3 percent.

The largest relative decrease in the number of live births occurred to women 20 to 24 years of age. There was a 23.3 percent decrease in the number of births to these

women while there was a 17.4 percent decrease in the number of women 20 to 24 years of age. For the age group under age 20 the percent decrease in the number of births (9.5 percent) was less than the percent decrease (22.9 percent) in the number of women.

The number of live births to women 25-29 was 3.8 percent higher in 1989 than in 1979, while there was a 52.6 and 102.8 percent increase in the number of live births to women 30-34 years and 35-39 years of age respectively over the decade. There was a 67.3 percent increase in the number of live births to women 40 years of age or older. Although there were increases in the number of women in these age groups, the percent increase in the numbers of women were lower for the age groups over age 29 than the percent increase in the numbers of births.

Table 1.11 also provides the age distribution of the childbearing population in 1979 and 1989. The largest relative increase in population occurred in the age group 40 years and over. The only groups to experience a population decline were those under 25 years of age.

Table 1.11
Live Births and Population of Women by Age
Michigan Residents, 1979 and 1989

Age Group	Live Births			Population Estimates		
	1979	1989	Percent Change	1979	1989	Percent Change
Under 20 Years ¹	21,594	19,545	-9.5	454,775	350,609	-22.9
20 - 24 Years	51,319	39,352	-23.3	450,348	372,200	-17.4
25 - 29 Years	46,084	47,853	+3.8	400,912	391,329	-2.4
30 - 34 Years	19,962	30,462	+52.6	350,251	389,552	+11.2
35 - 39 Years	4,720	9,571	+102.8	280,914	362,311	+29.0
40 and Over ²	756	1,265	+67.3	236,786	315,526	+33.3
All Ages ³	144,452	148,164	+2.6	2,173,986	2,181,527	+0.3

¹ Population shown is for females 15 - 19.

² Population shown is for females 40 - 44.

³ Population shown is for females 15 - 44. Live births with age not stated are included only in the total.

AGE-SPECIFIC LIVE BIRTH RATES

As displayed in Table 1.12, an increase in the total live birth fertility rate for Michigan females of 2.3 percent has occurred since 1979. The greatest relative decrease in age-specific live birth rates between 1979 and 1989 was 57.1 percent for women 35 to 39 years of age. The live birth rate for women 20 to 24 years old in 1989 was 7.3 percent below the rate for this age group in 1979.

Figure 1.4 displays age-specific live birth rates for the period 1970-1989. Live birth rates in all age groups dropped between 1970 and 1976. For women under 20 years the rate continued to decline throughout the years 1976-1983 reaching a low of 38.6 in 1983. The rate increased after 1983 to 55.7 in 1989.

After declining between 1970 and 1976, the live birth rates for women between 20 and 29 years of age remained stable until 1980. The rates for women in the age groups 20-24 decreased through 1983, increased in 1984, then after a decline to a low of 99.2 live births per 1,000 women in 1988, increased 3.8 percent to 103.0 in 1989.

The rates for women 25-29 declined between 1970 and 1976 then generally increased through 1980. The rates decreased between 1980 and 1983. Rates for this group have generally increased since 1983.

For women in the age groups 30-34 and 35-39 live birth rates decreased between 1970 and 1976 then increased by 62.5 and 51.7 percent, respectively by 1989.

In 1970, women aged 20-24 had the highest live birth rate of any age group, 14.3 percent higher than that of women aged 25-29. In 1978 through 1989 the live birth rate of women in the 25-29 year age group was above that of women aged 20-24 (Table 4.4). In 1989, the rate of 122.3 for women 25-29 was 18.7 percent higher than the rate for women 20-24 years of age.

Table 1.12 displays age-specific live birth rates for white and black women and women of all other races for the years 1979 and 1989. Generally, rates for black women under age 25 and over age 34 were above those for white

Table 1.12
Age-Specific Live Birth Rates by Race of Mother
Michigan Residents, 1979 and 1989

Age Group in Years	Race of Mother											
	Total			White			Black			All Other		
	1979	1989	Percent Change in Rate	1979	1989	Percent Change in Rate	1979	1989	Percent Change in Rate	1979	1989	Percent Change in Rate
Under 20 ²	47.5	55.7	+17.3	39.4	39.5	+0.3	98.9	135.6	+37.1	30.4	54.2	+78.3
20 - 24	114.0	105.7	-7.3	111.0	94.3	-15.0	134.3	163.4	+21.7	71.6	121.5	+69.7
25 - 29	114.9	122.3	+6.4	117.6	121.7	+3.5	97.7	118.7	+21.5	112.6	163.3	+45.0
30 - 34	57.0	78.2	+37.2	56.8	78.1	+37.5	54.6	73.8	+35.2	77.5	99.3	+28.1
35 - 39	16.8	26.4	+57.1	15.8	25.7	+62.7	22.5	28.0	+24.4	29.0	38.9	+34.1
40 or More ³	3.2	4.0	+25.0	3.0	3.7	+23.3	4.3	5.3	+23.3	3.6	7.2	+100.0
Total ⁴	66.4	67.9	+2.3	64.1	62.9	-1.9	81.1	93.8	+15.7	60.7	79.6	+31.1

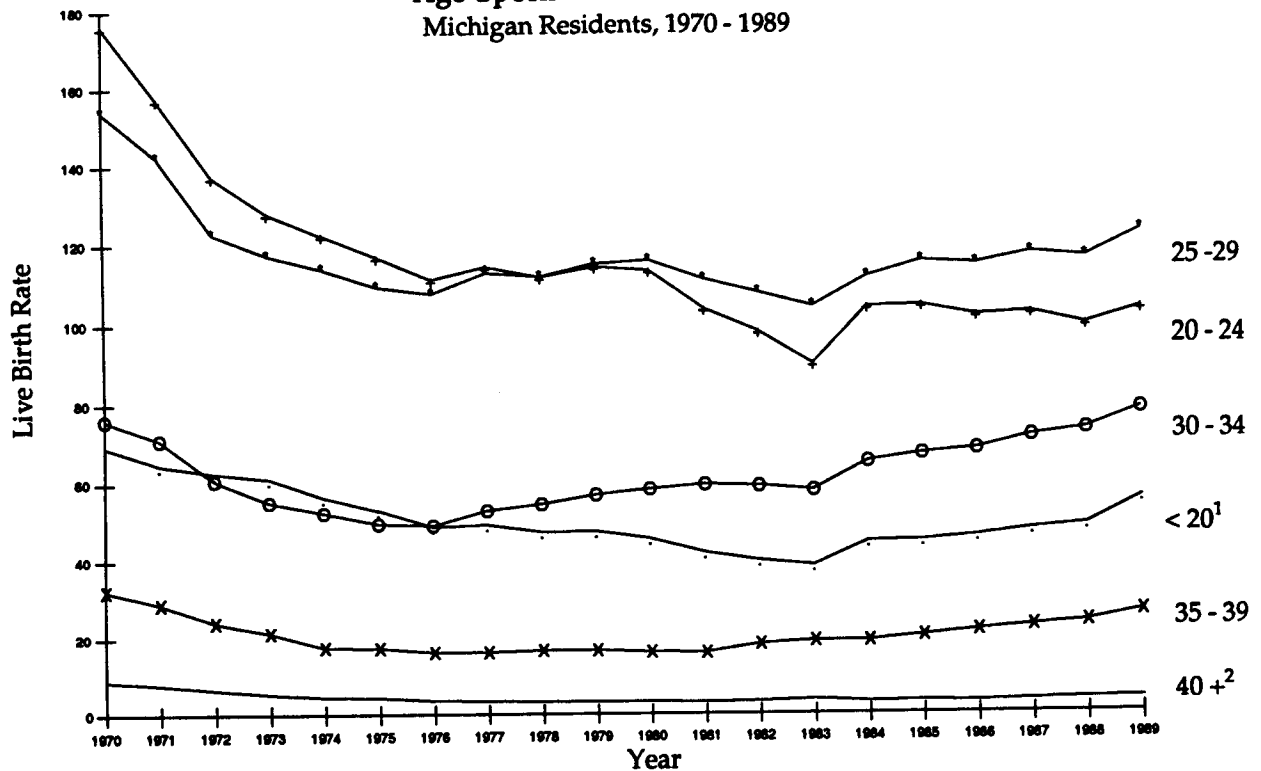
¹ Data on race not stated are included only in the total columns.

² Age-specific birth rates for under 20 are based on female population 15-19.

³ Age-specific birth rates for 40 and over are based on female population 40-44.

⁴ Total birth rates (fertility rates) are based on female population 15-44.

Figure 1.4
Age-Specific Live Birth Rates
Michigan Residents, 1970 - 1989



¹ Based on live births to women under 20 and population of females 15-19.

² Based on live births to women 40 and over and population of females 40-44.

women in both years. However, the live birth rate for white women between 25 and 29 years exceeded that for black women by 20.3 and 2.5 percent, respectively, in 1979 and 1989. In 1979 and 1989 the rate for white women between 30 and 34 years also exceeded that for their black counterparts by 4.0 and 5.8 percent, respectively.

In 1979 the live birth rates for all other women between 25 and 39 years of age were higher than the rates for black women of the same ages. In the same year, the rates for all other women over 29 years of age were higher than the rates for white women of the same age. For women under 30 years of age, however, live birth rates for all other women were lower than those for white women. When compared to black women, women of all other races under 25 years of age and over

39 years of age had lower live birth rates in 1979. In 1989, women of all other races at each age category had higher live birth rates than white women. In the same year, women of all other races over 24 years of age had rates higher than black women while all other race women had lower rates than black women for ages 24 years and younger.

In 1979 the live birth rate for black women age 15 to 44 (81.1) was 26.5 percent higher than the rate for white women (64.1). By 1989 the difference between the rates was considerably greater. The rate for black women was 49.1 percent higher than the rate for white women. During the ten years the rate for black females increased by 15.7 percent while the rate for white females declined by 1.9 percent.

The rates for black females increased for all age groups, while rates for white females decreased for ages 20 to 24. For teenagers the birth rates increase 0.3 percent for white mothers and 37.1 percent for black mothers. For ages 20 to 24 years the rates increased 21.7 for black females but decreased 15.0 percent for white females. The rates increased less for black females between 30 and 39 years of age than for their white counterparts. For ages 40 or over the rates increased for both black and white females. The rates for all other women rose overall and for each age group during the ten years.

In Table 1.13 live birth rates are presented by race of infant rather than the race of the mother. While individual differences appear for age groups when compared to the rates based on mother's race, overall changes for blacks and whites between 1979 and 1989 are reasonably similar for the two methods of presentation. A considerable difference, however is noted for the all other race category. Based on the race of the mother, the overall live birth rate for women of all other races increased by 31.1 percent, but the live birth rate for mothers of infants of all other races increased by 69.9 percent.

Table 1.13
Age-Specific Live Birth Rates by Race of Infant
Michigan Residents, 1979 and 1989

Age Group in Years	Race ¹ of Child											
	Total			White			Black			All Other ¹		
	1979	1989	Percent Change in Rate	1979	1989	Percent Change in Rate	1979	1989	Percent Change in Rate	1979	1989	Percent Change in Rate
Under 20 ²	47.5	55.7	+17.3	39.1	38.8	-0.8	100.2	137.7	+37.4	37.0	70.6	+190.8
20 - 24	114.0	105.7	-7.3	110.2	92.8	-15.8	138.5	168.4	+21.6	81.0	159.5	+96.9
25 - 29	114.9	122.3	+6.4	117.2	120.6	+2.9	100.9	122.7	+21.6	103.1	197.8	+91.9
30 - 34	57.0	78.2	+37.2	56.7	77.3	+36.3	56.8	76.6	+34.9	65.4	122.6	+87.5
35 - 39	16.8	26.4	+57.1	15.7	25.3	+61.1	23.3	29.7	+27.5	25.6	45.7	+78.5
40 or More ³	3.2	4.0	+25.0	3.0	3.7	+23.3	4.6	5.4	+17.4	4.3	9.4	+118.6
Total ⁴	66.4	67.9	+2.3	63.8	62.1	-2.7	83.4	96.6	+15.8	58.5	99.4	+69.9

¹ Data on race not stated are included only in the total columns.

² Age-specific birth rates for under 20 are based on female population 15-19.

³ Age-specific birth rates for 40 and over are based on female population 40-44.

⁴ Total birth rates (fertility rates) are based on female population 15-44.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

BIRTH ORDER

The percent of live births which were first-order births is displayed in Figure 1.5 and Table 1.14 for Michigan and the United States for the period since 1960. Between 1960 and 1970, the percent of first-order births increased from 22.9 to 37.4 in Michigan and by 1980 the percent peaked at 42.4. Then the percentage steadily decreased to 40.1 in 1985. In 1989, 39.9 percent of live births were first-order births, the lowest proportion since 1972.

The actual number of first births declined by 15.9 percent between 1970 and 1976, increased between 1976 and 1980 by 13.9 percent and decreased by 11.8 percent between 1980 and 1983. By 1989 the number of first births increased by 9.0 percent. The trend in first births is similar for the United States.

Figure 1.5
First Births as a Percentage of All Live Births
 Michigan Residents, 1960 - 1989 and United States Residents, 1960 - 1988

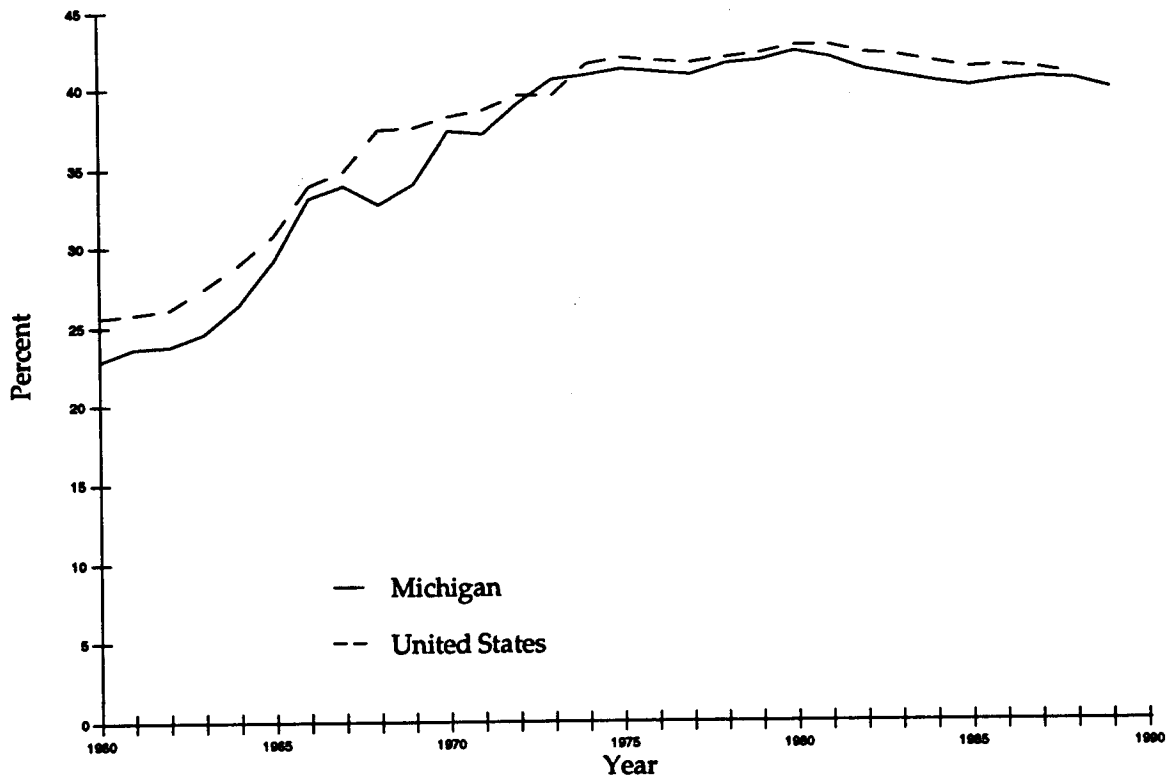


Table 1.14
First Births
Michigan and United States Residents
 Selected Years, 1960 - 1989

United States		Year	Michigan	
First Births	Percent of All Births		First Births	Percent of All Births
1,090,152	25.6	1960	44,711	22.9
1,157,386	30.8	1965	48,660	29.2
1,430,680	38.3	1970	64,222	37.4
1,375,668	38.7	1971	60,413	37.2
1,289,257	39.6	1972	57,477	39.1
1,243,358	39.6	1973	57,411	40.6
1,314,194	41.6	1974	56,233	40.9
1,319,126	42.0	1975	55,348	41.3
1,324,811	41.8	1976	54,003	41.1
1,387,143	41.7	1977	56,622	40.9
1,401,491	42.0	1978	57,767	41.6
1,479,260	42.3	1979	60,424	41.8
1,545,604	42.8	1980	61,516	42.4
1,553,665	42.8	1981	59,105	42.0
1,555,627	42.3	1982	56,879	41.2
1,530,639	42.1	1983	54,271	40.8
1,529,905	41.7	1984	54,907	40.4
1,554,788	41.3	1985	55,373	40.1
1,553,751	41.4	1986	55,615	40.4
1,567,678	41.2	1987	56,971	40.6
1,595,587	40.8	1988	56,561	40.5
—	—	1989	59,157	39.9

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The distribution of Michigan resident live births by live birth order is displayed in Tables 1.15 and 1.16 for the years 1979 and 1989. The distributions of births by birth order were similar in 1979 and 1989. Of the births where birth order was known, first- and second-order live births comprised 74.1 percent of all live births in 1979 and 72.3 percent in 1989. On the other hand, 5.6 percent of all live births in 1979 were fourth order live births. In 1989 the figure was 6.3 percent. The proportion of fifth or higher order live births decreased slightly between 1979 and 1989. These constituted 3.7 percent of all live births in 1979 compared to 3.6 percent in 1989.

Between 1979 and 1989 there were some slight changes in the distribution of births by birth order for women under 25 years of age. For women under age 20, the number of first-order births decreased from 80.2 percent to 76.8 percent. Second-order births for this group of women increased from 16.9 percent to 18.7 percent and third and higher order births increased from 2.5 to 4.0 percent. For births to women 20 to 24 years of age 48.2 percent were first-order births in 1979 and 46.6 percent were first-order births in 1989. The percentages of second-order births were 35.7 and 33.8 percent while about 15.3 and 18.7 percent were third- or higher-order births in 1979 and 1989, respectively.

The percent of first order births increased for women 25 years or over between 1979 and 1989. In 1979 31.0 percent of the births to women 25-29 years of age were first order births. By 1989 the percent of first order births had risen to 34.8 percent. For women 30 to 39 years of age the percent of first-order births rose from 16.3 percent in 1979 to 22.2 percent in 1989. For births to women 40 or over the percentages of first-order births were 7.0 and 15.6 percent, respectively, in 1979 and 1989.

The percent of second order births born to women 25-29 years of age declined slightly between 1979 and 1989 from 37.4 to 36.0 percent. The percent of these births born to women over 29 years of age increased from 29.5 percent to 33.6 percent for women age 30-39 and from 9.7 to 21.2 percent for women over 40 years of age.

Between 1979 and 1989 the percent of third- or higher-order births decreased for women 25-29 years of age from 30.4 percent to 28.1 percent. The largest changes occurred for women ages 30 and over. The proportions for woman 30 to 39 years of age decreased from 52.9 to 42.9 percent. The decrease for women

Table 1.15
Live Births by Live Birth Order and Age of Mother
Michigan Residents, 1979

Live Birth Order	Age of Mother						All Ages	Median Age at Last Birthday
	Under 20	20 - 24 Years	25 - 29 Years	30 - 39 Years	40 or More Years	Not Stated		
First Birth	17,318	24,713	14,305	4,026	53	9	60,424	22
Second Birth	3,656	18,345	17,234	7,286	73	1	46,595	25
Third Birth	479	6,099	9,477	6,520	91	4	22,670	27
Fourth Birth	47	1,376	3,121	3,445	130	-	8,119	29
Fifth Birth + Not Stated	14	391	1,414	3,080	396	1	5,296	32
	80	395	533	325	13	2	1,348	26
All Birth Orders	21,594	51,319	46,084	24,682	756	17	144,452	24

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.16
Live Births by Live Birth Order and Age of Mother
Michigan Residents, 1989

Live Birth Order	Age of Mother						All Ages	Median Age at Last Birthday
	Under 20	20 - 24 Years	25 - 29 Years	30 - 39 Years	40 or More Years	Not Stated		
First Birth	15,005	18,341	16,676	8,884	197	54	59,157	23
Second Birth	3,652	13,303	17,233	13,466	268	28	47,950	27
Third Birth	662	5,417	8,873	9,655	260	13	24,880	28
Fourth Birth	93	1,476	3,198	4,345	194	5	9,311	29
Fifth Birth + Not Stated	18	474	1,396	3,159	321	6	5,374	32
	115	341	477	524	25	10	1,492	28
All Birth Orders	19,545	39,352	47,853	40,033	1,265	116	148,164	26

Source: Office of the State Registrar and Center for Health Statistics, MDPH

ages 40 and above was from 81.6 to 61.3 percent.

The median age of mothers having their first child increased from 22 to 23 between 1979 and 1989. For mothers having their second child, the median age also increased from 25 to 27. The median ages for mothers increased by one year for mothers having their third child and showed no change for birth order above the third between 1979 and 1989.

First births to women 25 years of age or older comprised 30.4 percent of all first births in 1979 and 43.5 percent in 1989. Similarly, second order births to women 25 years or older increased from 52.8 percent of second order births in 1979 to 64.6 percent in 1989. This change in mother's age at birth was reflective of the overall emergence of higher birth rates in the age groups 30 years of age and above for 1989 and a corresponding decrease in the birth rate for the 20-24 year age group (Tables 1.15 and 1.16).

INTERPREGNANCY TIME PERIOD

The distributions of live births by interpregnancy time period were similar in 1979 and 1989. In both years fewer than 5 percent of the births occurred less than a year after the termination of the most recent prior pregnancy (Table 1.17). Another 31.0 and 32.0 percent of the births were to women with prior deliveries occurring one to two years after the most recent pregnancy termination. About 24 percent of the births had spacings of two to three years. A slightly lower percentage of births had a spacing of 3 to 5 years in 1989 (22.2 percent) than in 1979 (23.2 percent). In both years 17.9 percent of the births were to women five or more years after the termination of their most recent prior pregnancy.

In 1989 women having live births whose most recent prior termination was a fetal death had a median time span of 1 year and 10 months between their previous termination and a live birth (Table 1.18). This compares to a median of 2 years 8 months for prior live births. Although 1 to 2 years was the modal time span for both groups, the percent of women with prior fetal deaths in this interval (41.4) was much larger than that for women with prior live births (28.7). The greatest relative difference was associated with time spans of less than one year. A spacing of less than one year was observed for 10.9 percent of all women reporting their most recent prior pregnancy as a fetal death. This compares to 1.8 percent of all women reporting their most recent prior pregnancy as a live birth.

Table 1.17

Live Births to Women Reporting Prior Pregnancy Terminations¹ by Time Span Between Last and Current Termination Michigan Residents, 1979 and 1989²

Time Span in Years	1979		1989	
	Number	Percent	Number	Percent
Total	85,971	100.0	86,894	100.0
< One	3,025	3.5	3,641	4.2
1 < 2	26,669	31.0	27,797	32.0
2 < 3	20,900	24.3	20,564	23.7
3 < 5	19,958	23.2	19,304	22.2
5 or More	15,419	17.9	15,588	17.9
Median Time Span	2 Years 7 Months		2 Years 6 Months	

¹ Terminations with time spans of zero years (i.e., second or later births in plural deliveries) and terminations with unknown time spans are excluded.

² The methodology for calculating interpregnancy time span was altered slightly in 1984. Hence, median time spans and percentages are not comparable to statistics published in prior years.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.18

Live Births to Women Reporting Prior Pregnancy Terminations¹ by Time Span Between Last and Current Termination and by Whether Prior Termination Resulted in a Live Birth or a Fetal Death² Michigan Residents, 1989³

Time Span In Years	Total		Prior Fetal Death		Prior Live Birth	
	Number	%	Number	%	Number	%
Total	86,894	100.0	22,849	100.0	64,045	100.0
< One	3,641	4.2	2,500	10.9	1,141	1.8
1 < 2	27,797	32.0	9,389	41.1	18,408	28.7
2 < 3	20,564	23.7	3,742	16.4	16,822	26.3
3 < 5	19,304	22.2	3,293	14.4	16,011	25.0
5 +	15,588	17.9	3,925	17.2	11,663	18.2
Median Time Span	2 Years 6 Months		1 Year 10 Months		2 Years 8 Months	

¹ Terminations with time spans of zero years (i.e., second or later births in plural deliveries) and terminations with unknown time spans are excluded.

² Fetal death as defined for the pregnancy history on the birth record is a fetal death of any gestational age.

³ The methodology for calculating interpregnancy time span was altered slightly in 1984. Hence, median time spans and percentages are not comparable to statistics published in prior years.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

PRENATAL CARE

The most common month of pregnancy in which women first obtain prenatal care was the second month. In 1989 40.0 percent of all women having live births initiated care during the second month. The median number of prenatal visits was 12, and 61.2 percent of all live births were to women receiving 10-14 prenatal visits. Table 1.19 indicates the relationship between the month of pregnancy prenatal care began and the number of prenatal visits. For births in which the mother began receiving care in the first month, the median number of visits was 13. The median number of visits was lower for women where prenatal care began later in the pregnancy.

The proportion of live births to women who initially obtained prenatal care in the first trimester of pregnancy was 78.0 percent in

1989. This percent increased steadily between 1970, when the figure was 69.0, and 1985 when it peaked at 81.0 (Figure 1.6). It fluctuated between 78.0 and 80.0 after 1985.

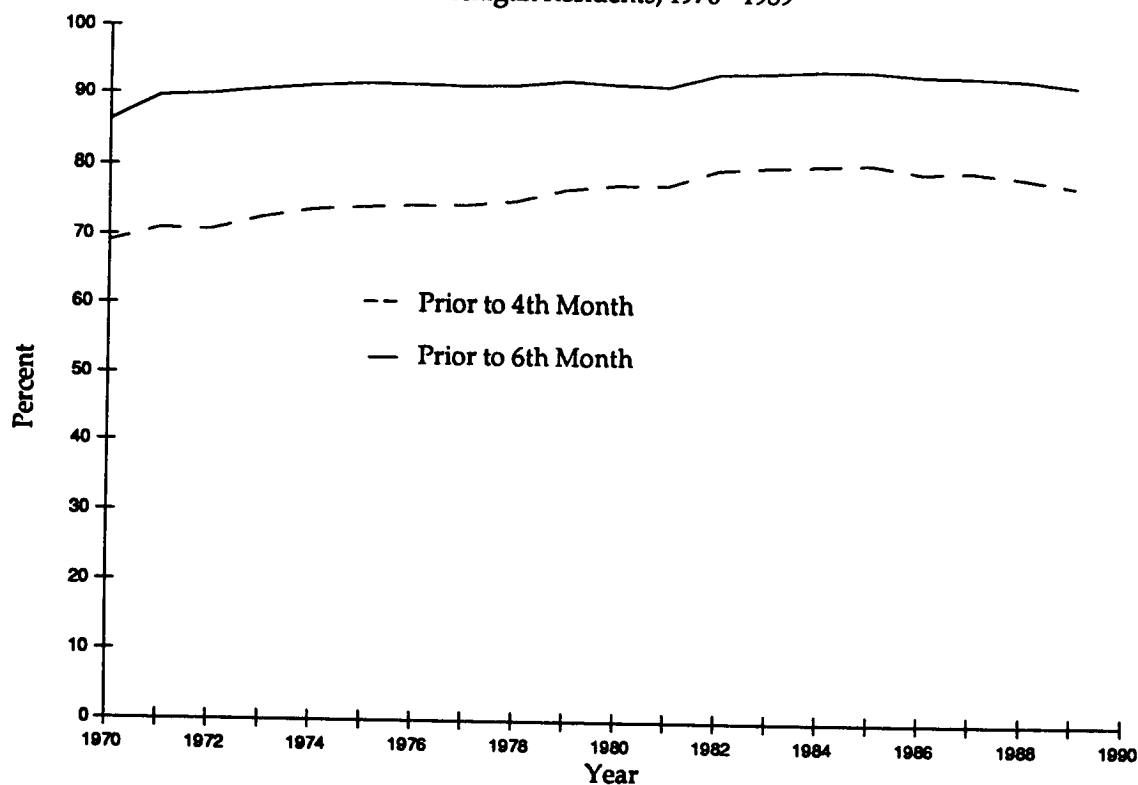
There were also small but steady increases in the percentage of births to women receiving care prior to the sixth month of pregnancy over the period 1970-1975. In 1970, 86.0 percent of all live births were to women who received care prior to the sixth month of pregnancy. By 1975, this had risen to 91.6 percent. The figure remained at that level through 1981. By 1985 the percent of all women who received care before the sixth month was 93.9 percent. The percentage decreased for the next four years to 91.8 in 1989.

Table 1.19
Live Births by Month Prenatal Care Began and Number of Prenatal Visits
Michigan Residents, 1989

Month Care Began	Number of Visits								Median Number of Visits
	Total	None	1 - 4	5 - 9	10 - 14	15 - 19	20 or More	Un-Known	
Total	148,164	2,549	3,739	25,388	90,606	17,606	4,406	3,870	12
First	24,171	-	193	1,373	13,869	6,819	1,453	464	13
Second	59,338	-	381	5,323	43,526	7,307	1,884	917	12
Third	32,092	-	360	6,102	21,931	2,422	696	581	11
Fourth	13,288	-	328	4,656	7,109	656	240	299	10
Fifth	7,128	-	381	3,682	2,631	200	70	164	9
Sixth	3,995	-	493	2,410	898	84	18	92	8
Seventh	2,170	-	626	1,235	218	20	8	63	6
Eighth	1,097	-	606	398	43	6	11	33	4
Ninth	257	-	180	33	20	2	-	22	2
No Care	2,549	2,549	-	-	-	-	-	-	-
Unknown	2,079	-	191	176	361	90	26	1,235	10

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 1.6
 Percent of Women Having Live Births Who Received Care
 Prior to the 4th Month and 6th Month of Pregnancy
 Michigan Residents, 1970 - 1989



The proportion of births to women receiving early prenatal care varied considerably by race and age of mother (Table 1.20). In 1989, 82.0 percent of infants born to white women compared to 63.2 percent of the infants born to black women were born to mothers who began their prenatal care in the first trimester. Over 84 percent of live births to women 25 to 39 years of age were to women who sought care promptly. The proportion of births to women receiving early prenatal care declined with maternal ages less than and greater than 30-34 years of age. The proportion fell to 79.5 percent for women 40 years or over and 39.9 percent for women under 15 years. About six

in ten (57.0 percent) live births to mothers 15-19 years of age were to mothers who received care early. Similar patterns in this proportion by age of mother are evident for white, black and all other mothers. However, the highest levels of proportions for black mothers were between 66.8 and 72.8 for mothers over twenty-four while the rates were between 82.6 and 89.3 for white mothers who were over twenty-four years of age. The proportion of births to women receiving early prenatal care when presented by age of the mother and race of the infant (Table 1.21) are quite similar to the proportions when presented by age and race of the mother.

Table 1.20
**Numbers and Percents of Live Births with Prenatal Care
 Beginning in the First Trimester by Age and Race of Mother**
 Michigan Residents, 1989

Age of Mother in Years	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹
Under 15	158	39.9	48	42.9	109	38.8	1	50.0	-	-
15 - 19	10,913	57.0	6,788	60.3	3,950	52.5	151	54.9	24	29.6
20 - 24	28,557	72.6	22,193	76.0	5,921	62.7	363	63.2	80	55.6
25 - 29	40,288	84.2	34,748	86.9	4,761	69.4	636	77.7	143	79.0
30 - 34	26,484	86.9	22,906	89.3	2,983	72.8	481	82.6	114	79.2
35 - 39	8,118	84.8	6,914	87.5	977	70.8	178	76.1	49	83.1
40 or More	1,006	79.5	838	82.6	141	66.8	27	75.0	-	-
Not Stated	77	66.4	49	65.3	26	68.4	2	66.7	-	-
Total	115,601	78.0	94,484	82.0	18,868	63.2	1,839	72.8	410	66.8

¹ Percent denominators obtained from Table 1.8.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.21
**Numbers and Percents of Live Births with Prenatal Care
 Beginning in the First Trimester by Age of Mother and Race of Child**
 Michigan Residents, 1989

Age of Mother in Years	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹	Number	Percent ¹
Under 15	158	39.9	48	42.9	109	38.8	1	50.0	-	-
15 - 19	10,913	57.0	6,675	60.3	4,022	52.6	193	53.8	23	29.5
20 - 24	28,557	72.6	21,860	76.1	6,134	63.0	494	65.5	69	52.7
25 - 29	40,288	84.2	34,443	87.0	4,936	69.6	783	78.9	126	77.8
30 - 34	26,484	86.9	22,668	89.4	3,114	73.2	602	83.7	100	78.1
35 - 39	8,118	84.8	6,814	87.6	1,048	71.7	212	77.1	44	81.5
40 or More	1,006	79.5	827	82.9	145	67.1	34	72.3	-	-
Not Stated	77	66.4	48	64.9	26	68.4	3	75.0	-	-
Total	115,601	78.0	93,383	82.1	19,534	63.6	2,322	73.7	362	64.9

¹ Percent denominators obtained from Table 1.9.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The proportion of live births to women receiving early prenatal care also varied by ancestry and age of the mother (Table 1.22). In 1989, 64.4 and 66.3 percent, respectively, of live births to women of African and Hispanic ancestry received prenatal care beginning in the first trimester, while 71.0 percent of live births to American Indian women received prompt care. Early prenatal care was received by 84.2 and 82.7 percent, respectively, of European and Arab Asian ancestry

women with a live birth in 1989. Generally the highest percentage of live births with early prenatal care occurred among women 30 to 34 years of age. By a slight margin, Arab Asian women of age 25 to 29 had a greater percentage of live births receiving prompt prenatal care than any other age. Women younger and older than these ages showed decreasing proportions of live births receiving early prenatal care.

The month prenatal care began varied with live birth order (Table 1.23). The proportion of live births to women who began care during the first trimester was highest for second order live births (81.0 percent) and lowest for fifth or higher order births (61.5

percent). Conversely, the proportion of births to women who began care during the third trimester, or received no care, was lowest (3.3 percent) for second order live births. This figure generally increased with the number of previous live births. Among fifth order live

Table 1.22
Numbers and Percents¹ of Live Births with Prenatal Care Beginning in the First Trimester by Age and Ancestry of Mother Michigan Residents, 1989

Age of Mother in Years	Total		African		American Indian		Arabian Asian		European		Hispanic		Other (Incl. American)		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Under 15	158	39.9	63	36.2	2	50.0	-	-	18	36.0	7	31.8	61	49.2	7	33.3
15 - 19	10,913	57.0	2,523	53.1	286	56.1	117	72.7	3,375	61.1	447	52.9	3,400	56.6	765	56.9
20 - 24	28,557	72.6	3,915	63.5	621	69.7	401	77.3	12,815	77.8	819	61.8	7,980	71.3	2,006	71.8
25 - 29	40,288	84.2	3,132	70.9	523	78.1	668	85.9	23,220	88.1	813	74.5	9,685	82.1	2,247	81.5
30 - 34	26,484	86.9	1,917	74.7	247	83.2	489	85.3	16,239	90.2	480	79.5	5,866	84.4	1,246	84.7
35 - 39	8,118	84.8	663	73.9	77	73.3	191	85.3	5,067	88.5	163	75.1	1,619	81.4	338	81.6
40 or More	1,006	79.5	88	68.8	9	81.8	41	80.4	605	83.4	25	67.6	205	77.9	33	66.0
Not Stated	77	66.4	9	69.2	2	100.0	1	100.0	17	68.0	3	75.0	7	63.6	38	63.3
Total	115,601	78.0	12,310	64.4	1,767	71.0	1,908	82.7	61,356	84.2	2,757	66.3	28,823	75.2	6,680	74.9

¹ Percent denominators obtained from Table 1.10.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.23
Live Births by Month of Pregnancy Prenatal Care Began and Live Birth Order Michigan Residents, 1989

Month of Pregnancy Care Began	Live Birth Order						
	Total	First	Second	Third	Fourth	Fifth or Greater	Not Stated
1st Month	24,171	9,814	8,606	3,678	1,266	600	207
2nd Month	59,338	23,878	20,038	10,019	3,344	1,525	534
3rd Month	32,092	12,659	10,181	5,657	2,101	1,180	314
4th Month	13,288	5,337	3,907	2,270	1,007	652	115
5th Month	7,128	2,906	1,979	1,180	555	431	77
6th Month	3,995	1,637	1,099	669	294	251	45
7th Month	2,170	840	584	358	203	159	26
8th Month	1,097	412	319	192	83	82	9
9th Month	257	98	72	40	27	16	4
No Care	2,549	818	612	453	281	345	40
Not Stated	2,079	758	553	364	150	133	121
Total	148,164	59,157	47,950	24,880	9,311	5,374	1,492
Percentage Beginning Care in First Trimester	78.0	78.4	81.0	77.8	72.1	61.5	70.7
Percentage Without Care During First Six Months	4.1	3.7	3.3	4.2	6.4	11.2	5.3

Source: Office of the State Registrar and Center for Health Statistics, MDPH

births 11.2 percent were to women who had received no care by the beginning of the 7th month of the pregnancy.

The proportion of live births to mothers having ten or more prenatal visits was 76.0 percent in 1989 compared to 70.3 percent in 1980 (Table 1.24). This statistic varied considerably by race. While 78.9 percent of infants of white mothers had at least ten prenatal visits, the percentages were only 66.0 and 69.8 for infants of black and all other mothers, respectively. The median number of prenatal visits was 12 for mothers of all races. The mean number of prenatal visits was 11.8 for white mothers, 10.6 for black mothers and 11.0 for mothers of all other races.

When presented by race of the child (Table 1.25), there are only a few notable differences in the racial data for number of prenatal visits. The mean number of prenatal visits for mothers of black infants is 11.3 rather than 10.6 for black mothers. The mean number of prenatal visits for mothers of infants of all other races is 11.5, whereas the mean for

mothers of all other races is 11.0 prenatal visits.

In 1989, 2,549 resident live births, or 17.2 of every 1,000, occurred with the mother having had no prenatal care (Table 1.26). This figure includes only those where it was specified that the mother received no prenatal care. The comparative statistics were 6.3 in 1985 and 11.8 in 1971. In 1988, 11.8 of every 1,000 live births were born to mothers who had no prenatal care.

Those who received no prenatal care were for the most part younger mothers (median age of 23). Also, the lack of prenatal care was disproportionately high among black mothers. The ratio of live births in which the mother received no prenatal care to the total number of live births was 6.4 times greater for black mothers than for white mothers in 1989. The ratio was 3.6 times higher for black mothers than for mothers of all other races. No major differences in the distribution of the number of live births with no prenatal care are apparent when no prenatal care is tabulated

Table 1.24
Live Births and Percent Distribution by Number of the Mother's Prenatal Visits
and Race of Mother
Michigan Residents, 1989

Number of Prenatal Visits	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	2,549	1.7	930	0.8	1,554	5.2	36	1.4	29	4.7
1 - 4	3,739	2.5	2,021	1.8	1,593	5.3	104	4.1	21	3.4
5 - 9	25,389	17.1	18,775	16.3	5,966	20.0	561	22.2	87	14.2
10 - 14	90,606	61.2	73,779	64.1	15,115	50.7	1,430	56.6	282	45.9
15 - 19	17,606	11.9	13,448	11.7	3,818	12.8	272	10.8	68	11.1
20 or Over	4,406	3.0	3,562	3.1	756	2.5	60	2.4	28	4.6
Not Stated	3,869	2.6	2,671	2.3	1,037	3.5	62	2.5	99	16.1
Total	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0
Median Number of Visits	12		12		11		12		12	
Mean Number of Visits	11.8		11.8		10.6		11.0		11.1	

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.25
Live Births and Percent Distribution by Number of the Mother's Prenatal Visits and Race of Child
 Michigan Residents, 1989

Number of Prenatal Visits	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	2,549	1.7	914	0.8	1,569	5.1	40	1.3	26	4.7
1 - 4	3,739	2.5	1,990	1.7	1,614	5.3	115	3.6	20	3.6
5 - 9	25,389	17.1	18,465	16.2	6,159	20.0	688	21.8	77	13.8
10 - 14	90,606	61.2	72,931	64.1	15,621	50.8	1,805	57.3	249	44.6
15 - 19	17,606	11.9	13,271	11.7	3,928	12.8	344	10.9	63	11.3
20 or Over	4,406	3.0	3,510	3.1	787	2.6	84	2.7	25	4.5
Not Stated	3,869	2.6	2,643	2.3	1,052	3.4	76	2.4	98	17.6
Total	148,164	100.0	113,724	100.0	30,730	100.0	3,152	100.0	558	100.0
Median Number of Visits	12		12		11		12		12	
Mean Number of Visits	11.8		11.8		11.3		11.5		11.5	

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.26
Live Births with No Prenatal Care by Age and Race of Mother
 Michigan Residents, 1989

Age of Mother in Years	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ¹	Number	Ratio ¹	Number	Ratio ¹	Number	Ratio ¹	Number	Ratio ¹
Under 15	30	75.8	4	35.7	26	92.5	-	-	-	-
15 - 19	606	31.6	200	17.8	392	52.1	7	25.5	7	86.4
20 - 24	862	21.9	341	11.7	498	52.7	11	19.2	12	83.3
25 - 29	580	12.1	215	5.4	351	51.2	9	11.0	5	27.6
30 - 39	444	11.1	159	4.7	273	49.9	8	9.8	4	19.7
40 or More	23	18.2	9	8.9	12	56.9	1	27.8	1	250.0
Not Stated	4	34.5	2	26.7	2	52.6	-	-	-	-
Total	2,549	17.2	930	8.1	1,554	52.1	36	14.3	29	47.2
Median Age at Last Birthday	23		23		23		25		23	

¹ Ratio denominators obtained from Table 1.8.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

by the race of the child (Table 1.27) rather than the race of the mother.

A measure of the quality of care has been developed by Dr. D. W. Kessner which combines information on the month prenatal care began, the gestational age at birth and the

number of prenatal visits. Adequate prenatal care is defined as care which began within the first trimester and which included an average of at least one or two additional prenatal visits per month of gestation depending on the length of gestation.

Table 1.27
Live Births with No Prenatal Care by Age of Mother and Race of Child
 Michigan Residents, 1989

Age of Mother in Years	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ¹	Number	Ratio ¹	Number	Ratio ¹	Number	Ratio ¹	Number	Ratio ¹
Under 15	30	75.8	4	35.7	26	92.5	-	-	-	-
15 - 19	606	31.6	198	17.9	395	51.6	7	19.5	6	76.9
20 - 24	862	21.9	337	11.7	502	51.6	12	15.9	11	84.0
25 - 29	580	12.1	210	5.3	356	50.2	10	10.1	4	24.7
30 - 39	444	11.1	155	4.7	276	48.3	9	9.1	4	22.0
40 or More	23	18.2	8	8.0	12	55.6	2	42.6	1	250.0
Not Stated	4	34.5	2	27.0	2	52.6	-	-	-	-
Total	2,549	17.2	914	8.0	1,569	51.1	40	12.7	26	46.6
Median Age at Last Birthday	23		23		23		25		24	

¹ Ratio denominators obtained from Table 1.9.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Intermediate care is defined as care which began during the second trimester of the pregnancy with correspondingly fewer visits, or which began during the first trimester but a few less visits occurred than would be appropriate for the length of gestation. Finally, care is defined as inadequate when no care was received or if care began during the third trimester. It is also defined as inadequate if care began during the first or second trimester but less than five visits occurred, when the length of gestation was 34 weeks or more. When the length of gestation was less than 34 weeks, care was defined as inadequate when care began during the first or second trimester but a number of visits less than four occurred, that number depending on the actual weeks of gestation.

Adequate prenatal care was obtained by mothers of 70.9 percent of the live births (Table 1.28). The proportion of live births to white mothers who received adequate care (74.9 percent) was higher than the corresponding proportion for black mothers (55.9 percent) and mothers all other races (64.4 percent). Inadequate care was received by the mothers of 7.3 percent of all live births. The proportions of live births to mothers who received inadequate care were 5.3 percent for

white mothers, 14.4 percent for black mothers and 9.1 percent for mothers of all other races.

Although the mothers of 78.0 percent of all live births received prenatal care during the first trimester, only 70.9 percent received adequate care as defined by the Kessner Index. Overall, this means that for 9.2 percent of the live births whose mothers initiated prenatal care most promptly, their mothers did not receive the minimum number of visits they should have received during the time they were pregnant.

For infants of white mothers 8.6 percent of the mothers began prenatal care during the first trimester and failed to receive an adequate number of prenatal visits during the pregnancy. The percentages for black mothers and mothers of all other races were 11.5 and 11.6, respectively (Tables 1.20 and 1.28).

Considered as a proportion of the live births to mothers who did not receive adequate care, 24.6 percent of the live births to mothers not receiving adequate care were to mothers who initiated care within the recommended first trimester, but did not continue to receive the appropriate minimum number of prenatal

care visits. The percentages were 28.3, 16.6 and 23.8 percent, respectively, for mothers of white, black and all other races mothers. Level of prenatal care according to race of child is presented in Table 1.29. The information by race of child is generally similar to that presented by race of mother.

the lowest proportions receiving adequate levels of prenatal care, 57.1 and 57.6 percent, respectively. Adequate prenatal care was obtained by 63.3 percent of live births born to American Indian mothers and 68.9 percent of live births born to women of all other ancestry groups.

The highest proportion of adequate prenatal care, 77.0 and 74.7 percent, respectively, were obtained by mothers of European and Arab Asian ancestry (Table 1.30). Live births to mothers of African and Hispanic ancestry had

For infants of mothers of Hispanic ancestry 13.2 percent of the mothers began prenatal care during the first trimester, but failed to receive adequate care. The percentages for African mothers, American Indian mothers

Table 1.28
Number and Percent of Live Births by Level of Prenatal Care and Race of Mother
Michigan Residents, 1989

Level of Prenatal Care (Kessner Index ¹)	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Adequate	104,985	70.9	86,316	74.9	16,691	55.9	1,625	64.4	353	57.5
Intermediate	28,327	19.1	19,608	17.0	8,042	27.0	588	23.3	89	14.5
Inadequate	10,770	7.3	6,141	5.3	4,295	14.4	229	9.1	105	17.1
Unknown	4,082	2.8	3,121	2.7	811	2.7	83	3.3	67	10.9
Total	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0

¹ The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care.)

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.29
Number and Percent of Live Births by Level of Prenatal Care and Race of Child
Michigan Residents, 1989

Level of Prenatal Care (Kessner Index ¹)	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Adequate	104,985	70.9	85,324	75.0	17,288	56.3	2,061	65.4	312	55.9
Intermediate	28,327	19.1	19,260	16.9	8,257	26.9	727	23.1	83	14.9
Inadequate	10,770	7.3	6,053	5.3	4,353	14.2	265	8.4	99	17.7
Unknown	4,082	2.8	3,087	2.7	832	2.7	99	3.1	64	11.5
Total	148,164	100.0	113,724	100.0	30,730	100.0	3,152	100.0	558	100.0

¹ The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care.)

Source: Office of the State Registrar and Center for Health Statistics, MDPH

and Arab Asian mothers were 11.3, 10.8 and 9.6 percent, respectively. In 8.6 and 8.4 percent of live births to mothers of European ancestry and all other ancestry groups, respectively, the mother began prenatal care early, but did not receive adequate care (Table 1.22 and 1.30)

GESTATIONAL AGE

The median period of gestation for the 148,164 resident live births in 1989 was 40 weeks (Table 1.31). Over seven percent of the live births born in 1989 were born at 35 weeks or less. For live births of black mothers 15.0 percent were born at 35 weeks or less compared to 5.3 percent for

live births of white mothers and 6.3 percent for live births of mothers of all other races. The median gestation age for infants of black mothers and mothers of races other than black or white was 39 weeks. The median period of gestation for infants of white mothers was 40 weeks.

The median period of gestation for live births to mothers of African, Arab Asian, Hispanic and Other ancestry was 39 weeks (Table 1.32). American Indian and European ancestry mothers had live births with a median gestational age of 40 weeks. Women of African ancestry had the greatest proportion of live births with a gestational age of 35 weeks or less (13.6). Women of Arab Asian ancestry had the smallest proportion of live

Table 1.30
Numbers and Percents of Live Births by Level of Prenatal Care
and Ancestry of Mother
Michigan Residents, 1989

Level of Care	Total		African		American Indian		Arabian Asian		European		Hispanic		Other (Incl. American)		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Adequate	104,985	70.9	10,918	57.1	1,576	63.3	1,724	74.7	56,109	77.0	2,394	57.6	26,400	68.9	5,864	65.8
Intermediate	28,327	19.1	5,320	27.8	622	25.0	393	17.0	11,361	15.6	1,166	28.1	7,670	20.1	1,795	20.1
Inadequate	10,770	7.3	2,355	12.3	205	8.2	140	6.1	3,540	4.9	478	11.5	3,235	8.4	817	9.2
Unknown	4,082	2.8	516	2.7	87	3.5	51	2.2	1,849	2.5	118	2.8	1,024	2.7	437	4.9
Total	148,164	100.0	19,109	100.0	2,490	100.0	2,308	100.0	72,859	100.0	4,156	100.0	38,329	100.0	8,913	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.31
Number and Cumulative Percent of Live Births by Period of Gestation and Race of Mother
Michigan Residents, 1989

Period of Gestation	Race of Mother									
	Total		White		Black		Other		Unknown	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 28 Weeks	1,587	1.1	732	0.6	829	2.8	14	0.6	12	2.0
28-31 Weeks	1,878	2.3	959	1.5	881	5.7	31	1.8	7	3.1
32-35 Weeks	7,307	7.3	4,393	5.3	2,759	15.0	115	6.3	40	9.6
36-37 Weeks	14,477	17.0	10,101	14.1	4,044	28.5	269	17.0	63	19.9
38 Weeks	18,054	29.2	13,839	26.1	3,781	41.2	354	31.0	80	32.9
39 Weeks	29,598	49.2	23,704	46.6	5,247	58.8	539	52.4	108	50.5
40 Weeks	30,354	69.7	25,018	68.4	4,727	74.6	505	72.4	104	67.4
41 Weeks	21,265	84.0	17,773	83.8	3,103	85.0	321	85.1	68	78.5
42+ Weeks	19,615	97.3	15,646	97.4	3,617	97.1	288	96.5	64	88.9
Not Stated	4,029	100.0	3,021	100.0	851	100.0	89	100.0	68	100.0
Total	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.32
**Number and Cumulative Percent of Live Births by Period of Gestation and Ancestry of Mother
 Michigan Residents, 1989**

Period of Gestation in Weeks	Total		African		American Indian		Arabian Asian		European		Hispanic		Other (Incl. American)		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Under 28	1,587	1.1	478	2.5	15	0.6	9	0.4	398	0.5	36	0.9	571	1.5	80	0.9
28-31	1,878	2.3	481	5.0	35	2.0	10	0.8	520	1.3	53	2.1	675	3.3	104	2.1
32-35	7,307	7.3	1,637	13.6	129	7.2	81	4.3	2,570	4.8	209	7.2	2,274	9.2	407	6.6
36-37	14,477	17.0	2,550	26.9	227	16.3	222	14.0	6,270	13.4	441	17.8	4,002	19.6	765	15.2
38	18,054	29.2	2,544	40.2	280	27.6	313	27.5	8,768	25.4	521	30.3	4,650	31.8	978	26.2
39	29,598	49.2	3,457	58.3	443	45.3	543	51.0	15,328	46.5	842	50.6	7,260	50.7	1,725	45.5
40	30,354	69.7	3,111	74.6	492	65.1	517	73.4	16,267	68.8	825	70.4	7,356	69.9	1,786	65.6
41	21,265	84.0	2,009	85.1	374	80.1	320	87.3	11,405	84.4	543	83.5	5,360	83.9	1,254	79.6
42+	19,615	97.3	2,295	97.1	406	96.4	237	97.6	9,579	97.6	554	96.8	5,169	97.4	1,375	95.1
Not Stated	4,029	100.0	547	100.0	89	100.0	56	100.0	1,754	100.0	132	100.0	1,012	100.0	439	100.0
Total	148,164	100.0	19,109	100.0	2,490	100.0	2,308	100.0	72,859	100.0	4,156	100.0	38,329	100.0	8,913	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

births with a gestational age of 35 weeks or less.

BIRTH WEIGHT

The mean weight for all live births was 3,341 grams or approximately 7 pounds 6 ounces (Table 1.33). The median weight was 3,380 grams or about 7 pounds 7 ounces. For infants of black mothers the mean (3,056 grams) and median (3,147 grams) birth weights were much lower than the mean and median birth weights for infants of white mothers (3,416 and 3,459 grams, respectively). For infants of mothers of all other races, the mean and median birth weights were 119 and 141 grams less than the mean and median for infant born to white mothers, but were 241 and 171 grams higher than the birth weights of infants born to black mothers. Birth weight data by race of child, as presented in Table 1.34, are relatively similar to birth weight data as presented by race of the mother.

Birth weight data by ancestry of the mother is displayed in Table 1.35. The mean birth weight for live births to mothers of European ancestry was 3,439 grams and the median birth weight was 3459 grams. The mean and median birth weight of live births born to

mothers of African ancestry was 3,087 grams and 3,160 grams, respectively. Mean and median birth weights for other ancestry groups were between the means and medians for infants of European and African mothers.

A subgroup of major importance when analyzing birth weight trends is the category of infants weighing less than 2,500 grams (approximately 5 pounds 8 ounces or less) at birth. Such infants have historically experienced higher mortality in their first year of life than heavier infants. In 1989, 76.4 of every 1,000 live births weighed less than 2,500 grams (Table 1.36).

The proportion of low birth weight infants varies with the race and age of the mother, and the amount and adequacy of prenatal care the mother has received. Mothers that are very young, black or of races other than black or white have fewer prenatal visits. Black women also have higher birth rates in the younger age groups. Tables 1.36, 1.38 and 1.40 present data on these variables with respect to birth weight and race of mother.

The age group with the highest low birth weight ratio (128.8) was the group of mothers under 15 years of age. This ratio was lower for each succeeding age group through age

Table 1.33
Live Births by Birth Weight
and Race of Mother
Michigan Residents, 1989

Weight at Birth in Grams	Race of Mother				
	Total	White	Black	All Other	Not Stated
500 or Less	368	164	195	4	5
501-1,000	801	391	393	9	8
1,001-1,500	1,100	547	532	17	4
1,501-2,000	2,239	1,306	893	28	12
2,001-2,499 ¹	6,815	4,060	2,599	119	37
2,500-3,000	23,532	15,695	7,260	464	113
3,001-3,500	52,380	40,435	10,736	991	218
3,501-4,000	43,781	37,171	5,771	684	155
4,001-4,500	14,117	12,699	1,209	167	42
4,501+	2,852	2,609	195	38	10
Not Stated	179	109	56	4	10
Total	148,164	115,186	29,839	2,525	614
Mean Weight	3,341.0	3,416.4	3,056.2	3,296.9	3,210.7
Median Weight	3,380	3,459	3,147	3,318	3,240

¹ In order to conform to national standards, the definition of low birth weight was changed in 1984 to less than 2500 grams.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.34
Live Births by Birth Weight
and Race of Child
Michigan Residents, 1989

Weight at Birth in Grams	Race of Child				
	Total	White	Black	All Other	Not Stated
500 or Less	368	162	196	5	5
501-1,000	801	384	397	12	8
1,001-1,500	1,100	541	538	17	4
1,501-2,000	2,239	1,285	907	35	12
2,001-2,499 ¹	6,815	4,011	2,628	140	36
2,500-3,000	23,532	15,483	7,406	540	103
3,001-3,500	52,380	39,887	11,053	1,245	195
3,501-4,000	43,781	36,714	6,051	876	140
4,001-4,500	14,117	12,570	1,289	223	35
4,501+	2,852	2,581	207	54	10
Not Stated	179	106	58	5	10
Total	148,164	113,724	30,730	3,152	558
Mean Weight	3,341.0	3,416.9	3,064.8	3,320.5	3,194.1
Median Weight	3,380	3,459	3,147	3,345	3,236

¹ In order to conform to national standards, the definition of low birth weight was changed in 1984 to less than 2500 grams.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.35
Numbers and Percents of Live Births by Birthweight and Ancestry of Mother
Michigan Residents, 1989

Weight at Birth in Grams	Total		African		American Indian		Arabian Asian		European		Hispanic		Other (Incl. American)		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
500 or Less	368	0.2	101	0.5	6	0.2	1	0.0	79	0.1	4	0.1	155	0.4	22	0.2
501 - 1,000	801	0.5	219	1.1	9	0.4	8	0.3	211	0.3	24	0.6	281	0.7	49	0.5
1,001 - 1,500	1,100	0.7	296	1.5	14	0.6	5	0.2	293	0.4	23	0.6	396	1.0	73	0.8
1,501 - 2,000	2,239	1.5	511	2.7	22	0.9	22	1.0	732	1.0	42	1.0	795	2.1	115	1.3
2,001 - 2,499 ¹	6,815	4.6	1,601	8.4	121	4.9	57	2.5	2,361	3.2	152	3.7	2,132	5.6	391	4.4
2,500 - 3,000	23,532	15.9	4,559	23.9	396	15.9	379	16.4	9,519	13.1	656	15.8	6,686	17.4	1,337	15.0
3,001 - 3,500	52,380	35.4	6,968	36.5	882	35.4	927	40.2	25,418	34.9	1,571	37.8	13,455	35.1	3,159	35.4
3,501 - 4,000	43,781	29.5	3,893	20.4	733	29.4	696	30.2	24,035	33.0	1,261	30.3	10,443	27.2	2,720	30.5
4,001 - 4,500	14,117	9.5	789	4.1	251	10.1	171	7.4	8,405	11.5	344	8.3	3,301	8.6	856	9.6
4,501 or More	2,852	1.9	141	0.7	55	2.2	38	1.6	1,750	2.4	71	1.7	634	1.7	163	1.8
Not Stated	179	0.1	31	0.2	1	0.0	4	0.2	56	0.1	8	0.2	51	0.1	28	0.3
Total	148,164	100.0	19,109	100.0	2,490	100.0	2,308	100.0	72,859	100.0	4,156	100.0	38,329	100.0	8,913	100.0
Mean Weight	3,341.0		3,086.5		3,366.7		3,369.9		3,439.1		3,347.0		3,274.6		3,352.7	
Median Weight	3,380		3,160		3,402		3,374		3,459		3,374		3,345		3,402	

¹ In order to conform to national standards, the definition of low birthweight was changed in 1984 to less than 2500 grams.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

group 25-29 (67.2) then increased for the older age groups to 97.2 per 1,000 live births for mothers 40 years or over (Table 1.36).

The low birth weight ratio for infants of black mothers was 154.6 compared with 56.2 for infants of white mothers and 70.1 for infants born to mothers of all other races (Table 1.36). The low birth weight ratios for infants of black women vary less by age of mother than those for infants of white women. For infants of white mothers the ratio associated with mothers under 15 years of age (89.3) was 75.4 percent greater than that of mothers in the 25-29 year age group (50.9). For infants of black mothers the differential between the age groups with the highest and lowest ratios was about 52.5 percent.

The ages of mothers associated with the lowest low birth weight ratio were 25-29 for infants of white mothers (50.9) and 15-19 years of age for infants of black mothers (133.6). Where ratios could be calculated, the low birth weight ratio for live births to mothers of all other races was lowest for mothers 25-29 years of age. The ratios increased for infants born to mothers of increasing and decreasing

age around 25-29 years for white mothers and around 15-19 years for black mothers. The pattern of low birth weight ratios follows a similar pattern as described above for race and age of mother when presented by race of child and age of mother (Table 1.37).

When low birth weight ratios are examined by the number of the mother's prenatal visits even more striking variations are evident. The low birth weight ratio for the highest risk group was 5.6 times that of the group with the lowest ratio. The low birth weight ratio was highest when the mother had no prenatal care at 286.0. The ratio declined as the number of prenatal visits increased through 10-14 visits, where the ratio was 51.1. The low birth weight ratio was 80.1 for mothers with 20 or more prenatal visits. It is likely that a very high number of prenatal visits is associated with problems in the pregnancy (Table 1.38).

Infants of black and white mothers show similar patterns of rising and falling ratios varying with the frequency of prenatal visits (Table 1.38). The low birth weight ratio for infants born to black mothers varied from a

Table 1.36
Low Weight¹ Live Births and Low Birth Weight Ratios by Age and Race of Mother
 Michigan Residents, 1989

Age of Mother in Years	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²
Under 15	51	128.8	10	89.3	41	145.9	-	-	-	-
15 - 19	1,847	96.5	809	71.8	1,006	133.6	19	69.1	13	160.5
20 - 24	3,064	77.9	1,620	55.5	1,381	146.3	43	74.9	20	138.9
25 - 29	3,214	67.2	2,034	50.9	1,124	163.8	41	50.1	15	82.9
30 - 39	3,005	75.1	1,910	57.0	1,007	183.9	70	85.8	18	88.7
40 or More	123	97.2	77	75.9	43	203.8	3	*	-	-
Not Stated	19	163.8	8	106.7	10	263.2	1	*	-	-
Total	11,323	76.4	6,468	56.2	4,612	154.6	177	70.1	66	107.5
Median Age at Last Birthday	26		26		24		28		25	

¹ Less than 2,500 grams.

² Ratio denominators obtained from Table 1.8.

high of 346.5 where the mother had 1 to 4 visits to a low of 102.1 where the mother had 15 to 19 visits. The ratio for infants of white mothers varied from a high of 204.3 where the mother had no care to a low of 37.5 where the mother had 10 to 14 prenatal visits.

The greatest relative difference in low birth weight ratios between races was observed for births to mothers with 10-14 visits. The ratio for infants of black mothers was 3.1 times the ratio for infants of white mothers. Overall, the low birth weight ratio for infants born to

Table 1.37
Low Weight¹ Live Births and Low Birth Weight Ratios by Age of Mother
and Race of Child
Michigan Residents, 1989

Age of Mother in Years	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²
Under 15	51	128.8	10	89.3	41	145.9	-	-	-	-
15 - 19	1,847	96.5	790	71.4	1,021	133.5	23	64.1	13	166.7
20 - 24	3,064	77.9	1,596	55.5	1,394	143.2	55	72.9	19	145.0
25 - 29	3,214	67.2	2,011	50.8	1,140	160.7	48	48.4	15	92.6
30 - 39	3,005	75.1	1,892	57.1	1,017	178.0	78	78.5	18	98.9
40 or More	123	97.2	76	76.2	43	199.1	4	*	-	-
Not Stated	19	163.8	8	108.1	10	263.2	1	*	-	-
Total	11,323	76.4	6,383	56.1	4,666	151.8	209	66.3	65	116.5
Median Age at Last Birthday	26		26		24		27		25	

¹ Less than 2,500 grams.

² Ratio denominators obtained from Table 1.9.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.38
Low Weight¹ Live Births and Low Birth Weight Ratios by Number of Prenatal Visits
and Race of Mother
Michigan Residents, 1989

Number of Prenatal Visits	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²
None	729	286.0	190	204.3	526	338.5	7	194.4	6	206.9
1 - 4	981	262.4	411	203.4	552	346.5	15	144.2	3	*
5 - 9	3,118	122.8	2,044	108.9	1,016	170.3	51	90.9	7	80.5
10 - 14	4,626	51.1	2,768	37.5	1,763	116.6	78	54.5	17	60.3
15 - 19	944	53.6	528	39.3	390	102.1	21	77.2	5	*
20 or More	353	80.1	265	74.4	83	109.8	2	*	3	*
Not Stated	572	147.8	262	98.1	282	271.9	3	*	25	252.5
Total	11,323	76.4	6,468	56.2	4,612	154.6	177	70.1	66	107.5
Median Number of Visits	10		10		9		10		10	
Mean Number of Visits	10.1		10.1		9.6		10.2		10.0	

¹ Less than 2,500 grams.

² Ratio denominators obtained from Table 1.24.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

black women was 2.8 times the ratio for infants born to white women. This high overall difference in the low birth weight ratios is also associated with a differential in the proportion of mothers having had fewer than 10 prenatal visits, where low birth weight ratios are high. While 18.9 percent of the infants born to white mothers were to mothers who had less than 10 prenatal visits, the corresponding figure for infants of black mothers was 30.5 percent (Table 1.24).

For low birth weight infants the median number of the mother's prenatal visits was 10, compared to 12 for all infants. The mean number of visits for mothers of low birth weight infants was 10.1, 14.4 percent less than the mean of 11.8 for mothers of all infants. As low birth weight infants are more likely to have been born prematurely, the shorter prenatal period results in a reduction of the potential length of time for prenatal care. As presented in Table 1.39, low birth weight ratios follow a relatively similar pattern as

described above for mother's race when reviewed by race of child.

The low birth weight ratio varied by adequacy of prenatal care as indicated by the Kessner Index (Table 1.40). The ratio was 2.0 times higher for infants born to both black and white mothers with inadequate care than to mothers with adequate prenatal care. The ratio was 1.5 times higher for infants born to white women with intermediate care than for white women with adequate care. For infants born to black women the ratio was 1.1 times higher when the mother received an intermediate level of care rather than adequate care. For infants born to women of all other races the ratios of low birth weight for women who receive inadequate and intermediate care were 4.2 and 14.0 percent higher than the ratio for women who received adequate care.

At birth 15.5 percent of the infants born to black women weighed less than 2,500 grams. Of infants born to black women with adequate

Table 1.39
Low Weight¹ Live Births and Low Birth Weight Ratios by Number of Prenatal Visits and Race of Child
 Michigan Residents, 1989

Number of Prenatal Visits	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²
None	729	286.0	188	205.7	526	335.2	9	225.0	6	230.8
1 - 4	981	262.4	405	203.5	556	344.5	17	147.8	3	150.0
5 - 9	3,117	122.8	2,020	109.4	1,034	167.9	56	81.4	7	90.9
10 - 14	4,626	51.1	2,733	37.5	1,785	114.3	92	51.0	16	64.3
15 - 19	944	53.6	520	39.2	391	99.5	28	81.4	5	79.4
20 or More	353	80.1	259	73.8	88	111.8	3	35.7	3	120.0
Not Stated	573	148.1	258	97.6	286	271.6	4	52.6	25	255.1
Total	11,323	76.4	6,383	56.1	4,666	151.8	209	66.3	65	116.5
Median Number of Visits	10		10		10		10		10	
Mean Number of Visits	9.9		10.1		9.6		10.4		10.0	

¹ Less than 2,500 grams.

² Ratio denominators obtained from Table 1.25.

Table 1.40
**Low Weight¹ Live Births and Low Birth Weight Ratios
 by Level of Prenatal Care and Race of Mother
 Michigan Residents, 1989**

Level of Prenatal Care (Kessner Index ²)	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ³	Number	Ratio ³	Number	Ratio ³	Number	Ratio ³	Number	Ratio ³
Adequate	6,503	61.9	4,199	48.6	2,171	130.1	109	67.1	24	68.0
Intermediate	2,560	90.4	1,385	70.6	1,121	139.4	45	76.5	9	101.1
Inadequate	1,770	164.3	611	99.5	1,125	261.9	16	69.9	18	171.4
Unknown	490	120.0	273	87.5	195	240.4	7	84.3	15	223.9
Total	11,323	76.4	6,468	56.2	4,612	154.6	177	70.1	66	107.5

¹ Less than 2500 grams.

² The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

³ Ratio denominators obtained from Table 1.28.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

care, a lower percentage (13.0) weighed less than 2,500 grams. The low weight ratio for infants born to black women with adequate care was still higher than the ratio for infants born to white women and women of all other races at any level of prenatal care. The low birth weight ratio was 2.7 and 1.9 times higher for infants born to black women with adequate care than for the corresponding white and all other women.

The low birth weight ratios were lower for infants born to white mothers than infants born to women of all other races receiving adequate and intermediate care, but higher for women receiving inadequate care. For infants born to women of all other races with inadequate care, the low birth weight ratio was 29.7 percent lower than the corresponding ratio for infants of white mothers

A difference in the ranking of low birth weight ratios by Kessner index is apparent for all other races when the Kessner index and low birth weight are analyzed by the race of the child (Table 1.41) rather than the race of the mother. For infants of all other races the low birth weight ratio for inadequate levels of

care (75.5) is greater than the ratio for intermediate care (66.0).

Figure 1.7 displays the low birth weight ratio for Michigan and the United States over the last twenty-eight years. In 1960 this ratio was 72.0 for Michigan. Between 1960 and 1966 the ratio increased, reaching a high for the 28 year period in 1966 (79.8). The ratio generally declined until 1985 when the ratio was 68.1, the lowest rate since 1960. It rose to 76.4 in 1989. The pattern for the United States has been similar. The ratio increased from 76.9 in 1960 to 83.3 in 1966, and declined to 67.1 in 1984. In 1987 the low birth weight ratio for the nation had increased to 68.9. The ratio for the United States was above that for Michigan each year from 1960 through 1970. Since then the ratio for the nation has been the same or lower than that of Michigan.

SEX OF INFANT

In 1989 51.4 percent of the infants born to Michigan residents were male. The proportion of males to females varies by race. The numbers of males per 1,000 females were 1,055 for infants born to white mothers, 1,052

for infants of black mothers, 1,110 for infants of American Indian mothers, and 1,169 for infants born to women of all other races (Table 1.42). For all races the low birth weight ratio for females was higher than for males. The

ratio of 82.8 for females, was 17.8 percent above the corresponding ratio of 70.3 for males. Similar information about sex of infants according to the race of the child is presented in Table 1.43.

Table 1.41
**Low Weight¹ Live Births and Low Birth Weight Ratios
 by Level of Prenatal Care and Race of Child**
 Michigan Residents, 1989

Level of Prenatal Care (Kessner Index ²)	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ³	Number	Ratio ³	Number	Ratio ³	Number	Ratio ³	Number	Ratio ³
Adequate	6,503	61.9	4,148	48.6	2,203	127.4	129	62.6	23	73.7
Intermediate	2,560	90.4	1,366	70.9	1,137	137.7	48	66.0	9	108.4
Inadequate	1,770	164.3	602	99.5	1,130	259.6	20	75.5	18	181.8
Unknown	490	120.0	267	86.5	196	235.6	12	120.2	15	234.4
Total	11,323	76.4	6,383	56.1	4,666	151.8	209	66.3	65	116.5

¹ Less than 2500 grams.

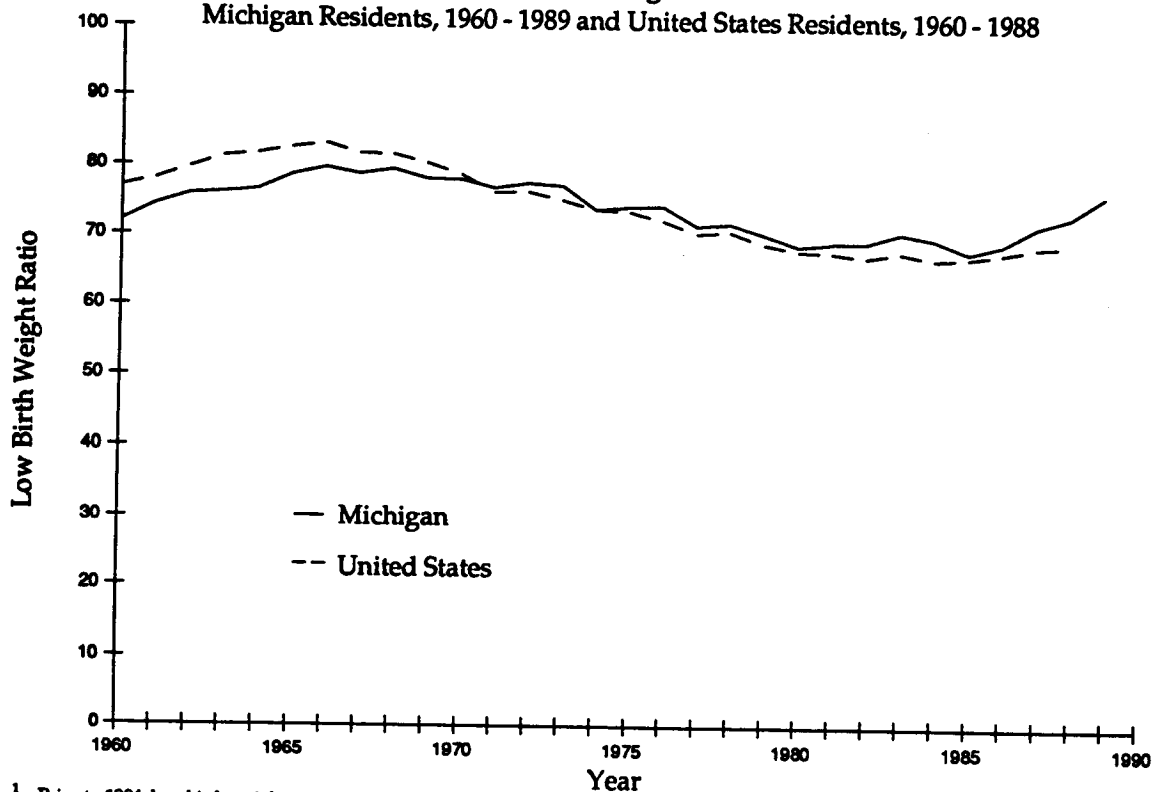
² The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

³ Ratio denominators obtained from Table 1.29.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 1.7
Low Birth Weight¹ Ratios

Michigan Residents, 1960 - 1989 and United States Residents, 1960 - 1988



¹ Prior to 1984, low birth weight was defined as 2,500 grams or less. Starting with year 1984, low birth weight is defined as less than 2,500 grams in order to conform to national standards.

Table 1.42
**Live Births, Low Weight Live Births and Low Birth Weight Ratios
 by Sex and Race of Mother**
 Michigan Residents, 1989

Race	Live Births				Low Weight Live Births			Low Birth Weight Ratios		
	Total ¹	Male	Female	Males per 1,000 Females	Total ¹	Male	Female	Total ¹	Male	Female
Total	148,164	76,092	72,067	1,056	11,323	5,352	5,967	76.4	70.3	82.8
White	115,186	59,127	56,056	1,055	6,468	3,105	3,361	56.2	52.5	60.0
Black	29,839	15,293	14,544	1,052	4,612	2,130	2,480	154.6	139.3	170.5
American Indian	844	444	400	1,110	66	30	36	78.2	67.6	90.0
Other	1,681	906	775	1,169	111	57	54	66.0	62.9	69.7
Unknown	614	322	292	1,103	66	30	36	107.5	93.2	123.3

¹ Records with sex not stated are included only in total columns.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.43
**Live Births, Low Weight Live Births and Low Birth Weight Ratios
 by Sex and Race of Child**
 Michigan Residents, 1989

Race	Live Births				Low Weight Live Births			Low Birth Weight Ratios		
	Total ¹	Male	Female	Males per 1,000 Females	Total ¹	Male	Female	Total ¹	Male	Female
Total	148,164	76,092	72,067	1,056	11,323	5,352	5,967	76.4	70.3	82.8
White	113,724	58,370	55,351	1,055	6,383	3,071	3,310	56.1	52.6	59.8
Black	30,730	15,774	14,954	1,055	4,666	2,150	2,514	151.8	136.3	168.1
American Indian	1,248	624	624	1,000	89	41	48	71.3	65.7	76.9
Other	1,904	1,030	874	1,178	120	60	60	63.0	58.3	68.6
Unknown	558	294	264	1,114	65	30	35	116.5	102.0	132.6

¹ Records with sex not stated are included only in total columns.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

MOTHER'S EDUCATION

Educational attainment of women having live births in 1989 varied with their age (Table 1.44). Of all Michigan resident live births in 1989, 19.5 percent were to women who had not completed high school. For mothers less than 20 years of age, the majority of live births (63.6 percent) were to mothers who had not completed high school. The percentage of live births to mothers with fewer than 4 years of high school dropped to 22.0 for those aged 20-24, 10.0 for those aged 25-29 and to 7.2 for mothers aged 30-34. This percentage was also 7.2 for mothers aged 35-39 and increased to

11.9 for mothers 40 years or older. Conversely, age of mothers of live born infants varied with the level of education. The median age of the mother was 20 years for those with 1 to 3 years of high school and 30 years for women with 4 or more years of college.

Birth order varies with the mother's education as well as her age (Table 1.45). The first birth ratio (number of first live births per 100 live births) decreased with increasing maternal age. Within maternal age categories the ratio generally increased with educational

Table 1.44
Live Births by Age and Education of Mother
Michigan Residents, 1989

Age of Mother in Years	Mother's Education							Percent With At Least High School Education
	Total	8th Grade or Less	1 - 3 Years High School	4 Years High School	1 - 3 years College	4 or More Years College	Not Stated	
Under 20	19,545	1,430	11,007	6,219	725	19	145	35.6
20 - 24	39,352	750	7,906	20,720	8,463	1,342	171	77.6
25 - 29	47,853	567	4,215	20,581	13,626	8,668	196	89.6
30 - 34	30,462	393	1,802	11,031	8,491	8,599	146	92.3
35 - 39	9,571	184	506	2,934	2,509	3,389	49	92.3
40 or More	1,265	63	88	372	292	440	10	87.3
Not Stated	116	3	17	45	23	10	18	67.2
Total	148,164	3,390	25,541	61,902	34,129	22,467	735	80.0
Median Age at Last Birthday	26	21	20	25	27	30	26	000

Source: Office of the State Registrar and Center for Health Statistics, MDPH

attainment. The first birth ratio for mothers with 4 or more years of college was 44.0 compared to 41.4 for mothers with 8th grade education.

For live births to women 20-24 years of age who had completed 4 or more years of college, 79.7 percent were to women with no previous live births, while only 23.1 percent of the live births to women of the same age who had completed the eighth grade or less were first births. Mothers with 1 to 3 years of high school had the lowest first birth ratio within each age interval taken separately but the second highest total first birth ratio (41.6). This high overall ratio reflects the fact that a relatively large proportion (43.1 percent) of births to mothers with 1 to 3 years of high school occurred before the age of 20.

CONGENITAL ANOMALIES

One or more congenital anomalies were reported for 3,161 of the 148,164 resident live births in 1989 (Table 1.46). This translates to a rate of 213.3 per 10,000 live births.

The method of reporting congenital anomalies on the birth record was altered

Table 1.45
First Birth Ratios¹ by Age and Education of Mother
Michigan Residents, 1989

Age of Mother in Years	Mother's Education					
	Total	8th Grade or Less	1-3 Yrs High School	4 Years High School	1-3 Years College	4+ Years College
< 20	76.8	75.3	74.2	80.8	86.1	78.9
20-24	46.6	23.1	22.6	48.3	61.8	79.7
25-29	34.8	15.9	11.4	28.7	37.6	58.0
30-34	23.3	12.7	7.5	18.8	23.6	32.6
35+	18.3	5.3	6.6	14.2	17.5	25.0
Total	39.9	41.4	41.6	38.0	39.5	44.0

¹ First live births per 100 live births. Births where the Mother's age and/or education are not stated are included in the total but are not reallocated to specific age and education categories.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

with the 1989 birth certificate. In years prior to 1989 congenital anomalies were written in a blank space provided for this information. The write-in information was coded using an appropriate version of the International Classification of Disease (ICD). Starting in 1989, however, a check-box format with detailed lists of congenital anomalies was implemented in reporting congenital anomalies. The belief is that this modification would help reduce the known underreporting of congenital anomalies. The 1989 congenital anomalies rates obtained by this modification would not, therefore, be comparable to rates obtained in

previous years. Particularly, any increase in the overall congenital anomalies rate or the rate of specific types of anomalies compared to previous years can not automatically be considered an increase in the proportion of congenital anomalies occurring. It is most likely that such an increase is a consequence of the more diligent reporting of congenital anomalies.

While the check-box reporting format may help reduce the level of underreporting of congenital anomalies, it is still true that the frequency of reporting of specific anomalies is affected by the reporting schedule. Many conditions may not be apparent at the time the birth certificate is completed and filed.

The most frequently reported category was musculoskeletal/integumental anomalies other than cleft lip/palate, polydactyly/syndactyly/adactyly, club foot and diaphragmatic hernia with 470 instances (Table 1.46). The next most common class of anomalies reported was urogenital anomalies other than malformed genitalia and renal agenesis anomalies with 347 instances, followed by 320 instances of circulatory/respiratory anomalies other than heart malformations.

The congenital anomaly rate of 237.6 per 10,000 live births for live births to mothers of races other than black or white was 65.2 percent higher than the rate of 143.8 for live births to black mothers and 3.3 percent higher

Table 1.46
Congenital Anomalies¹ Reported by Type of Anomaly by Race of Mother
Michigan Residents, 1989

Type of Anomaly	Total		White		Black		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Heart malformations	192	13.0	170	14.8	14	4.7	7	27.7
Cleft lip/palate	154	10.4	130	11.3	18	6.0	4	*
Malformed genitalia	153	10.3	131	11.4	17	5.7	2	*
Polydactyly/Syndactyly/Adactyly	151	10.2	84	7.3	63	21.1	3	*
Club foot	117	7.9	102	8.9	11	3.7	4	*
Down's syndrome	74	5.0	64	5.6	5	*	4	*
Hydrocephalus	42	2.8	34	3.0	8	2.7	-	-
Omphalocele/Gastroschisis	42	2.8	34	3.0	6	2.0	2	*
Spina Bifida/Meningocele	38	2.6	33	2.9	4	*	1	*
Microcephalus	26	1.8	20	1.7	5	*	1	*
Renal agenesis	26	1.8	22	1.9	4	*	-	-
Diaphragmatic hernia	22	1.5	20	1.7	2	*	-	-
Anencephalus	21	1.4	17	1.5	4	*	-	-
Tracheo-esophageal fistula/Esophageal atresia	21	1.4	19	1.6	1	*	1	*
Rectal atresia/stenosis	19	1.3	16	1.4	3	*	-	-
Other musculoskeletal/integumental anomalies	470	31.7	415	36.0	42	14.1	10	39.6
Other urogenital anomalies	347	23.4	318	27.6	23	7.7	5	*
Other circulatory/respiratory anomalies	320	21.6	282	24.5	27	9.0	3	*
Other chromosomal anomalies	141	9.5	113	9.8	25	8.4	2	*
Other gastrointestinal anomalies	60	4.0	50	4.3	9	3.0	-	-
Other central nervous system anomalies	53	3.6	45	3.9	4	*	3	*
Other	1,076	72.6	884	76.7	170	57.0	19	75.2
At least one anomaly ²	3,161	213.3	2,650	230.1	429	143.8	60	237.6

¹ Indicates anomalies apparent soon after a live birth.

² Does not equal the sum of anomalies specified because of multiple anomaly occurrences.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

than the rate of 230.1 for live births to white mothers. The congenital anomaly rate for live births to white mothers was 60.0 percent higher than the rate for live births to black mothers.

The most common specified congenital anomaly among live births to white and other than white or black mothers was other musculoskeletal/integumental anomalies with 415 and 10 instances, respectively. The most common specified congenital anomaly among live births to black mothers was polydactyly/syndactyly/adactyly with 63 instances.

Congenital anomaly rates by age and race of mother are presented in Table 1.47. The rates for all races combined varied with the age of the mother. The lowest were experienced by mothers 15-19 years of age. Highest rates were associated with women 40 years of age and above and women under 15 years of age. Congenital anomaly rates for infants of black mothers were below those for infants of white mothers at each age group with sufficient data to calculate a rate. Information on congenital anomaly rates by age of mother and race of child are presented in Table 1.48. This infor-

mation is consistent with the discussion based on age and race of mother.

MEDICAL FACTORS ASSOCIATED WITH DELIVERY AND/OR LABOR

In previous years numbers of deliveries with specific types of labor or delivery related complications were obtained from write-in entries in three boxes on the live birth certificate: Complications of pregnancy, Concurrent illness or conditions affecting this pregnancy, and Complications of labor and/or delivery. In 1989 these write-in items were generally replaced by a series of check-box items intended to capture more accurately and comprehensively information on medical risk factors, behavioral risk factors, complications of labor and/or delivery, obstetrical procedures, method of delivery and abnormal fetal conditions (see Figure 4.3). The use of the check-box items is also thought to alleviate the underreporting of many problems relating to pregnancy and delivery that was believed to occur with the write-in items. It was anticipated that the check-box items would

Table 1.47
Live Births with Congenital Anomalies Reported and Congenital Anomaly Rates¹
by Age and Race of Mother
Michigan Residents, 1989

Age of Mother in Years	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²
Under 15	11	277.8	3	*	8	284.7	-	-	-	-
15 - 19	363	189.6	262	232.6	92	122.2	4	*	5	*
20 - 24	836	212.4	675	231.2	138	146.2	21	365.9	2	*
25 - 29	1,007	210.4	877	219.3	107	156.0	19	232.0	4	*
30 - 34	692	227.2	612	238.7	61	148.9	10	171.8	9	625.0
35 - 39	212	221.5	187	236.7	19	137.8	4	*	2	*
40 or More	38	300.4	33	325.4	3	*	2	*	-	-
Unknown	2	*	1	*	1	*	-	-	-	-
Total	3,161	213.3	2,650	230.1	429	143.8	60	237.6	22	358.3
Median Age at Last Birthday	26		27		24		26		29	

¹ Number of live births with congenital anomalies reported per 10,000 live births.

² Rate denominator obtained from Table 1.8.

Table 1.48
Live Births with Congenital Anomalies Reported and Congenital Anomaly Rates¹
by Age of Mother and Race of Child
 Michigan Residents, 1989

Age of Mother in Years	Race of Child									
	Total		White		Black		All Other		Not Stated	
	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²	Number	Ratio ²
Under 15	11	277.8	3	*	8	284.7	-	-	-	-
15 - 19	363	189.6	256	231.4	95	124.2	7	195.0	5	*
20 - 24	836	212.4	666	231.8	142	145.9	26	344.8	2	*
25 - 29	1,007	210.4	864	218.2	110	155.0	30	302.4	3	*
30 - 34	692	227.2	608	239.7	64	150.5	12	166.9	8	625.0
35 - 39	212	221.5	184	236.5	21	143.7	5	*	2	*
40 or More	38	300.4	33	330.7	3	*	2	*	-	-
Unknown	2	*	1	*	1	*	-	-	-	-
Total	3,161	213.3	2,615	229.9	444	144.5	82	260.2	20	358.4
Median Age at Last Birthday	26		27		24		26		29	

¹ Number of live births with congenital anomalies reported per 10,000 live births.

² Rate denominator obtained from Table 1.9.

produce more accurate knowledge of frequency of occurrence of many conditions of great interest to the health care community.

Even with the move to check-box responses to specifically presented items, there were a few items relating to pregnancy and live births best captured by write-in responses such as five minute Apgar score and weight gain during pregnancy. Information about drug abuse was obtained from write-in responses associated with the "Other" category checked under Medical Risk Factors (see Figure 4.3).

There were 45,006 deliveries (30.4 percent of live births) reported with one or more complications of labor and/or delivery in 1989 (Table 1.49). Among the most commonly reported complications were meconium, moderate/heavy (8,626 instances); fetal distress (6,245 cases); premature rupture of membranes (6,220 cases); breech/malpresentation of fetus (5,874 cases) and cephalopelvic disproportion (5,481 cases).

The proportion of live births for which there was at least one complication were relatively similar for women of different races (Table 1.49). The types of complications which were most common were also very similar among mothers of different races, although the exact ordering by frequency of occurrence varied somewhat for mothers of differing race.

For 21.1 percent (31,292) of the 148,164 resident live births occurring in 1989, the mother had at least one medically relevant risk factor (Table 1.50). The most commonly specified medical risk factor was pregnancy related hypertension which occurred in mothers of 3.2 percent (4,770) of the live births. The next most common maternal medical risk factors were diabetes and anemia which occurred in mothers of 2.2 percent (3,305) and 1.6 percent (2,326) of the live births. Previous preterm or small-for-gestational age infant, previous infant 4,000+ grams and uterine bleeding were reported for mothers of 1.4, 1.3 and 1.2 percent of the live births, respectively.

The most common maternal medical risk factors varied somewhat among races (Table 1.50). Pregnancy related hypertension was the most common risk factor for white mothers (3.2 percent); drug abuse was most common for black mothers (3.8 percent); and diabetes was most common for mothers of all other races (3.4 percent).

The mother smoked while pregnant for 22.5 percent (33,364) of the live births in 1989 (Table 1.51). The mother drank alcohol while pregnant for 4.3 percent (6,382) of the live births. It is generally believed that reported numbers of mothers who drank or smoked while pregnant as obtained from certificates of live birth underreport the frequency of these risk factors. A weight gain during pregnancy of less than sixteen pounds was

reported for mothers of 7.6 percent (11,287) of the live births.

The reported percentage of live births whose mothers smoked while pregnant was relatively similar for white and black mothers (22.8 and 22.0 percent, respectively) (Table 1.51). Mothers of other races were reported to smoke during pregnancy considerably less than white or black mothers (15.9 percent). Fewer mothers of other races were also reported to drink alcohol during pregnancy than white or black mothers (2.9 percent versus 4.3 and 4.5 percent, respectively). A weight gain of less than sixteen pounds was most common among black mothers (11.9 percent), followed by mothers of other races (8.7 percent) and white mothers (6.5 percent).

Table 1.49
**Number and Percent of Live Births by Complications of Labor/Delivery
 and Race of Mother**
 Michigan Residents, 1989

Complications of Labor/Delivery	Total		White		Black		Other		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%
Meconium, moderate/heavy	8,626	5.8	6,285	5.5	2,169	7.3	132	5.2	40	6.5
Fetal distress	6,245	4.2	4,762	4.1	1,339	4.5	106	4.2	38	6.2
Premature rupture of membranes (>12 hours)	6,220	4.2	4,643	4.0	1,454	4.9	99	3.9	24	3.9
Breech/Malpresentation	5,874	4.0	4,854	4.2	892	3.0	96	3.8	32	5.2
Cephalopelvic disproportion	5,481	3.7	4,650	4.0	679	2.3	123	4.9	29	4.7
Dysfunctional labor	4,490	3.0	3,838	3.3	537	1.8	89	3.5	26	4.2
Precipitate labor (<3 hours)	2,940	2.0	2,474	2.1	400	1.3	48	1.9	18	2.9
Prolonged labor (>20 hours)	1,448	1.0	1,257	1.1	159	0.5	28	1.1	4	0.7
Abruptio placenta	1,106	0.7	834	0.7	245	0.8	20	0.8	7	1.1
Febrile (>100F or 38C)	1,005	0.7	730	0.6	239	0.8	30	1.2	6	1.0
Placenta previa	535	0.4	398	0.3	124	0.4	12	0.5	1	0.2
Cord prolapse	454	0.3	295	0.3	150	0.5	6	0.2	3	0.5
Anesthetic complications	52	0.0	42	0.0	9	0.0	-	-	1	0.2
Seizures during labor	48	0.0	33	0.0	14	0.0	1	0.0	-	-
Other excessive bleeding	725	0.5	604	0.5	107	0.4	12	0.5	2	0.3
Other	12,250	8.3	8,521	7.4	3,465	11.6	220	8.7	44	7.2
At least one complication	45,006	30.4	34,861	30.3	9,334	31.3	779	30.9	212	34.5
Total Live Births	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

By far the most commonly reported obstetrical procedures were electronic fetal monitoring and ultrasound which were performed on mothers of 64.6 percent (95,764) and 54.9 percent (81,319), respectively, of 1989 live births (Table 1.52). There were lower percentages of live births to black mothers who had these procedures than white mothers or mothers of other races.

Vaginal delivery was the most common method of delivery in 1989, accounting for 76.2 percent of the live births (Table 1.53). Of the vaginal deliveries, 2.7 percent were for live births whose mother had previously had a Caesarian section (C-section). Primary C-sections were performed in the case of 13.6

percent of the live births and repeat C-sections were performed in 9.1 percent of the live births. Forceps and vacuum assistance were used in 3.3 and 1.6 percent of live birth deliveries.

Black mothers had the smallest proportion of live births delivered by C-section, either primary or repeat (19.9 percent). White mothers had the greatest proportion of live births delivered with the aid of forceps or vacuum (5.5 percent).

In 1989, 8,993 live births were born with at least one abnormal condition at or accompanying birth or required assisted ventilation for a rate of 607.0 per 10,000 live births (Table

Table 1.50
Number and Percent of Live Births by Race of Mother and Medical Risk Factors
Michigan Residents, 1989

Risk Factors	Total		White		Black		Other		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%
Hypertension, pregnancy-associated	4,770	3.2	3,741	3.2	946	3.2	65	2.6	18	2.9
Diabetes	3,305	2.2	2,715	2.4	484	1.6	87	3.4	19	3.1
Anemia (Hct. 30/Hgb. 10)	2,326	1.6	1,399	1.2	853	2.9	62	2.5	12	2.0
Previous preterm or small-for-gestational age infant	2,090	1.4	1,641	1.4	395	1.3	34	1.3	20	3.3
Previous infant 4000+ grams	1,992	1.3	1,868	1.6	101	0.3	19	0.8	4	0.7
Uterine bleeding	1,778	1.2	1,476	1.3	252	0.8	36	1.4	14	2.3
Drug abuse	1,550	1.0	419	0.4	1,119	3.8	8	0.3	4	0.7
Rh sensitization	1,365	0.9	1,300	1.1	52	0.2	9	0.4	4	0.7
Hypertension, chronic	1,199	0.8	792	0.7	397	1.3	8	0.3	2	0.3
Genital herpes	1,073	0.7	897	0.8	164	0.5	7	0.3	5	0.8
Hydramnios/Oligohydramnios	964	0.7	735	0.6	212	0.7	14	0.6	3	0.5
Acute or chronic lung disease	638	0.4	391	0.3	240	0.8	6	0.2	1	0.2
Eclampsia	638	0.4	475	0.4	150	0.5	11	0.4	2	0.3
Cardiac disease	541	0.4	456	0.4	79	0.3	5	0.2	1	0.2
Incompetant cervix	487	0.3	370	0.3	107	0.4	5	0.2	5	0.8
Renal disease	249	0.2	221	0.2	27	0.1	-	-	1	0.2
Hemoglobinopathy	67	0.0	25	0.0	40	0.1	1	0.0	1	0.2
Other	11,789	8.0	8,686	7.5	2,845	9.5	200	7.9	58	9.4
At least one medical risk	31,292	21.1	23,554	20.4	7,109	23.8	480	19.0	149	24.3
Total Live Births	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0

¹ Indicates anomalies apparent soon after a live birth.

² Does not equal the sum of anomalies specified because of multiple anomaly occurrences.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1.54). The highest rate for a specified abnormal condition was associated with live births having a five minute Apgar score of less than 7 (159.6 per 10,000). The next two highest rates, 96.4 and 91.0, were associated with assisted ventilation of less than 30 minutes and hyaline membrane disease/RDS (Respiratory Distress Syndrome), respectively.

The rate for live births with at least one abnormal condition for black mothers, 622.0, was 3.3 percent greater than the rate for live births of white mothers, 602.4, and 6.1 percent greater than the rate for live births to mothers of all other races, 586.1. For live births to white mothers, the abnormal conditions as-

sociated with the three highest rates, in descending order, were five minute Apgar score of less than 7 (126.3); assisted ventilation of less than 30 minutes (106.3); and hyaline membrane disease/RDS (75.3). For live births to black mothers the three highest rates occurred for five minute Apgar score less than 7 (286.2); hyaline membrane disease/RDS (149.5); and meconium aspiration syndrome (66.4). Live births to mothers of all other races had their three highest rates for five minute Apgar score less than 7 (150.5); assisted ventilation less than 30 minutes (87.1); and assisted ventilation longer than 30 minutes (87.1).

Table 1.51
Number and Percent of Live Births With Maternal Risk Factors and Race of Mother
Michigan Residents, 1989

Maternal Risk Factors	Total		White		Black		Other		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%
Mother smoked while pregnant	33,364	22.5	26,297	22.8	6,563	22.0	401	15.9	103	16.8
Weight gain <16 pounds while pregnant	11,287	7.6	7,445	6.5	3,562	11.9	219	8.7	61	9.9
Mother drank alcohol while pregnant	6,382	4.3	4,936	4.3	1,343	4.5	73	2.9	30	4.9
Total Live Births	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.52
Number and Percent of Live Births With Maternal Obstetrical Procedures
by Race of Mother
Michigan Residents, 1989

Obstetrical Procedure	Total		White		Black		Other		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%
Electronic fetal monitoring	95,764	64.6	78,403	68.1	15,295	51.3	1,624	64.3	442	72.0
Ultrasound	81,319	54.9	68,557	59.5	11,122	37.3	1,297	51.4	343	55.9
Stimulation of labor	15,498	10.5	13,029	11.3	2,105	7.1	237	9.4	127	20.7
Induction of labor	12,807	8.6	10,903	9.5	1,664	5.6	149	5.9	91	14.8
Amniocentesis	5,750	3.9	4,940	4.3	674	2.3	103	4.1	33	5.4
Other	3,371	2.3	2,929	2.5	364	1.2	67	2.7	11	1.8
Tocolysis	3,263	2.2	2,679	2.3	510	1.7	37	1.5	37	6.0
Total Live Births	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 153
 Number and Percent of Live Births by Method of Delivery and Race of Mother
 Michigan Residents, 1989

Procedures During and Methods of Delivery	Total		White		Black		Other		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%
Procedures										
Forceps	4,868	3.3	4,302	3.7	452	1.5	88	3.5	26	4.2
Vacuum	2,431	1.6	2,037	1.8	353	1.2	37	1.5	4	0.7
Method										
Vaginal	109,717	74.1	84,472	73.3	22,945	76.9	1,863	73.8	437	71.2
Primary C-section	20,091	13.6	15,907	13.8	3,723	12.5	377	14.9	84	13.7
Repeat C-section	13,452	9.1	10,983	9.5	2,212	7.4	200	7.9	57	9.3
Vaginal birth after previous C-section	3,053	2.1	2,462	2.1	532	1.8	46	1.8	13	2.1
Unknown	1,851	1.2	1,362	1.2	427	1.4	39	1.5	23	3.7
Total Live Births	148,164	100.0	115,186	100.0	29,839	100.0	2,525	100.0	614	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 154
 Number and Rate¹ of Live Births With Abnormal Conditions by Race of Mother
 Michigan Residents, 1989

Abnormal Conditions	Total		White		Black		Other		Unknown	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
5 minute Apgar <7	2,364	159.6	1,455	126.3	854	286.2	38	150.5	17	276.9
Assisted ventilation <30 minutes	1,428	96.4	1,225	106.3	174	58.3	22	87.1	7	114.0
Hyaline membrane disease/RDS	1,348	91.0	867	75.3	446	149.5	21	83.2	14	228.0
Assisted ventilation >30 minutes	1,005	67.8	802	69.6	165	55.3	22	87.1	16	260.6
Meconium aspiration syndrome	801	54.1	588	51.0	198	66.4	14	55.4	1	*
Anemia (Hct<39/Hbg<13)	412	27.8	320	27.8	87	29.2	4	*	1	*
Birth injury	326	22.0	298	25.9	24	8.0	3	*	1	*
Seizures	300	20.2	220	19.1	77	25.8	2	*	1	*
Fetal alcohol syndrome	43	2.9	27	2.3	16	5.4	-	-	-	-
Other	5,008	338.0	3,812	330.9	1,077	360.9	90	356.4	29	472.3
At least one condition	8,993	607.0	6,939	602.4	1,856	622.0	148	586.1	50	814.3
Total Live Births	148,164		115,186		29,839		2,525		614	

Source: Office of the State Registrar and Center for Health Statistics, MDPH

¹ Rate is per 10,000 live births.

PLACE OF OCCURRENCE

Of some confusion to persons not familiar with vital records data is the difference between occurrence and residence figures. Information on events to residents of Michigan that occur throughout the country and, in some instances, outside United States bound-

aries is collected in order to obtain the full scope of activity for the state population.

In 1989 1,887 Michigan resident live births occurred outside the state. Information on these events was forwarded to the state of

Michigan for statistical purposes only. While only 1.3 percent of the total for the state was involved, statistics for the counties on Michigan's southern and northwestern borders would be strongly affected were this information not available.

Table 1.55 shows that births in the four border states comprise 89.4 percent of all resident live births that occurred out of state. Live births to Michigan residents occurred in 40 of the 50 states in 1989.

The number of nonresident live births that occurred in Michigan in 1989 was 446. Information about those events was shared with the appropriate states by the State of Michigan under specific confidentiality guidelines so they might have a complete statistical file on

their residents. Births in the four border areas comprised 65.3 percent of these events, as shown in Table 1.55. There were live births in Michigan to residents of 35 states, the Virgin Islands and at least 5 foreign countries.

PLACE OF BIRTH

In 1989, 99.0 percent of the 146,723 infants born in Michigan were delivered in hospitals. There were 802 infants born at home, and 697 other non-hospital and unknown deliveries (Table 1.56). While the percentage of infants not born in hospitals was still very small, the number of home deliveries and other out-of-hospital births has increased in recent years. Between 1975 and 1982 the number of infants born at home increased by 126 percent. The proportion of all live-born infants who were delivered at home increased from 0.24 percent in 1975 to 0.52 percent in 1982 (117 percent increase). The number of home births decreased for the three years between 1982 and 1985, then increased again from 1986 to 1989 to a high of 802 home deliveries (0.55 percent).

Table 1.55
Michigan Resident Live Births
Occurring Outside of Michigan by Place of
Occurrence, and Occurring in Michigan to
Non-Michigan Residents
by Place of Residence, 1989

Geographic Area	Live Births To Residents Occurring Outside Michigan		Live Births To Non-residents Occurring in Michigan	
	Number	Percent	Number	Percent
Total	1,887	100.0	446	100.0
Florida	12	0.6	13	2.9
Illinois	2	0.1	19	4.3
Indiana	586	31.1	81	18.2
Ohio	865	45.8	38	8.5
Texas	12	0.6	7	1.6
Wisconsin	234	12.4	153	34.3
Other States	167	8.9	62	13.9
U.S. Territories	-	-	1	0.2
Canada	9	0.5	22	4.9
Other Countries	-	-	12	2.7
Unknown	-	-	38	8.5

Source: Office of the State Registrar and Center for Health Statistics, MDPH

ATTENDANT AT BIRTH

Data in Table 1.57 reveal that 97.3 percent of the live births which occurred in Michigan during 1989 were attended by a physician, either an M.D. or D.O. There were 156 live births attended by the mother's husband, while nurses delivered 200 infants. Midwives and nurse-midwives delivered 2,697 infants. During 1989 there were 76 infants born to unattended women.

Of the 802 infants born in the mother's home, only 7.5 percent were attended by a physician while 17.7 percent were attended by the husband and 44.4 by midwives and nurse-midwives.

Table 1.56
Live Births by Place of Delivery
Michigan Occurrences, 1975 - 1989

Year	Place of Delivery						
	Total	Hospital ¹		Home		Other and Unknown	
		Number	Percent	Number	Percent	Number	Percent
1975	132,777	132,354	99.68	313	0.24	110	0.08
1976	130,253	129,714	99.59	375	0.29	164	0.13
1977	137,140	136,503	99.54	489	0.36	148	0.11
1978	137,896	137,119	99.44	573	0.42	204	0.15
1979	143,240	142,437	99.44	619	0.43	184	0.13
1980	144,077	143,257	99.43	645	0.45	175	0.12
1981	139,415	138,604	99.42	646	0.46	165	0.12
1982	137,127	136,236	99.35	707	0.52	184	0.13
1983	131,838	131,010	99.37	670	0.51	158	0.12
1984	134,847	134,042	99.40	646	0.48	159	0.12
1985	136,764	135,942	99.40	620	0.45	202	0.15
1986	136,214	135,308	99.33	733	0.54	173	0.13
1987	138,935	137,984	99.32	742	0.53	209	0.15
1988	137,974	137,020	99.31	767	0.56	187	0.14
1989	146,723	145,224	98.98	802	0.55	697	0.48

¹ Does not include births in hospitals without a maternity ward.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.57
Live Births by Place of Delivery and Type of Attendant
Michigan Occurrences, 1989

Attendant	Place of Delivery							
	Total		Hospital ¹		Home		Other and Unknown	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	146,723	100.0	145,224	100.0	802	100.0	697	100.0
Physician, M.D.	123,705	84.3	123,219	84.8	52	6.5	434	62.3
Physician, D.O.	19,007	13.0	18,957	13.1	8	1.0	42	6.0
Husband	156	0.1	2	0.0	142	17.7	12	1.7
Nurse	200	0.1	190	0.1	4	0.5	6	0.9
Midwife	367	0.3	26	0.0	325	40.5	16	2.3
Physician's Asst.	-	0.0	-	0.0	-	0.0	-	0.0
Nurse-Midwife ²	2,330	1.6	2,276	1.6	31	3.9	23	3.3
Other	606	0.4	419	0.3	133	16.6	54	7.7
Unattended	76	0.1	8	0.0	58	7.2	10	1.4
Unknown	276	0.2	127	0.1	49	6.1	100	14.3

¹ Does not include births in hospitals without a maternity ward.

² May or may not be certified by the American College of Nurse Midwives.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

FETAL DEATHS

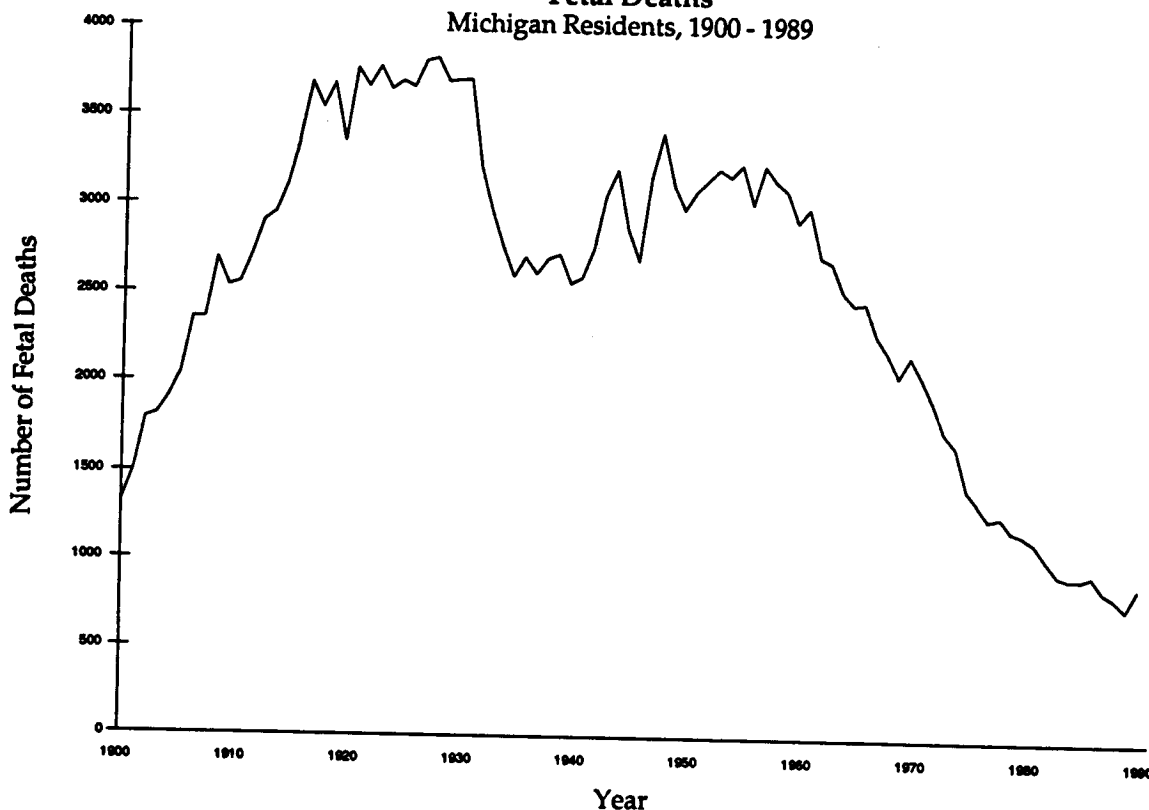
There were 1,325 fetal deaths reported in 1900. The number of reported fetal deaths increased from 1900 through 1916 and by 1916 3,689 were reported (Figure 1.8 and Table 4.1). The numbers of deaths were relatively stable from 1916 through 1930, with the peak year for the period being 1927. This year marked the highest frequency of occurrence in this century with 3,834 fetal deaths.

Over the period 1930 through 1939, fetal deaths declined to 2,572 fetal deaths then increased through 1943, decreased in 1944 and 1945, and increased again to 3,422 in 1947. Fetal deaths numbered between about 3,000 and 3,250 in the period 1948 to 1958. In the 1960's through the 1980's the number of reported fetal deaths declined sharply. By 1988 the number had decreased to 761 resi-

dent fetal deaths. In 1989 the number of resident fetal deaths increased to 881.

The fetal death ratio for Michigan has declined through most of the twentieth century (Figure 1.9 and Table 4.2). The ratio rose from 30.3 in 1900 to 43.5 fetal deaths per 1,000 live births in 1905. Through the teens and early twenties, this ratio fluctuated between 38.0 and 42.4, never reaching the peak ratio observed in 1905. In 1922, Michigan's fetal death ratio was 42.0, marking a turning point, as fetal death ratios have generally declined since that year. The low ratio of 1900 was first succeeded by a new low ratio in 1936 (29.7). Over the next 50 years, new lows were established repeatedly, as the fetal death ratio continued to decline. The ratio in 1989 was 5.9, a 9.3 percent increase over the 1988 ratio of 5.4.

Figure 1.8
Fetal Deaths
Michigan Residents, 1900 - 1989



National fetal death data are presented in Figure 1.9 and Table 1.58. Michigan's fetal death ratios have generally been below national ratios. In fact, the United States ratio has been below that for Michigan in only nine of the 65 years for which national data are available. The last time the United States ratio was below the Michigan ratio was in 1950. In 1988, the Michigan ratio of 5.4 was 28.0 percent below the national ratio of 7.5. It should be noted that fetal deaths in Michigan are comprised of infants born dead who had passed through 20 weeks gestation or weighed 400 grams or more. This definition is different from that of most states.

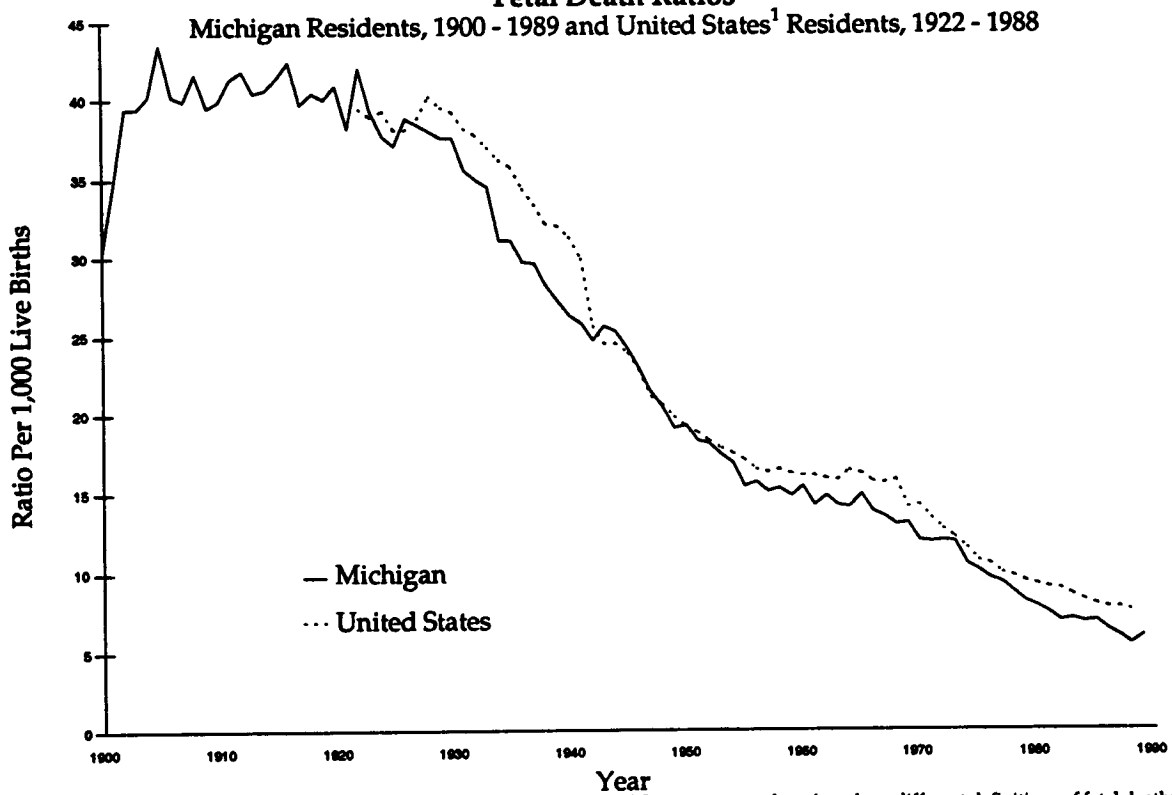
This classification is based on the 9th Revision of the International Classification of Diseases which was introduced in 1979. Since major changes were made between the 8th and 9th revisions of the ICD in the section used for classifying causes of fetal death, comparisons between cause-specific ratios for 1979 and later years and those for years prior to 1979 require detailed study. Also, since a relatively large number of deaths are allocated to unspecified causes, caution should be exercised in attempting to draw specific inferences regarding causes of death.

In 1989, 264 of the total 881 deaths were assigned to the category of "other and ill-defined conditions originating in the perinatal period". Nearly half (48.5 percent) of the remaining fetal deaths for which a cause was stated were attributed to complications of

CAUSES OF FETAL DEATH

A classification of fetal deaths by underlying cause of death is contained in Table 1.59.

Figure 1.9
Fetal Death Ratios



¹ United States ratios prior to 1933 are for registration areas only. United States ratios are based on three different definitions of fetal death:
 1) Prior to 1942 - all reported fetal deaths regardless of period of gestation
 2) 1942 to 1968 - fetal deaths with gestation age 20 weeks or more or not stated
 3) 1969 to current - fetal deaths of stated or presumed period of gestation of 20 or more weeks

Table 1.58
Fetal Deaths and Fetal Death Ratios
Michigan and United States Residents, 1900-1989

United States		Year	Michigan	
Fetal Deaths	Fetal Death Ratios		Fetal Deaths	Fetal Death Ratios
—	—	1900	1,325	30.3
—	—	1910	2,559	39.9
70,010 ¹	39.4	1920	3,770	40.9
86,466	39.2	1930	3,714	37.6
73,802	31.3	1940	2,602	26.3
68,262	19.2	1950	3,095	19.3
68,480	16.1	1060	3,008	15.4
52,961	14.2	1970	2,060	12.0
33,796	10.7	1975	1,356	10.1
33,111	10.5	1976	1,264	9.6
33,053	9.9	1977	1,284	9.3
32,301	9.7	1978	1,201	8.7
32,969	9.4	1979	1,175	8.1
33,353	9.2	1980	1,135	7.8
32,596	9.0	1981	1,040	7.4
32,694	8.9	1982	953	6.9
30,752	8.5	1983	933	7.0
30,099	8.2	1984	929	6.8
29,661	7.9	1985	953	6.9
28,972	7.7	1986	865	6.3
29,349	7.7	1987	824	5.9
29,442	7.5	1988	761	5.4
N.A.	N.A.	1989	881	5.9

¹ Data for 1922.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

placenta, cord, and membranes (ICD 762). This is a group of maternal conditions which includes placenta previa, premature separation of the placenta, placental hemorrhage, and compression of the umbilical cord.

Second in frequency was the category maternal complications of pregnancy (ICD 761), which was listed as the cause of 82 fetal deaths. This includes such complications as premature rupture of membranes, multiple pregnancy, and incompetent cervix. An additional 79 and 45 fetal deaths were caused by disorders relating to short gestation and unspecified low birth weight and by maternal conditions which may be unrelated to the pregnancy, respectively. There were 63 fetal deaths caused by congenital anomalies in 1989.

AGE AND RACE OF MOTHER

The overall fetal death rate per 1,000 total births (live births plus fetal deaths) was 5.9 in 1989. In Table 1.60, information is presented by the race of the mother for fetal deaths and live births. It appears that the younger and older mothers and black mothers have a greater risk of delivering a stillborn fetus. The 25-29 age group displayed the lowest rate. Progressively older and younger age groups displayed increasingly higher rates. The rate for women 15-19 (6.4) was 23.1 percent higher than the rate for women 25-29 years of age (5.2). The highest rate was experienced by women 40 and over, for whom the rate (11.7) was 2.25 times the rate for women in the lowest risk age group. The median age of women whose pregnancy resulted in a fetal death was 26 years, the same as the median age for women having live births.

In 1989 the fetal death rate for white mothers was 4.8. The rate for black mothers (9.5) was 97.9 percent higher than the rate for white mothers, while the rate for mothers of all other races was lower than the rate for white mothers. -Fetal death rates for black mothers were higher than those for white mothers in all age intervals with sufficient events to calculate rates. The differentials ranged from 41.1 percent higher for women aged 15 through 19 to 137.8 percent higher for women aged 30 through 39. Table 1.61 presents fetal death data by age of mother and race of the fetus or live birth. The pattern and relative magnitude of the numbers and rates as presented by the race of the fetus or live birth is quite similar to that as presented by the race of the mother. The fetal death rate for fetuses of races other than black or white, 4.1, is 13.9 percent greater than the fetal death rate for fetuses of mothers of races other than black or white.

Table 1.59
Fetal Deaths and Fetal Death Ratios by Underlying Cause of Death
Michigan Residents, 1989

ICD. No. ¹	Cause of Death	Frequency	Ratio ²
740	Anencephalus and similar anomalies	9	6.1
742	Other congenital anomalies of nervous system	6	4.0
746	Other congenital anomalies of heart	6	4.0
748	Congenital anomalies of respiratory system	1	*
753	Congenital anomalies of urinary system	3	*
756	Other congenital musculoskeletal anomalies	4	*
758	Chromosomal anomalies	18	12.1
759	Other and unspecified congenital anomalies	16	10.8
740 - 759	All Congenital Anomalies Combined	63	42.5
760	Fetus or newborn affected by maternal conditions which may be unrelated to present pregnancy	45	30.4
761	Fetus or newborn affected by maternal complications of pregnancy	82	55.3
762	Fetus or newborn affected by complications of placenta, cord, and membranes	299	201.8
763	Fetus or newborn affected by other complications of labor and delivery	4	*
764	Slow fetal growth and fetal malnutrition	1	*
765	Disorders relating to short gestation and unspecified low birthweight	79	53.3
766	Disorders relating to long gestation and high birthweight	4	*
767	Birth trauma	1	*
768	Intrauterine hypoxia and birth asphyxia	19	12.8
770	Other respiratory conditions of fetus and newborn	2	*
771	Infections specific to the perinatal period	1	*
772	Fetal and neonatal hemorrhage	1	*
773	Hemolytic disease of fetus or newborn, due to isoimmunization	2	*
775	Endocrine and metabolic disturbances specific to the fetus and newborn	8	5.4
778	Conditions involving the integument and temperature regulation of fetus and newborn	6	4.0
779	Other and ill-defined conditions originating in the perinatal period	264	178.2
740 - 779	All Causes	881	594.6

¹ Ninth Revision of the International Classification of Diseases, WHO.

² Ratios per 100,000 resident live births.

Table 1.60
Fetal Deaths, Live Births, Total Births
and Fetal Death Rates
by Age and Race of Mother
Michigan Residents, 1989

Age and Race of Mother	Fetal Deaths	Total Births	Rate Per 1,000 Total Births
Under 15 Years .	3	399	*
White	2	114	*
Black	1	282	*
All Other Races	-	2	-
Not Stated	-	1	-
15 - 19 Years . . .	124	19,273	6.4
White	63	11,326	5.6
Black	60	7,590	7.9
All Other Races .	-	275	-
Not Stated	1	82	*
20 - 24 Years . . .	221	39,573	5.6
White	138	29,330	4.7
Black	77	9,519	8.1
All Other Races	2	576	*
Not Stated	4	148	*
25 - 29 Years . . .	252	48,105	5.2
White	178	40,170	4.4
Black	64	6,925	9.2
All Other Races	3	822	*
Not Stated	7	188	37.2
30 - 39 Years . . .	219	40,252	5.4
White	151	33,689	4.5
Black	59	5,535	10.7
All Other Races	3	819	*
Not Stated	6	209	28.7
40 or Over	15	1,280	11.7
White	10	1,024	9.8
Black	4	215	*
All Other Races	1	37	*
Not Stated	-	4	-
Not Stated	47	163	288.3
White	18	93	193.5
Black	22	60	366.7
All Other Races	-	3	-
Not Stated	7	7	1,000.0
Total	881	149,045	5.9
White	560	115,746	4.8
Black	287	30,126	9.5
All Other Races	9	2,534	3.6
Not Stated	25	639	39.1

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.61
Fetal Deaths, Live Births, Total Births
and Fetal Death Rates by Age of
Mother and Race of Fetus
Michigan Residents, 1989

Age of Mother and Race of Fetus	Fetal Deaths	Total Births	Rate Per 1,000 Total Births
Under 15 Years .	3	399	*
White	2	114	*
Black	1	282	*
All Other Races	-	2	-
Not Stated	-	1	-
15 - 19 Years . . .	124	19,273	6.4
White	62	11,124	5.6
Black	61	7,711	7.9
All Other Races	-	359	-
Not Stated	1	79	*
20 - 24 Years . . .	221	39,573	5.6
White	135	28,867	4.7
Black	79	9,814	8.0
All Other Races	3	757	*
Not Stated	4	135	*
25 - 29 Years . . .	252	48,105	5.2
White	175	39,778	4.4
Black	65	7,161	9.1
All Other Races	5	997	*
Not Stated	7	169	41.4
30 - 39 Years . . .	219	40,252	5.4
White	148	33,291	4.4
Black	61	5,775	10.6
All Other Races	4	998	*
Not Stated	6	188	31.9
40 or Over	15	1,280	11.7
White	10	1,008	9.9
Black	4	220	*
All Other Races	1	48	*
Not Stated	-	4	-
Not Stated	47	163	288.3
White	18	92	195.7
Black	22	60	366.7
All Other Races	-	4	-
Not Stated	7	7	1,000.0
Total	881	149,045	5.9
White	550	114,274	4.8
Black	293	31,023	9.4
All Other Races	13	3,165	4.1
Not Stated	25	583	42.9

Source: Office of the State Registrar and Center for Health Statistics, MDPH

AGE AND ANCESTRY OF MOTHER FOR FETAL DEATHS

If mothers of unknown ancestry are disregarded, in 1989 mothers of African ancestry had the highest fetal death rate (11.7). Mothers of Arabian Asian ancestry had the lowest fetal death rate overall (3.0). Please note that 227 fetal deaths (25.8 percent) were to mothers of unknown ancestry. Therefore caution should be used in interpreting fetal death rates for individual ancestry categories (Table 1.62). Of those fetal deaths whose mothers' ancestries were unknown, 65.6 percent (149) were to mothers of white race, 24.7 percent (56) to mothers of black race, 0.4 percent (1) to mothers of other races and 9.3 percent (21) had mothers of unknown race.

Again disregarding fetal deaths to mothers of unknown ancestry (who had the highest fetal death rates at any age group for which rates could be calculated), the highest fetal death rates for women of African ancestry occurred to women of African ancestry occurred to women 30 to 39 years of age. For women of European ancestry the highest fetal death rates occurred to women 40 years of age and over. Except for the other ancestry category, no other ancestry group had sufficient fetal deaths in more than one age category to make reliable fetal death rates possible for more than one age group.

Table 1.62
Fetal Deaths, Live Births, Total Births and Fetal Death Rates by Ancestry of Mother Michigan Residents, 1989

Age and Ancestry of Mother	Fetal Deaths	Total Births	Rate Per 1,000 Total Births
Under 15 Years . . .	3	399	*
African	1	175	*
American Indian	-	4	-
Arabian Asian	-	1	-
European	1	51	*
Hispanic	1	23	*
Other	-	124	-
Unknown	-	21	-
15-19 Years	124	19,273	6.4
African	50	4,798	10.4
American Indian	2	512	*
Arabian Asian	1	162	*
European	20	5,540	3.6
Hispanic	4	859	*
Other	17	6,028	2.8
Unknown	30	1,374	21.8
20-24 Years	221	39,573	5.6
African	65	6,229	10.4
American Indian	2	893	*
Arabian Asian	-	519	-
European	58	16,529	3.5
Hispanic	4	1,330	*
Other	39	11,225	3.5
Unknown	53	2,848	18.6
25-29 Years	252	48,105	5.2
African	48	4,468	10.7
American Indian	4	674	*
Arabian Asian	4	782	*
European	83	26,425	3.1
Hispanic	9	1,100	8.2
Other	40	11,834	3.4
Unknown	64	2,822	22.7
30-39 Years	219	40,252	5.4
African	44	3,506	12.5
American Indian	2	404	*
Arabian Asian	2	799	*
European	74	23,800	3.1
Hispanic	3	824	*
Other	36	8,976	4.0
Unknown	58	1,943	29.9
40 or Over	15	1,280	11.7
African	3	131	*
American Indian	-	11	-
Arabian Asian	-	51	-
European	7	732	9.6
Hispanic	1	38	*
Other	1	264	*
Unknown	3	53	*
Total	881	149,045	5.9
African	226	19,335	11.7
American Indian	10	2,500	4.0
Arabian Asian	7	2,315	3.0
European	249	73,108	3.4
Hispanic	22	4,178	5.3
Other	140	38,469	3.6
Unknown	227	9,140	24.8

Source: Office of the State Registrar and Center for Health Statistics, MDPH

MEDICAL AND OTHER RISK FACTORS FOR FETAL DEATHS

In 1989, 382 fetal deaths, or 43.4 percent of all fetal deaths, occurred to women who were reported to have at least one medical or other birth-related risk factor. The most frequent risk factor mentioned was tobacco use during pregnancy which was reported in 26.1 percent (230) of all fetal deaths. Besides the Other category of risk factor which was reported for 165 fetal deaths, the next most common risk factor associated with fetal deaths was alcohol use during pregnancy (67 fetal deaths). There were no fetal deaths

reported associated with mothers infected with HIV (Table 1.63).

The highest rate of fetal deaths associated with risk factors occurred among women giving birth reported to have incompetent cervix (39.4). The next highest fetal death rates were to women with reported hydramnios/oligohydramnios (38.9) and renal disease (38.6). Relatively low fetal death rates were noted for previous infant weighing 4,000 grams or more (4.5), Rh sensitization (5.1) and genital herpes (5.6).

Table 1.63
Number and Percent of Fetal Deaths, and Fetal Death Rates
by Medical and Other Risk Factors
Michigan Residents, 1989

Risk Factors of Mother	Number of Fetal Deaths	Percent of Fetal Deaths	Fetal Death Rate
Anemia (Hct. <30/Hgb. <10)	39	4.4	16.5
Cardiac disease	9	1.0	16.4
Acute or chronic lung disease	8	0.9	12.4
Diabetes	21	2.4	6.3
Genital herpes	6	0.7	5.6
Hydramnios/Oligohydramnios	39	4.4	38.9
Hemoglobinopathy	2	0.2	*
Hypertension, chronic	29	3.3	34.5
Hypertension, pregnancy-associated	38	4.3	7.9
Eclampsia	7	0.8	10.9
Incompetant cervix	20	2.3	39.4
Previous infant 4000+ grams	9	1.0	4.5
Previous preterm or small-for-gestational age infant	38	4.3	17.9
Renal disease	10	1.1	38.6
Rh sensitization	7	0.8	5.1
Uterine bleeding	46	5.2	25.2
Drug abuse	25	2.8	15.9
HIV Infection	-	0.0	-
Tobacco use during pregnancy	230	26.1	6.8
Alcohol use during pregnancy	67	7.6	10.4
Other	165	18.7	13.8
At least one complication ¹	382	43.4	9.1

¹ Does not equal the sum of complications because of multiple complication occurrences.

CONGENITAL ANOMALIES AND FETAL DEATHS

At least one congenital anomaly was reported for 133, or 15.1 percent, of fetal deaths. The most commonly noted congenital anomaly was the residual Other category reported in 48 (5.4 percent) fetal deaths. Twenty-two (2.5 percent) fetal deaths were reported to have Other chromosomal anomalies and 12 (1.4 percent) were reported with Other central nervous system anomalies.

The highest fetal death rate among congenital anomalies was associated with anencephalus (322.6). This was followed by omphalocele/gastroschisis with a rate of 207.5 and Other central nervous system anomalies at 184.6 (Table 1.64).

Table 1.64
Number and Percent of Fetal Deaths, and Fetal Death Rates
by Congenital Anomalies
Michigan Residents, 1989

Congenital Anomaly	Number of Fetal Deaths	Percent of Fetal Deaths	Fetal Death Rate
Anencephalus	10	1.1	322.6
Spina Bifida/Meningocele	6	0.7	136.4
Hydrocephalus	5	0.6	*
Microcephalus	1	0.1	*
Other central nervous system anomalies	12	1.4	184.6
Heart malformations	11	1.2	54.2
Other circulatory/respiratory anomalies	7	0.8	21.4
Rectal atresia/stenosis	1	0.1	*
Tracheo-esophageal fistula/Esophageal atresia	-	0.0	-
Omphalocele/Gastroschisis	11	1.2	207.5
Other gastrointestinal anomalies	4	0.5	*
Malformed genitalia	3	0.3	*
Renal agenesis	3	0.3	*
Other urogenital anomalies	5	0.6	*
Cleft lip/palate	9	1.0	55.2
Polydactyly/Syndactyly/Adactyly	4	0.5	*
Club foot	4	0.5	*
Diaphragmatic hernia	1	0.1	*
Other musculoskeletal/integumental anomalies	9	1.0	18.8
Down's syndrome	10	1.1	119.0
Other chromosomal anomalies	22	2.5	135.0
Other	48	5.4	42.7
At least one anomaly ¹	133	15.1	40.4

¹ Does not equal the sum of anomalies specified because of multiple anomaly occurrences.

INTERPREGNANCY TIME PERIOD FOR FETAL DEATHS

For those women whose pregnancy terminated with a fetal death in 1989, a total of 433 reported the date of the termination of a previous pregnancy. Table 1.65 presents a comparison of fetal death rates by interpregnancy time span for births in 1989 to women who reported the date of a prior termination. Minimum risk was associated with spacings of between 2 and 3 years (4.1 fetal deaths per 1,000 total births). Risk increased progressively as the length of spacings decreased or increased. The fetal death rate for births with spacings of five or more years was 53.7 percent above the rate of the risk with spacing between 2 and 3 years. The greatest risk of fetal death was associated with spacings of less than one year. For births in this category the fetal death rate (13.0) was 3.1 times the rate with spacing between 1 and 2 years and 3.2 times the rate with spacing between 2 and 3 years.

When comparing interpregnancy time spans for live births and fetal deaths one should be aware that the shorter gestational period associated with fetal deaths results in a correspondingly shorter interpregnancy time span because span is measured from the date of last termination to date of current birth. The median interpregnancy time period for fetal deaths was 2 years and 5 months (Table 1.66) which was one month shorter than the median time period of 2 years and 6 months for women having live births in 1989 (Table 1.18).

As with live births, the outcome of the immediate prior termination has a strong influence on the interval between pregnancies. For 129 women whose prior termination was a fetal death, the median interpregnancy time span was 1 year and 9 months. For 304 women whose prior termination was a live

Table 1.65
Fetal Deaths, Live Births, Total Births and Fetal Death Rates by Time Span Between Last and Current Termination Michigan Residents Reporting Prior Pregnancy Terminations¹, 1989²

Time Span in Years	Fetal Deaths	Live Births	Total Births	Rate Per 1,000 Total Births
Total	433	86,894	87,327	5.0
< 1	48	3,641	3,689	13.0
1 < 2	116	27,797	27,913	4.2
2 < 3	84	20,564	20,648	4.1
3 < 5	86	19,304	19,390	4.4
5 +	99	15,588	15,687	6.3

¹ Terminations with time spans of zero years (i.e., second or later births in plural deliveries) and terminations with unknown time spans are excluded.

² The methodology for calculating interpregnancy time span was altered slightly in 1984. Hence, rates are not comparable to data from prior years.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

birth, the median interpregnancy time span was 3 years.

PRENATAL CARE - FETAL DEATHS

Of the 881 fetal deaths reported for 1989, 70 or 7.9 percent of the reports indicated that the mother had no prenatal visits. The comparable percent for live births was 1.7. The percent of mothers with fewer than ten prenatal visits was 59.9 for fetal deaths and 21.4 for live births (Table 1.25 and Table 1.67).

The number of prenatal visits varied by race. White mothers had a mean of 7.3 visits whereas black mothers and mothers of all other races reported means of 4.6 and 7.4 visits respectively. Note, however, that the number of prenatal visits was not stated on 12.1 percent of the reports for fetuses of white mothers, compared to 33.1 and 11.1 percent of the reports for fetuses of black mothers and fetuses of mothers of all other races.

Table 1.66
Fetal Deaths¹ to Women Reporting Prior Pregnancy Terminations²
by Time Span Between Last and Current Termination and
by Whether Prior Termination Resulted in a Live Birth or a Fetal Death
Michigan Residents, 1989³

Time Span in Years	Total		Prior Fetal Death ⁴		Prior Live Birth	
	Number	Percent	Number	Percent	Number	Percent
Total	433	100.0	129	100.0	304	100.0
Less than One	48	11.1	28	21.7	20	6.6
1 < 2	116	26.8	51	39.5	65	21.4
2 < 3	84	19.4	18	14.0	66	21.7
3 < 5	86	19.9	16	12.4	70	23.0
5 or More	99	22.9	16	12.4	83	27.3
Median Time Span	2 Years 5 Months		1 Year 9 Months		3 Years 0 Months	

¹ Deaths of fetuses of twenty or more weeks gestation or weighing 400 grams or more.

² Terminations with time spans of zero years (i.e., second or later births in plural deliveries) and terminations with unknown time spans are excluded.

³ The methodology for calculating interpregnancy time span was altered slightly in 1984. Hence, median time spans and percentages are not comparable to data from prior years.

⁴ Fetal death as defined for the pregnancy history on the fetal death record is a fetal death of any gestational age.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The fetal death rate varied with the number of prenatal visits (Table 1.67). The rate was 26.7 for mothers with no care, 46.9 for mothers with 1-4 visits, and 10.7 for those with 5-9 visits. The fetal death rate was low for mothers with 10-14 visits (1.6), 15-19 visits (1.6) and 20 or more visits (1.8).

For those cases with one or more prenatal visits, where rates could be calculated, black mothers had rates that were similar or lower than white mothers. The proportion of fetal deaths where the mother's number of prenatal visits was not stated was, as noted previously, considerably greater for black mothers than for white mothers (33.1 percent versus 12.1 percent). In this category, the fetal death rate for black mothers was 3.4 times higher than for white mothers. Fetal death rates presented by race of fetus or live birth are in Table 1.68.

Caution should be exercised in interpreting the above fetal death rates and proportions.

Incomplete reporting of the number of visits occurred on 19.5 percent of the fetal death reports compared with 2.6 percent of the live birth records. It should also be kept in mind that fetal deaths are much more likely to occur preterm and this affects the possible number of prenatal visits (Table 1.69). In 1989, 33.9 percent of the reported fetal deaths occurred before 28 weeks of gestational age, and 55.0 percent occurred before 36 weeks. Incomplete reporting of gestational age occurred on 19.1 percent of the fetal death reports.

The month of pregnancy that prenatal care began was most frequently the second month. The proportion of all fetal deaths in 1989 that were to women who reported receiving care prior to the fourth month of pregnancy was 58.6 with 71.1 percent receiving care prior to the sixth month.

The percentage of fetal deaths in which the mother received care prior to the fourth and sixth month generally increased from 1970

Table 1.67
Fetal Deaths, Total Births and Fetal Death Rates by Number of Prenatal Visits and Race¹ of Mother
 Michigan Residents, 1989

Number of Visits	All Races			White			Black			All Other		
	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates
Total	881	149,045	5.9	560	115,746	4.8	287	30,126	9.5	9	2,534	3.6
None	70	2,619	26.7	27	957	28.2	43	1,597	26.9	-	36	-
1 - 4	184	3,923	46.9	111	2,132	52.1	68	1,661	40.9	2	106	*
5 - 9	274	25,662	10.7	209	18,984	11.0	54	6,020	9.0	4	565	*
10 - 14	144	90,750	1.6	115	73,894	1.6	22	15,137	1.5	2	1,432	*
15 - 19	29	17,635	1.6	23	13,471	1.7	4	3,822	*	-	-	-
20 +	8	4,414	1.8	7	3,569	2.0	1	757	*	-	-	-
Not Stated	172	4,042	42.6	68	2,739	24.8	95	1,132	83.9	1	63	*
Median Number of Visits	6			7			4			7		
Mean Number of Visits	6.6			7.3			4.6			7.4		

¹ Race not stated included in total columns only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.68
Fetal Deaths, Total Births and Fetal Death Rates by Number of Prenatal Visits and Race¹ of Fetus
 Michigan Residents, 1989

Number of Visits	All Races			White			Black			All Other		
	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates
Total	881	149,045	5.9	550	114,274	4.8	293	31,023	9.4	13	3,165	4.1
None	70	2,619	26.7	26	940	27.7	43	1,612	26.7	1	41	*
1 - 4	184	3,923	46.9	111	2,101	52.8	68	1,682	40.4	2	117	*
5 - 9	274	25,662	10.7	208	18,673	11.1	55	6,213	8.9	4	692	*
10 - 14	144	90,750	1.6	110	73,041	1.5	24	15,645	1.5	5	1,810	*
15 - 19	29	17,635	1.6	22	13,293	1.7	5	3,933	*	-	344	-
20 +	8	4,414	1.8	7	3,517	2.0	1	788	*	-	84	-
Not Stated	172	4,042	42.6	66	2,709	24.4	97	1,150	84.3	1	77	*
Median Number of Visits	6			6			4			8		
Mean Number of Visits	6.6			7.3			4.8			7.7		

¹ Race not stated included in total columns only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

through 1973, declined between 1973 and 1976, and generally increased again between 1976 and 1983 (Figure 1.10). Both percentages declined between 1983 and 1986 and increased in 1987, declined again in 1988 and increased

in 1989. However the percentage of live births in which the mother received care prior to the fourth month increased between 1970 and 1985 to 81.0 percent, declined to 79.8 percent in 1986, increased to 80.0 in 1987 and

declined to 78.0 in 1989. The percentage of live births in which the mother received care prior to the sixth month increased to 93.9 percent in 1985 then declined to 91.8 in 1989 (Figure 1.6).

The relationship between the fetal death rates and numbers and the Kessner Index are displayed in Tables 1.70 and 1.72. The fetal death rate increased as the quality of prenatal care measured by the Kessner Index decreased (Table 1.70). The rate was 3.3 per 1,000 total births (fetal deaths and live births) born to women receiving adequate prenatal care. The rate increased to 6.8 and 18.3 for births to women receiving intermediate and inadequate levels of care respectively.

The fetal death rate was 12.5 percent higher for births to black mothers than for births to white mothers for women receiving an adequate level of care. For black mothers receiving intermediate levels of care, the fetal death rate was 4.5 percent higher than white

Table 1.69
Fetal Deaths by Gestational Age and Number of Prenatal Visits
Michigan Residents, 1989

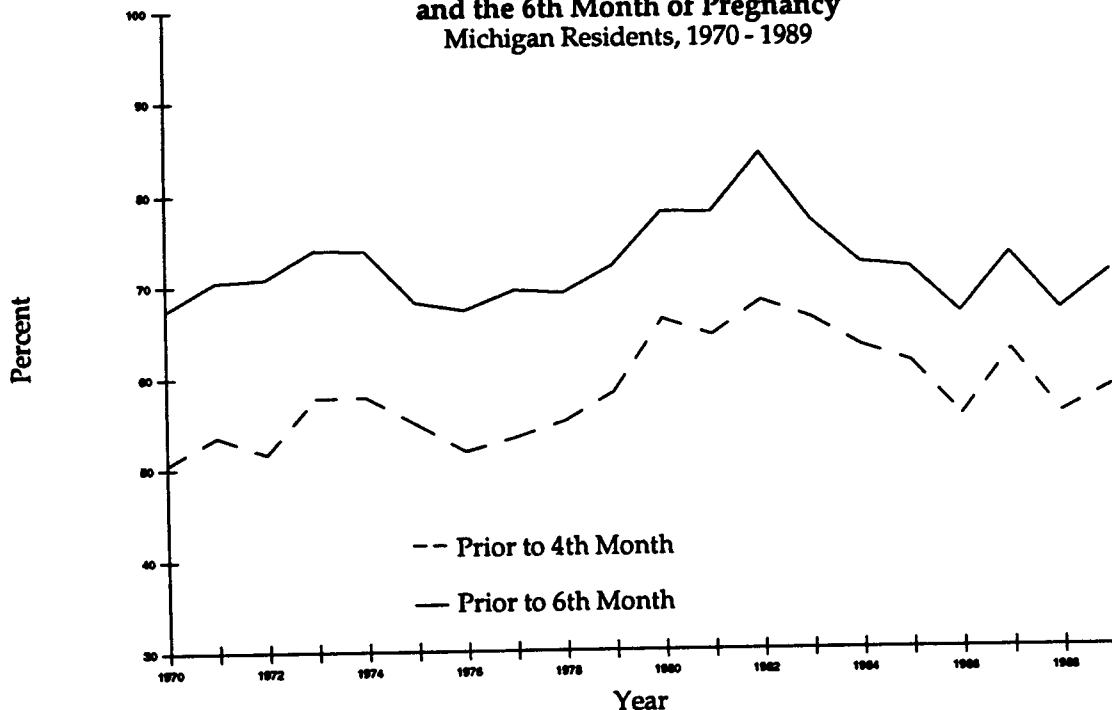
Gestational Age in Weeks	Number	Percent	Median Number of Visits
Under 20	30	3.4	3
20 - 23	153	17.4	4
24 - 27	115	13.1	5
28 - 31	85	9.6	6
32 - 35	101	11.5	8
36 - 39	155	17.6	10
40 - 43	62	7.0	12
44 or More	12	1.4	11
Unknown	168	19.1	4
Total	881	100.0	6

Source: Office of the State Registrar and Center for Health Statistics, MDPH

mothers receiving the same level of care. The fetal death rate was 58.1 percent higher for black mothers than for white mothers receiving inadequate levels of care.

The numbers of fetal deaths generally increased as the quality of prenatal care increased even though the fetal death rates decreased because most women receive ade-

Figure 1.10
Percent of Women Having Fetal Deaths who Received Care Prior to the 4th Month and the 6th Month of Pregnancy
Michigan Residents, 1970 - 1989



quate care (Table 1.72). The proportion of live births born to women receiving adequate care in 1989 was 70.8 percent while 40.0 percent of the fetal deaths were born to women with adequate prenatal care. Since the Kessner Index reduces the minimum number of prenatal visits required to meet the definition of adequate care when gestational age at birth is less than 36 weeks, the percent of the fetal deaths which were born to women with

adequate prenatal care should not be affected by the shorter gestational age experienced by many fetal deaths.

In Tables 1.71 and 1.73, the relationship between fetal death rates and numbers and Kessner Index are presented by the race of the fetus or live birth. In general, results are close to those observed by race of mother.

Table 1.70
Fetal Deaths, Total Births and Fetal Death Rates by Level of Prenatal Care and Race¹ of Mother
Michigan Residents, 1989

Level of Care (Kessner Index ²)	Race of Mother											
	All Races			White			Black			All Other		
	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates
Adequate	352	105,337	3.3	277	86,593	3.2	61	16,752	3.6	3	1,628	*
Intermediate	195	28,522	6.8	130	19,738	6.6	56	8,098	6.9	4	592	*
Inadequate	201	10,971	18.3	92	6,233	14.8	103	4,398	23.4	1	230	*
Unknown	133	4,215	31.6	61	3,182	19.2	67	878	76.3	1	84	*
Total	881	149,045	5.9	560	115,746	4.8	287	30,126	9.5	9	2,534	3.6

¹ Race not stated included in total columns only.

² The Kessner Index is a classification of prenatal care based on the month of pregnancy prenatal care began, the number of prenatal visits, and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.71
Fetal Deaths, Total Births and Fetal Death Rates by Level of Prenatal Care and Race¹ of Fetus
Michigan Residents, 1989

Level of Care (Kessner Index ²)	Race of Fetus											
	All Races			White			Black			All Other		
	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates	Fetal Deaths	Total Births	Fetal Death Rates
Adequate	352	105,337	3.3	270	85,594	3.2	65	17,353	3.7	6	2,067	2.9
Intermediate	195	28,522	6.8	130	19,390	6.7	56	8,313	6.7	4	731	*
Inadequate	201	10,971	18.3	89	6,142	14.5	105	4,458	23.6	2	267	*
Unknown	133	4,215	31.6	61	3,148	19.4	67	899	74.5	1	100	*
Total	881	149,045	5.9	550	114,274	4.8	293	31,023	9.4	13	3,165	4.1

¹ Race not stated included in total columns only.

² The Kessner Index is a classification of prenatal care based on the month of pregnancy prenatal care began, the number of prenatal visits, and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.72
**Number and Percent of Fetal Deaths by Level of the Mother's Prenatal Care
 and Race of Mother**
 Michigan Residents, 1989

Level of Care (Kessner Index ¹)	Race of Mother									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Adequate	352	40.0	277	49.5	61	21.3	3	33.3	11	44.0
Intermediate	195	22.1	130	23.2	56	19.5	4	44.4	5	20.0
Inadequate	201	22.8	92	16.4	103	35.9	1	11.1	5	20.0
Unknown	133	15.1	61	10.9	67	23.3	1	11.1	4	16.0
Total	881	100.0	560	100.0	287	100.0	9	100.0	25	100.0

¹ The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.73
**Number and Percent of Fetal Deaths by Level of the Mother's Prenatal Care
 and Race of Fetus**
 Michigan Residents, 1989

Level of Care (Kessner Index ¹)	Race of Fetus									
	Total		White		Black		All Other		Not Stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Adequate	352	40.0	270	49.1	65	22.2	6	46.2	11	44.0
Intermediate	195	22.1	130	23.6	56	19.1	4	30.8	5	20.0
Inadequate	201	22.8	89	16.2	105	35.8	2	15.4	5	20.0
Unknown	133	15.1	61	11.1	67	22.9	1	7.7	4	16.0
Total	881	100.0	550	100.0	293	100.0	13	100.0	25	100.0

¹ The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

Source: Office of the State Registrar and Center for Health Statistics, MDPH

FETAL WEIGHT

Among live births, the percentage of infants weighing less than 2,500 grams at birth was 7.6 (Table 1.34). The comparable percent among fetal deaths was 75.9. The distribution of fetal weight by plurality for fetal deaths is presented in Table 1.74. Note that twin deliveries are not sets, but are total occurrences and that any given set may have included a live birth. The percent of single delivery fetal deaths under 2,500 grams was 74.6. The comparable percent for twin deliveries was 89.6.

The fetal weight distribution is strongly associated with gestational age (Table 1.75). The median fetal weight for all fetal deaths was 936 grams compared to a median birthweight of 3,380 grams for live births. For deaths of fetuses of 32-35 weeks of age, the median was 1,758 grams, while for the normal gestational age ranges of 36-39 and 40-43 weeks the median weight was 2,632 and 3,062 grams respectively.

Table 1.74
Fetal Deaths by Fetal Weight and Plurality¹
Michigan Residents, 1989

Weight	Fetal Deaths	Cum. Percent	Single Delivery	Twin Delivery	Triplet Delivery	Quad-Ruplet Delivery
500 Grams or Less	241	27.4	216	18	-	1
501-1,000 Grams	198	49.8	173	15	-	-
1,001-1,500 Grams	77	58.6	73	1	-	-
1,501-2,000 Grams	78	67.4	70	5	1	-
2,001-2,499 Grams	75	75.9	68	4	-	-
2,500-3,000 Grams	86	85.7	83	1	-	-
3,001-3,500 Grams	61	92.6	60	1	-	-
3,501-4,000 Grams	27	95.7	27	-	-	-
4,001-4,500 Grams	12	97.0	12	-	-	-
4,501 Grams or More	7	97.8	7	-	-	-
Not Stated	19	100.0	15	3	1	-
Total	881	100.0	804	48	2	1

¹ Plurality unknown included in fetal deaths column only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 1.75
Fetal Deaths by Fetal Weight and Gestational Age
Michigan Residents, 1989

Fetal Weight in Grams	Gestational Age in Completed Weeks									
	Total	< 20	20 - 23	24 - 27	28 - 31	32 - 35	36 - 39	40 - 43	44 +	Unknown
Less Than 1501	516	30	142	110	66	34	14	5	2	113
1501 - 2499	153	-	5	2	13	51	49	7	2	24
2500 or Over	193	-	3	-	4	14	89	50	8	25
Unknown	19	-	3	3	2	2	3	-	-	6
Total	881	30	153	115	85	101	155	62	12	168
Median¹	936	424	410	550	992	1,758	2,632	3,062	3,218	649

¹ Excluding unknown fetal weight.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

MORTALITY

SECTION II



MORTALITY

AN OVERVIEW, 1989

Resident Deaths	78,566
Crude Death Rate	8.5
Infant Deaths	1,645
Infant Death Rate	11.1
Neonatal Deaths	1,070
Neonatal Death Rate	7.2
Perinatal Deaths	1,687
Perinatal Death Rate	12.0
Maternal Deaths	13
Maternal Death Rate	0.9
Deaths from Heart Disease per Day	77
Deaths from Cancer per Day	50
Deaths from Stroke per Day	14
Deaths from Accidents per Day	9
Median Age at Death	73 Years
Median Age at Death for Males	70 Years
Median Age at Death for Females	77 Years

In 1989 there were 78,566 deaths recorded for Michigan residents, 1,509 less than in the previous year. The crude death rate per 1,000 population was 8.5 in 1989, 2.3 percent less than the rate of 8.7 observed in 1988 (Table 2.1). The age-adjusted death rate decreased in 1989, being 2.5 percent less than the age-adjusted rate for 1988. This latter rate, the age-adjusted rate, serves as a better measure of mortality than a crude death rate as age-adjusted death rates control for most of the differences or variations in the age composition of the populations.

Table 2.1
Number of Deaths and Crude Death Rates
Michigan and United States Residents, 1970 - 1989

United States		Year	Michigan	
Number	Rate		Number	Rate
1,921,031	9.5	1970	76,321	8.6
1,927,542	9.3	1971	77,395	8.6
1,963,944	9.4	1972	79,210	8.8
1,973,003	9.3	1973	78,522	8.7
1,934,388	9.1	1974	76,143	8.4
1,892,879	8.8	1975	74,522	8.2
1,909,440	8.8	1976	75,801	8.3
1,899,597	8.6	1977	74,144	8.1
1,927,788	8.7	1978	74,773	8.1
1,913,841	8.5	1979	73,480	7.9
1,989,841	8.8	1980	74,991	8.1
1,977,981	8.6	1981	75,818	8.2
1,974,797	8.5	1982	75,536	8.2
2,019,201	8.6	1983	76,639	8.4
2,039,369	8.6	1984	76,401	8.4
2,086,440	8.7	1985	78,635	8.7
2,105,361	8.7	1986	80,177	8.8
2,123,323	8.7	1987	79,795	8.7
2,167,999	8.8	1988	80,075	8.7
2,155,000Pr.	8.7Pr.	1989	78,566	8.5

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Between 1900 and 1989 the number of deaths occurring to Michigan residents increased from 32,453 to 78,566. The 31,472 deaths recorded in 1902 was the lowest number of resident deaths in this century, while the number of resident deaths recorded in 1986 (80,177) was the greatest number of resident deaths for the century.

Although the total number of deaths increased between 1900 and 1989, the increase is due to an increasing population. The crude death rate decreased from 13.4 (per 1,000

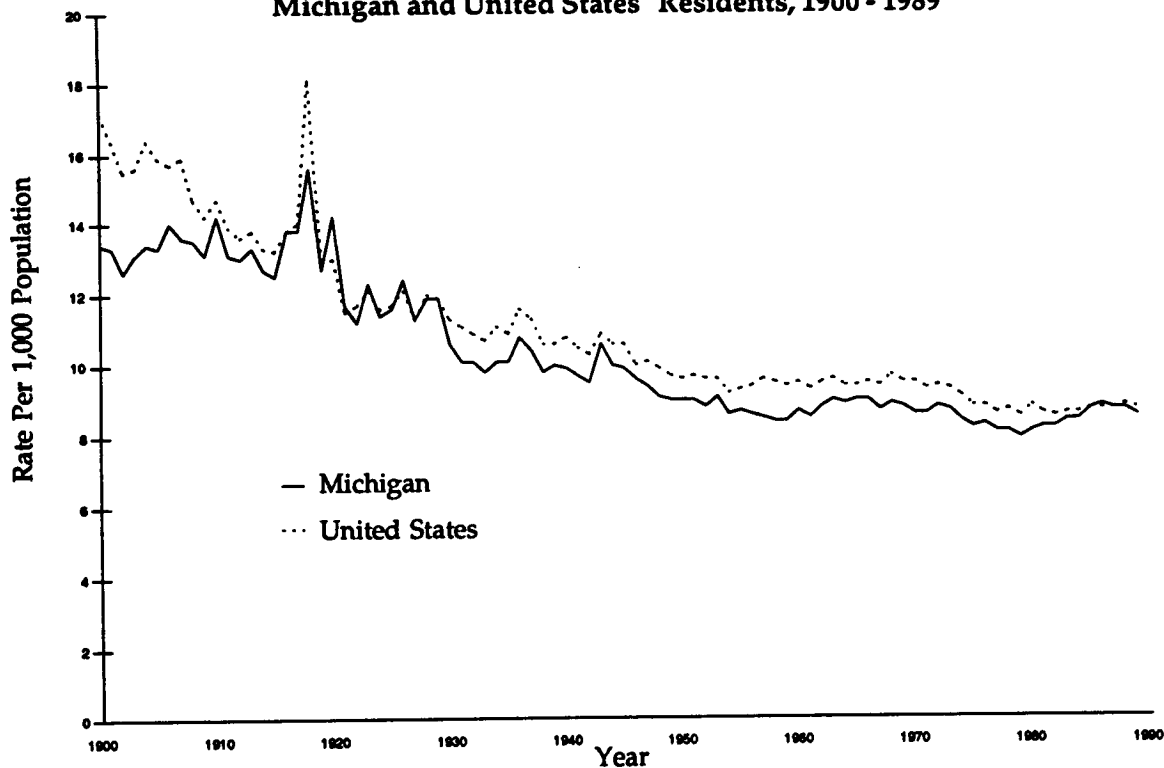
population) in 1900 to 8.5 in 1989. The 1979 death rate of 7.9 was the lowest crude death rate ever recorded for Michigan. The highest death rate (15.6) was observed in 1918 (Figure 2.1).

A comparison of deaths and crude death rates for Michigan and the United States for the period 1970-1989 is presented in Table 2.1. Between 1970 and 1984, the Michigan rates had been consistently below the United States rates. In 1985 and 1987, however, the Michigan rate of 8.7 was the same as the United States rate. In 1986, the Michigan rate of 8.8 was above the United States rate of 8.7, while in both 1988 and 1989 the Michigan rate was again below the United States rate. The Michigan rates were relatively stable between 1970 and 1973, declined 9.2 percent between 1973 and 1979 and then increased to equal the rates in the early 1970's. The national rates followed a similar pattern.

Between 1970 and 1989 the number of Michigan resident deaths increased by 2.9 percent, but the crude death rate decreased by 1.2 percent. The age-adjusted death rate dropped 25.9 percent during the same period (Table 2.7). Over the period 1970-1989 the age-adjusted death rates for the nation declined by a greater amount, 26.6 percent. For this same period, the age-adjusted rates for Michigan were higher than national rates nineteen out of twenty years. Between 1970 and 1983 the rates were similar, based upon the revised data in Table 2.7. By 1989 the age-adjusted rate for Michigan was 1.4 percent above the provisional national rate.

The numbers of deaths by marital status and age for men and women are displayed in Table 2.2. The majority of men were married at the time of death while the majority of women were widows. Men were more than twice as likely as women to be married at the

Figure 2.1
Crude Death Rates
Michigan and United States¹ Residents, 1900 - 1989



¹ United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

Table 2.2
Deaths by Age, Sex and Marital Status
Michigan Residents, 1989

Age in Years	Males						Females					
	Total	Never Married	Divorced	Widower	Married ¹	Unknown	Total	Never Married	Divorced	Widow	Married ¹	Unknown
Under 15	1,216	1,216	-	-	-	-	1,007	1,007	-	-	-	-
15 - 24	1,025	965	8	-	52	-	354	319	4	-	31	-
25 - 34	1,513	892	177	2	440	2	608	278	88	6	236	-
35 - 44	1,947	523	537	32	838	17	1,046	202	267	38	536	3
45 - 54	2,758	309	689	67	1,682	11	1,727	135	402	183	1,004	3
55 - 64	6,080	476	977	432	4,167	28	3,935	211	571	880	2,271	2
65 - 74	10,528	697	974	1,465	7,364	28	7,903	412	740	3,444	3,293	14
75 - 84	10,318	598	513	2,696	6,481	30	10,813	564	607	7,280	2,345	17
85 +	5,198	297	145	2,489	2,256	11	10,562	598	302	9,026	628	8
Unknown	2	-	-	-	-	2	2	1	-	-	-	1
All Ages	40,585	5,973	4,020	7,183	23,280	129	37,957	3,727	2,981	20,857	10,344	48

¹ Includes legally separated.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

time of death (57.4 percent compared to 27.3 percent). Conversely, women were over three times as likely to be widows at the time of death as men were to be widowers (54.9 percent compared to 17.7 percent). Among males, 14.7 percent had never been married, while the corresponding figure for females was 9.8 percent. Men were also more likely to be divorced (9.9 percent compared to 7.9 percent).

Of the 78,566 Michigan resident deaths in 1989, 71.1 percent (55,845) were to individuals of European ancestry (Table 2.3). The next largest proportion, 14.0 percent (11,006), were to individuals of African ancestry. Individuals with a reported ancestry of American accounted for 7.1 percent (5,607) of the 1989 resident deaths. Individuals of American Indian, Hispanic and Arab Asian ancestry each accounted for less than 1.0 percent of the 1989 resident deaths. Individuals of all other reported ancestries accounted for 1.5 percent of the resident deaths in 1989.

Residents of Hispanic ancestry who died in 1989 had the lowest median age at death among ancestry groups, 63 years of age. Individuals of African and American Indian ancestry both had a median age of 65 years at death. The median age at death for individual of American ancestry was 70 years, and individuals of Arab Asian ancestry died at a median age of 72 years. Individuals of European ancestry died at a median age of 75 years and individuals of all other ancestries had a median age of 74 years at death.

Table 2.4 presents data on the number of deaths by race for the period 1970-1989. The number of deaths of white persons decreased by 1.8 percent over these years while deaths of black persons increased by 36.7 percent. Reported deaths of American Indians increased by a large amount in 1989, being 163.8 percent above the 1970 number and 153.8 percent above the 1988 number. In 1989 deaths of white persons numbered 66,031 and accounted for 84.0 percent of all deaths, while

Table 2.3
Deaths by Age and Ancestry
Michigan Residents, 1989

Age In Years	African	American	American Indian	Arabian Asian	European	Hispanic	Other	Unknown	Total
<1	630	210	26	12	622	36	28	81	1,645
1-4	54	32	4	3	123	4	10	13	243
5-9	39	15	3	1	82	2	3	6	151
10-14	36	28	1	1	105	10	1	8	190
15-19	181	84	7	4	320	14	9	37	656
20-24	229	80	6	4	354	17	8	25	723
25-29	265	98	17	4	496	32	16	45	973
30-34	360	132	16	4	558	26	12	40	1,148
35-39	465	128	13	9	674	19	19	59	1,386
40-44	508	144	20	9	814	20	30	63	1,608
45-49	470	196	31	8	1,106	25	28	75	1,939
50-54	506	216	36	18	1,593	26	43	109	2,547
55-59	678	331	59	30	2,504	32	55	160	3,849
60-64	994	475	75	54	4,114	65	94	297	6,168
65-69	1,182	588	81	56	5,942	51	100	383	8,383
70-74	1,212	638	69	50	7,452	49	130	454	10,054
75-79	1,176	663	55	65	8,029	53	145	448	10,634
80-84	911	655	57	62	8,208	55	175	379	10,502
85-89	628	498	37	62	6,628	46	146	306	8,351
90+	481	396	18	30	6,120	30	97	240	7,412
Unknown	-	-	-	-	-	-	-	4	4
Total	11,006	5,607	631	486	55,845	612	1,149	3,230	78,566
Median Age at Death	65	70	65	72	75	63	74	72	73

deaths of black persons constituted 15.2 percent of the state total.

It should be noted that data on race are derived from the death certificates filed by funeral directors. Data from sources where race is self-enumerated, when matched with death data, indicate that there are larger numbers of American Indians and persons of other races dying than are reported as members of those groups on the death certificate.¹

The major increase in the number of American Indian deaths listed as the decedent's race may be due to the inclusion of ancestry on the death certificate. By requesting information about ancestry, certifiers may be identifying American Indian decedents who might otherwise be identified as white.

Michigan resident deaths in 1989 are tabulated by age, race, and sex in Table 2.5. Of the 78,566 Michigan resident deaths that occurred in 1989, 40,585 (51.7 percent) occurred to males and 37,957 occurred to females (24 records had sex not stated). The median age at death for males was 70 years, compared to a significantly higher figure of 77 years for females. The median age at death was 75 years for white persons, 65 years for black persons and 64 years for persons of other races.

In 1989, 23,226 or 29.6 percent of all deaths occurred to persons under the age of 65. The proportion dying under age 65 was greater for males than females and greater for black persons and persons of races other than black or white than for white persons. For deaths of white persons 31.8 percent of the males and

¹ National Center for Health Statistics, *Comparability of Marital Status, Race, Nationality and Country of Origin in the Death Certificate and Matching Census Record: United States, May - August, 1986* (Washington, D.C., 1969).

Table 2.4
Number of Deaths by Race¹
Michigan Residents, 1970 - 1989

Year	All Races	White	Black	American Indian	Other ²
1970	76,321	67,270	8,731	127	54
1971	77,395	67,847	9,259	128	45
1972	79,210	69,598	9,409	126	40
1973	78,522	68,502	9,641	121	54
1974	76,143	66,600	9,233	128	58
1975	74,522	65,191	9,024	118	60
1976	75,801	66,334	9,146	125	70
1977	74,144	64,816	9,038	140	53
1978	74,773	65,149	9,254	152	72
1979	73,480	63,955	9,188	129	75
1980	74,991	64,897	9,704	137	93
1981	75,818	65,559	9,950	127	78
1982	75,536	65,259	9,941	148	101
1983	76,639	66,103	10,178	163	121
1984	76,401	65,732	10,359	129	115
1985	78,635	67,426	10,903	130	116
1986	80,177	68,602	11,283	139	134
1987	79,795	67,831	11,614	137	146
1988	80,075	68,191	11,569	132	152
1989	78,566	66,031	11,939	335	185

¹ Deaths with race not stated included in total column only. Persons of Spanish or of Mexican-American descent are included with white.

² Includes Chinese, Japanese, Filipino, Hawaiian, other Asian or Pacific Islander. Indians from India were counted as "White" from 1970-1977 and with "Other" since 1978.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

19.6 percent of the females died before age 65. For deaths of black persons, 55.4 percent of the males and 41.5 percent of the females died before age 65. For persons of races other than black or white, the percentage of the males (54.7) who died before the age of 65 was lower than the percentage for black males and higher than the percentage for white males. The percentage of females of races other than black or white (47.1) was greater than the percentages of both black and white females.

Since about eighty-eight percent of the population is below age 65, a better reflection of the probability of living to age 65 is obtained from appendix Tables 4.19 - 4.27.

Based on current age-specific death rates, 77.3 percent of white males born in 1989 would survive to age 65. The percentages are 86.3, 53.0 and 71.7, respectively, for white females, black males and black females.

Crude age-specific, and age-adjusted death rates by race and sex are presented in Table 2.6. The crude rate for males of 898.8 was 12.6 percent above that for females, while the age-adjusted rate for males was 63.9 percent higher than the age-adjusted rate for females. The population with the lowest crude death rate was white females (802.1) and the highest crude rate was experienced by black males (1,147.4).

Age-adjusting the data revealed a similar relationship. The age-adjusted rate was lowest for white females and highest for black males.

The age-specific death rates for all males and all females displayed in Figure 2.2 indicate a similar pattern. Rates for both sexes declined from birth to a low for ages 1-14 years. The rate for males aged 15-24 was 4.2 times higher than the rate for males 1-14 years of age, while the rate for females in the 15-24 years age group was 1.7 times higher than the rate for their 1-14 years of age counterparts. Rates for both sexes rose through the terminal age group (85 years and over). Rates for males were consistently above those for females with the greatest relative differential occurring in the age group 15-24 years, where the rate for males was 2.8 times that for females.

A comparison by race of 1989 age-specific death rates for males is graphically presented in Figure 2.3. Rates for white and black males were 3.7 and 6.2 times higher, respectively, for the 15-24 age groups than for the 1-14 age groups. Between ages 15-24 and 25-34 the rate for white males increased by 44.5 percent, while the corresponding increase for black

Table 2.5
Number of Deaths by Age, Race and Sex¹
Michigan Residents, 1989

Age in Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
< 1	1,645	896	743	946	519	423	672	360	311	23	14	8
1-4	243	125	118	178	90	88	60	34	26	5	1	4
5-9	151	85	66	102	59	43	43	22	21	6	4	2
10-14	190	110	80	147	84	63	38	23	15	4	2	2
15-19	656	479	177	442	314	128	204	159	45	10	6	4
20-24	723	546	177	469	351	118	249	192	57	5	3	2
25-29	973	694	279	675	483	192	283	200	83	14	10	4
30-34	1,148	819	329	743	538	205	392	270	122	12	10	2
35-39	1,386	929	456	846	581	282	508	340	168	14	8	6
40-44	1,608	1,018	590	1,036	644	392	544	356	188	25	15	10
45-49	1,939	1,211	727	1,400	873	526	512	326	186	21	8	13
50-54	2,547	1,547	1,000	1,956	1,178	778	559	349	210	26	16	10
55-59	3,849	2,322	1,526	3,070	1,877	1,192	736	416	320	40	26	14
60-64	6,168	3,758	2,409	5,025	3,098	1,927	1,075	617	457	63	39	24
65-69	8,383	4,940	3,440	7,035	4,171	2,861	1,286	732	554	53	33	20
70-74	10,054	5,588	4,463	8,662	4,811	3,848	1,320	737	583	62	34	28
75-79	10,634	5,546	5,086	9,337	4,921	4,414	1,259	612	647	33	12	21
80-84	10,502	4,772	5,727	9,456	4,304	5,150	988	435	552	49	29	20
85-89	8,351	3,159	5,191	7,619	2,866	4,752	689	270	419	37	21	16
90+	7,412	2,039	5,371	6,866	1,864	5,000	521	168	353	18	5	13
Not Stated	4	2	2	3	2	1	1	-	1	-	-	-
All Ages	78,566	40,585	37,957	66,031	33,628	32,383	11,939	6,618	5,318	520	296	223
Median Age At Last Birthday	73	70	77	75	72	78	65	62	69	64	63	67

¹ Deaths with race and/or sex not stated are included only in the total column.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.6
Death Rates by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	847.2	898.8	798.2	834.5	868.4	802.1	972.9	1,147.4	817.9
Under 1	1,159.3	1,238.4	1,076.6	843.5	906.1	777.9	2,618.4	2,778.4	2,454.4
1 - 14	30.6	32.8	28.3	27.3	29.1	25.5	45.5	50.6	40.4
15 - 24	94.1	138.2	49.0	74.9	107.4	41.2	198.8	312.3	88.4
25 - 34	137.2	197.6	77.9	107.9	155.2	60.5	321.7	486.6	180.9
35 - 44	225.0	298.5	154.3	165.6	215.1	116.7	654.6	972.9	399.0
45 - 54	465.2	588.8	348.5	397.8	495.5	303.4	1,015.6	1,441.6	675.9
55 - 64	1,228.3	1,566.9	920.9	1,220.3	1,437.2	828.6	2,110.3	2,693.0	1,639.0
65 - 74	2,898.3	3,732.7	2,233.3	2,754.8	3,545.3	2,121.8	4,208.2	5,485.3	3,234.1
75 - 84	6,211.1	7,909.0	5,154.9	6,101.9	7,833.1	5,029.8	7,439.5	8,831.2	6,539.5
85 and Over	12,709.7	13,723.6	12,263.8	12,824.2	13,844.6	12,381.6	11,733.4	12,468.0	11,354.0
Age-Adjusted Rate ²	531.5	675.4	412.0	484.2	613.9	377.3	883.6	1,163.5	659.9

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

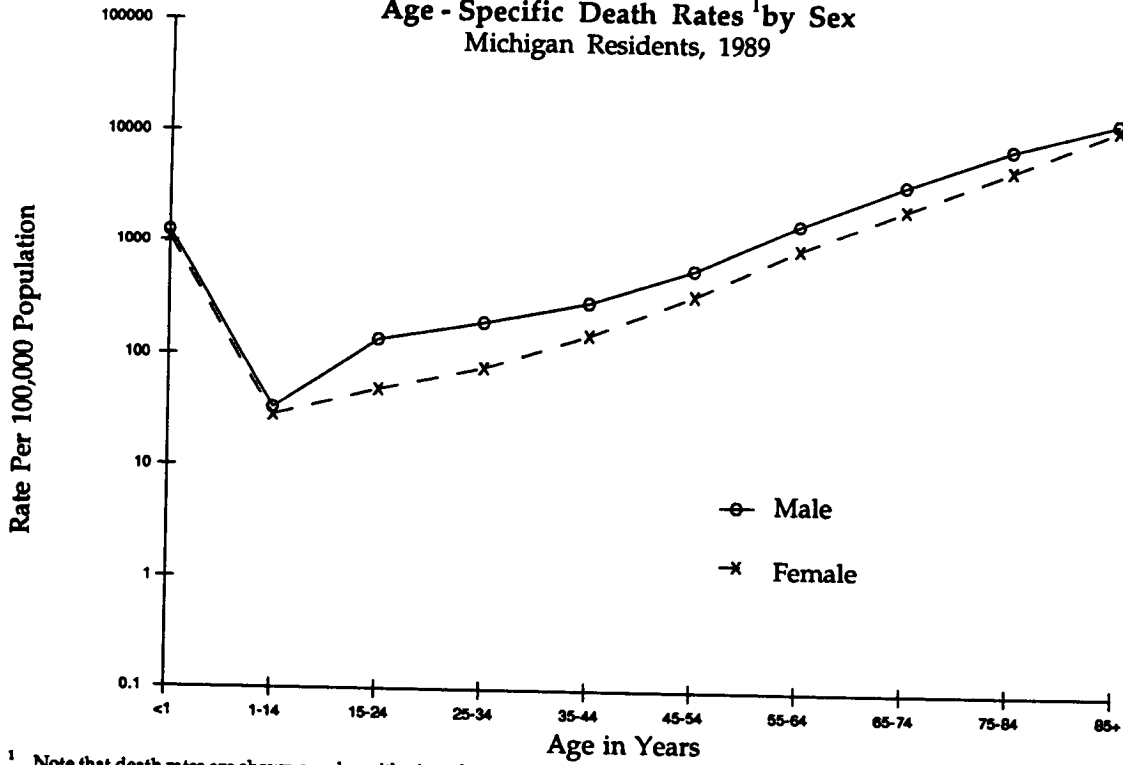
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

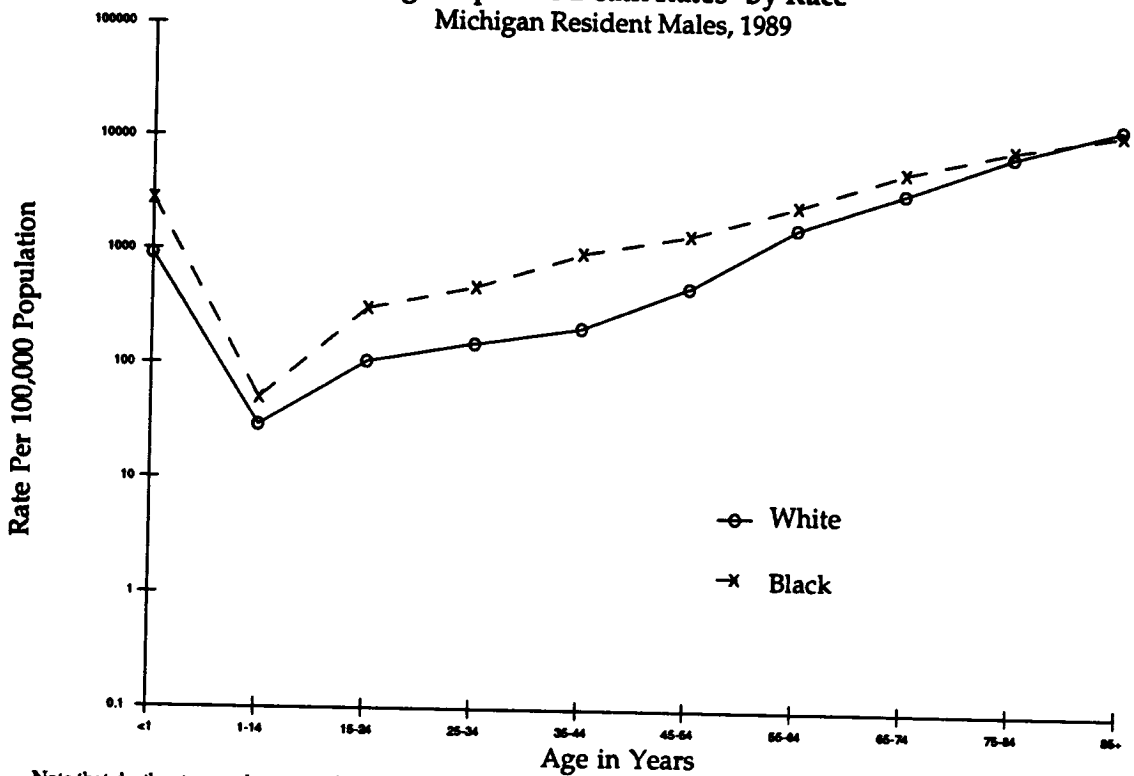
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.2
Age - Specific Death Rates¹ by Sex
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

Figure 2.3
Age - Specific Death Rates¹ by Race
Michigan Resident Males, 1989



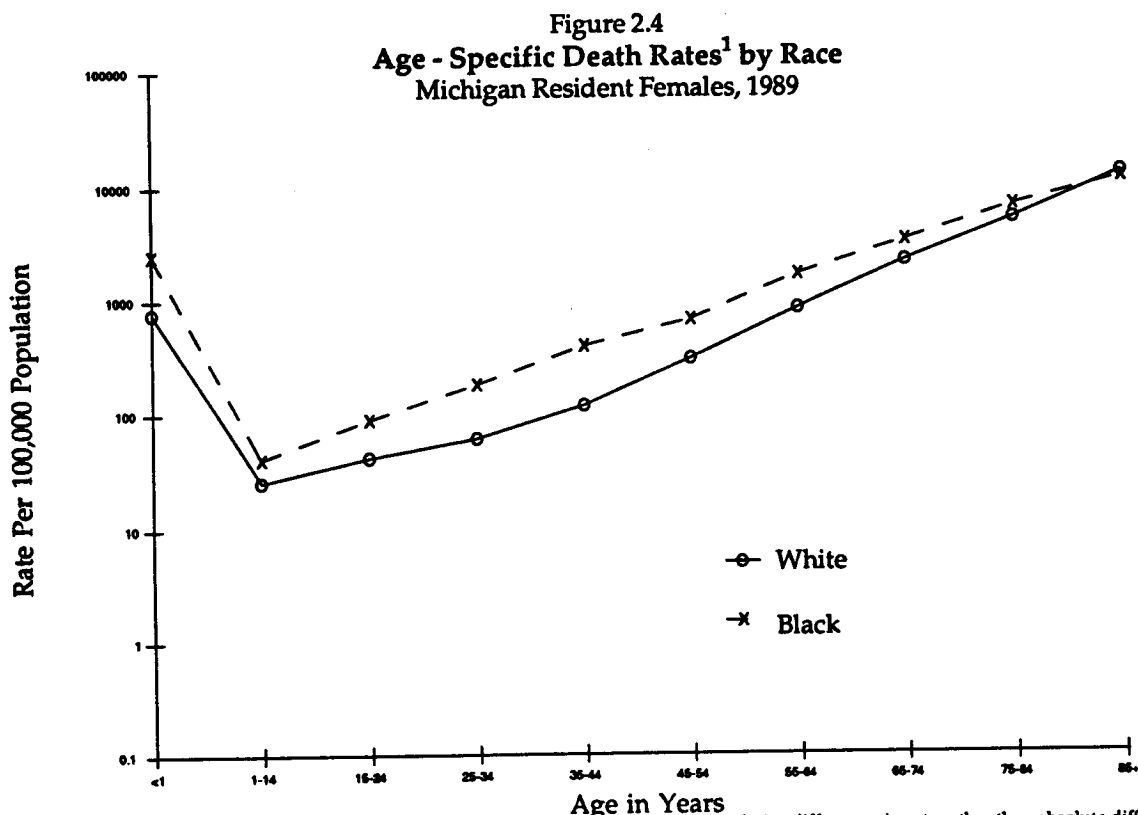
¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

males was 55.8 percent. Rates for black males were above those for white males at all ages below 85 years. The largest relative differential was for persons from 35 through 44 years of age, where the rate for black males was 4.5 times that of white males. Beyond age 84, the rates for white males were higher.

The overall death rate of 1,147.4 per 100,000 for black males was 32.1 percent higher than the rate for white males (868.4). This is a reflection of the younger age distribution of the black male population and the higher death rates for black males under age 85 years, especially in the 15-54 year age groups where rates were 2.9 to 4.5 times higher than rates for their white male counterparts. The age-adjusted death rate for black males, which is a better indicator of relative mortality, was 89.5 percent higher than that for white males.

Rates for black females were higher than those for white females at all ages prior to 85 years (Figure 2.4). For women from 35 through 44 years, the rates for black females were 3.4 times the rates for white females. The death rate for all ages was 802.1 for white females and 817.9 for black females. After adjusting for differences in the age distributions of the populations, the rate for black females was 74.9 percent greater than that for their white counterparts.

In Table 2.7, population and death counts for black and additional other than white persons have been combined for the purpose of calculating "other than white" age-adjusted mortality rates. This grouping was made in order to keep present data comparable with the National historical data which was received only for white and other than white groups in previous years. Efforts are being



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

made to obtain national age-adjusted rates in more narrow racial categories. If or when the data are available in this form, that data will be presented in future versions of this report.

Michigan age-adjusted death rates for other than white persons were considerably higher than comparable rates for white persons throughout the period 1970-1989 (Table 2.7). Age-adjusted rates for other than white males ranged between 34.0 percent (in 1978) and 81.4 percent (in 1989) higher than comparable rates for white males in Michigan. For females this differential was less extreme with the rate for other than white women exceeding that for white women by 34.5 percent (in 1975) to 69.0 percent (in 1989).

Declines have occurred since 1970 both in Michigan and the United States in age-adjusted death rates in each race-sex group. The rates for Michigan and the United States white males and females and the United States male and female persons of other races generally decreased during the twenty years. However, other than white males and females in Michigan were lowest in 1982. Michigan's age-adjusted rate for the population as a whole declined by 25.9 percent between 1970 and 1989 while the estimated decline for the United States was 26.6 percent.

For the other than white population, the relative decline in Michigan was less than it was for the United States through the year 1988, the last year for which national data were available. For Michigan other than white persons, male age-adjusted rates

declined 12.2 percent and female rates declined 17.0 percent between 1970 and 1988. The United States rates for these groups declined by 26.6 and 32.1 percent, respectively, during this period. The Michigan rates for white males and females declined 27.2 and 23.9 percent, respectively. The United States rates for these groups dropped 25.6 and 23.4 percent, respectively, during the same period.

During the period 1970 through 1988, the age-adjusted mortality rates for Michigan white females have been consistently greater than the rates for their national counterparts. For ten of the nineteen years of this period, Michigan white male rates have exceeded the national white male rates. Michigan rates for other than white females were less than the rates for their national counterparts from 1970 through 1977 and greater since then. For Michigan other than white males the age-adjusted mortality rates have been greater than the rates for national other than white males for seventeen of the nineteen years of the period.

Between 1970 and 1989, the minimum age-adjusted death rates were achieved in 1989 for Michigan white males and females and in 1988, the latest available year, for the United States white males. United States white females and other than white males and females achieved their lowest rates in 1987. In Michigan other than white males and females achieved their lowest rates in 1982. The rate for other than white females has increased since 1987 while the rate for other than white males increased between 1988 and 1989.

Table 2.7
Age - Adjusted Death Rates¹ by Race and Sex
Michigan² and United States Residents, 1970 - 1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	717.5	925.9	537.3	685.5	889.4	510.8	961.5	1,201.7	744.8
	1971	707.9	922.9	524.0	672.5	881.2	495.7	969.6	1,226.9	739.3
	1972	711.1	928.2	526.4	677.2	888.0	499.4	954.7	1,220.4	719.6
	1973	694.3	906.3	513.7	658.4	862.6	486.0	949.5	1,223.6	709.2
	1974	660.7	865.1	488.0	628.4	824.6	464.2	885.2	1,153.2	651.4
	1975	640.2	840.3	472.4	610.1	800.5	452.0	846.1	1,122.0	607.8
	1976	636.1	838.5	469.1	607.2	801.4	448.5	835.0	1,100.7	608.1
	1977	614.4	814.8	449.4	587.3	781.6	428.8	802.2	1,049.4	592.9
	1978	606.3	797.8	449.8	578.7	765.7	426.8	798.9	1,025.7	608.9
	1979	585.4	775.6	431.4	557.9	742.5	409.7	773.0	1,007.6	577.6
	1980	588.0	773.9	438.7	557.1	735.5	414.9	797.3	1,045.8	594.3
	1981	567.4	752.1	424.5	542.2	718.5	403.0	742.4	977.6	554.1
	1982	556.9	739.5	416.8	531.9	705.4	395.6	730.9	961.8	546.1
	1983	557.1	735.0	421.2	531.1	698.7	399.3	738.9	973.3	551.7
	1984	564.5	736.5	431.3	533.7	694.8	407.2	779.4	1,024.5	582.0
	1985	570.0	747.3	427.6	534.9	701.2	402.8	801.0	1,063.7	587.9
	1986	566.9	734.8	431.0	529.2	685.4	404.0	815.2	1,076.8	603.9
	1987	556.4	713.6	428.4	516.1	658.8	400.9	822.4	1,094.8	603.5
	1988	545.0	698.0	419.1	504.9	647.2	388.6	813.1	1,054.9	618.0
1989	531.5	675.4	412.0	484.2	613.9	377.3	850.0	1,113.8	637.8	
U.S.	1970	714.3	931.6	532.5	679.6	893.4	501.7	983.4	1,231.4	770.8
	1971	697.6	913.3	519.1	663.7	876.0	489.1	959.5	1,206.7	749.8
	1972	698.0	918.0	516.6	664.0	879.3	487.6	958.6	1,223.1	737.1
	1973	687.3	905.9	508.1	654.0	868.5	479.3	942.2	1,199.5	728.1
	1974	659.5	870.9	487.0	629.0	836.1	461.0	889.6	1,142.4	680.5
	1975	630.4	837.2	462.5	602.2	804.3	439.0	840.6	1,090.1	634.5
	1976	618.5	820.9	455.0	591.3	789.3	432.5	818.5	1,063.4	618.3
	1977	602.1	801.3	441.8	575.7	770.6	419.6	796.7	1,036.1	601.8
	1978	595.0	791.4	437.4	569.5	761.1	416.4	780.0	1,021.0	585.8
	1979	577.0	768.6	423.1	551.9	738.4	402.5	757.1	994.8	566.9
	1980	585.8	777.2	432.6	559.4	745.3	411.1	774.2	1,015.1	582.6
	1981	568.2	753.3	420.4	544.6	724.4	401.4	732.6	964.3	549.4
	1982	553.8	733.1	411.2	531.8	706.0	393.3	704.6	928.4	529.3
	1983	550.5	725.3	411.5	528.0	698.4	392.7	703.1	916.3	535.2
	1984	545.9	716.7	409.6	523.6	689.9	391.3	694.5	904.4	529.0
	1985	546.1	716.8	409.4	523.1	688.7	390.6	697.8	910.4	530.0
	1986	541.7	709.1	406.6	518.0	679.8	387.7	693.1	905.7	524.0
	1987	535.5	698.6	403.3	511.1	668.2	384.1	688.0	898.1	520.1
	1988	535.5	696.7	404.4	509.8	664.3	384.4	692.5	904.3	523.5
1989 ³	524.1	—	—	—	—	—	—	—	—	

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

LEADING CAUSES OF DEATH

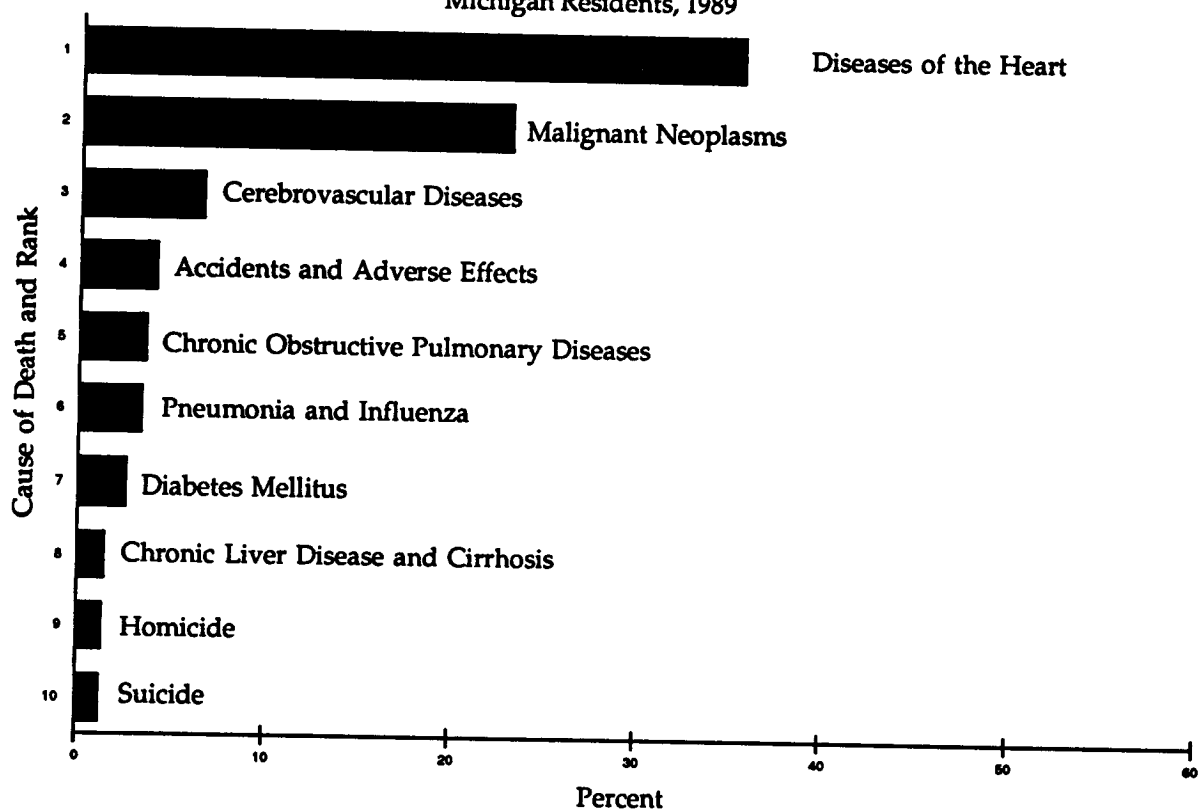
Deaths due to the 10 leading causes accounted for 83.4 percent of all deaths in 1989. Diseases of the heart were the leading cause of death with 35.7 percent of all deaths due to heart diseases. Another 23.2 percent of the deaths were due to cancer. Together these two causes of death were responsible for 58.9 percent of all Michigan resident deaths. The percentage of total deaths resulting from each of the 10 leading causes of death in 1989 is illustrated in Figure 2.5.

Causes of death since 1979 are classified according to the Ninth Revision International Classification of Diseases (ICD-9) published by the World Health Organization. The causes-of-death from 1900 through 1978 were coded based on earlier revisions of the International Classification of Disease.

During the twentieth century there have been nine revisions published in 1900, 1909, 1920, 1929, 1939, 1948, 1955, 1968 and 1979. The first revision was used in Michigan in 1900 to code cause of death starting with 1898 deaths. Between 1929 and 1939 data were coded using the fourth revision. It is unclear if and/or when the second and third revisions were used in Michigan. The fifth through eight revisions were used from 1940 through 1949, 1950 through 1957, 1958 through 1967, and 1968 through 1978, respectively.

The cause-of-death ranking procedure used in Michigan is identical to that used by the National Center for Health Statistics (NCHS). It is based on a "*List of 72 Selected Causes of Death*," which NCHS constructed by combining titles in the "*List of 282 Selected Causes of*

Figure 2.5
Leading Causes of Death
Michigan Residents, 1989



Death." This latter list, which is also used in this publication, was constructed by aggregating the detailed titles of ICD-9.

The numbers of deaths and the death rates for the 10 leading causes for 1989 are shown in Table 2.8. The ranking of the 10 leading causes for 1989 was somewhat different from the rankings for the past ten years. Homicide was again among the 10 leading causes of death, as it was in 1987. It was not among the 10 leading causes of death from 1979 through 1986 and 1988. Atherosclerosis, previously termed arteriosclerosis, dropped out of the 10 leading causes of death in 1989. Previously it had consistently been among the 10 leading causes of death, ranking 7th in 1950 and 8th in 1988. Chronic liver disease and cirrhosis, which was the 10th leading cause of death in 1988, was ranked 8th in 1989. In years prior to 1988 chronic liver disease and cirrhosis had often alternated the 8th and 9th

rankings with atherosclerosis. Suicide, which ranked as the 9th leading cause of death in 1988, was back as the 10th leading cause of death, a position it generally held prior to 1987.

Crude death rates in Michigan were lower in 1989 than in 1988 for six of the ten leading causes. The rates were lower in 1989 for diseases of the heart, cerebrovascular disease, accidents and adverse effects, chronic obstructive pulmonary disease and allied conditions, pneumonia and influenza and suicide. The rates were higher for malignant neoplasms, diabetes mellitus, and homicide.

Through the 7th leading cause of death, the order of the leading causes of death for Michigan and the United States were similar for 1989 (Table 2.8). For the United States, suicide was the 8th leading cause of death with 31,210 attributed deaths and a rate of

Table 2.8
Leading Causes of Death and Cause - Specific Rates
Michigan and United States Residents, 1989

Rank	Cause of Death	Number of Deaths		Rate	
		Michigan	U.S. ¹	Michigan	U.S. ¹
1	Diseases of the Heart	28,031	735,450	302.3	296.3
2	Malignant Neoplasms	18,264	497,220	196.9	200.3
3	Cerebrovascular Diseases	5,173	147,470	55.8	59.4
4	Accidents and Adverse Effects	3,228	94,780	34.8	38.2
5	Chronic Obstructive Pulmonary Diseases and Allied Conditions	2,852	84,350	30.8	34.0
6	Pneumonia and Influenza	2,633	75,240	28.4	30.3
7	Diabetes Mellitus	2,052	46,560	22.1	18.8
8	Chronic Liver Disease and Cirrhosis	1,170	26,380	12.6	10.6
9	Homicide	1,064	23,020	11.5	9.3
10	Suicide	1,043	31,210	11.2	12.6
Sub Total		65,510	1,761,680	706.4	709.8
All Other Causes		13,056	393,320	140.8	158.3
Total		78,566	2,155,000	847.2	868.1

¹ United States data are estimates based on a 10 percent sample of deaths.

12.6. Nationally, chronic liver disease and cirrhosis ranked 9th and homicide was the 10th leading cause of death. The overall Michigan death rate was lower than the national rate. Nevertheless, Michigan's mortality rates for diseases of the heart, diabetes mellitus, homicide and chronic liver disease and cirrhosis were higher than the comparable national rates.

During the years 1968-1978 the Eighth Revision International Classification of Diseases. Adapted for Use in the United States (ICDA-8) was used to classify causes of death. The introduction of the Ninth Revision in 1979 resulted in a change in the ranking of the 10 leading causes between 1978 and 1979. The ranking of the four leading causes of death, heart disease, cancer, stroke, and accidents, was not changed. However, the fifth leading cause of death since 1979, chronic obstructive pulmonary diseases and allied conditions, was a new category, comparable to the Eighth Revision categories of bronchitis, emphysema, asthma, and chronic obstructive lung disease without mention of asthma, bronchitis, or emphysema. This latter category was used increasingly by physicians during the 1970's in preference to more specific categories.

During the years in which the Eighth Revision was used, bronchitis, emphysema, and asthma were grouped together for purposes of ranking, and chronic obstructive lung disease without mention of asthma, bronchitis, or emphysema was not used in ranking. The causes ranked 6th to 10th between 1979 and 1986 are the same as the causes ranked 5th to 9th in 1978, although the order was slightly different in 1981 through 1983 and 1986.

Table 4.8 shows the numbers of deaths and death rates for each year during this century for several major causes including seven causes currently ranked among the 10 leading causes of death. There has been no change in

the ranking of the four leading causes since 1950. From 1950 through 1978 the ranks of 5th and 6th were held by diabetes mellitus and pneumonia, with pneumonia ranking 5th in 14 of the 29 years. For the past twelve years pneumonia has ranked above diabetes.

The 8th leading cause of death in 1989, chronic liver disease and cirrhosis (formerly titled cirrhosis of the liver) was not among the ten leading causes of death in 1950. This cause ranked 10th in 1955 and has been among the ten most frequent causes consistently since 1960. It was the 7th leading cause each year from 1969 through 1978 and between 8th and 9th from 1979 through 1986. In 1987 and 1988 it was the 10th leading cause. Homicide, the 9th leading cause of death in 1989, was first ranked among the 10 leading causes of death in 1972 when it ranked 9th. Suicide, the 10th leading cause of death in 1989, was first ranked among the ten leading causes in 1963 when it ranked 10th. In 1987, suicide had dropped out of the 10 leading causes of death for the first time since 1963. In 1988 suicide was the ninth leading cause of death. In 1989, six of the ten leading causes of death were chronic conditions, one was an acute disease category, and three were external non-disease groupings.

While the most frequent causes of death among all Michigan residents have changed only slightly in recent years, this does not imply similarity in the leading causes of death among residents of different ages, sexes or races. Table 2.9 presents the five most frequent causes of death by age, sex and race. Races other than white and black are not presented in this table because of the small number of deaths in any age-sex-cause of death category.

Malignant neoplasms are among the most frequent causes, being represented in 27 of the 32 age-sex-race groups. Accidents have the next greatest occurrences, being present in 24

of the 32 age-sex-race groups, followed by diseases of the heart in 21 groups. Homicides are next in 14 groupings and cerebrovascular diseases and congenital anomalies in 13 groupings.

The variation in leading causes of death by age is most evident among deaths to infants under one year. Deaths among infants are primarily due to conditions originating in the perinatal period, followed by congenital anomalies and sudden infant death syndrome. External causes of death, including accidents, suicide and homicide, are predominant killers among persons 1 through 34 years of age. Among persons 35 years and over, chronic conditions are responsible for the majority of deaths.

In 1989 homicide was one of the top five leading causes of death for all age groups from 1 to 50 years of age among both black males and females, the leading cause for black males and females 15 to 34 years of age and among black males it was the third leading cause of death over all, representing 9.6 percent of the deaths among this group. Homicide was the third leading cause of death or higher for white males 1-24 years of age. Among white females homicide was the fifth leading cause of death or higher for ages 1-4 and 15-34 years. It was not among the top five causes of death for white males and females in other age categories.

Among white males, accidents were one of the top five leading causes for all ages under 65 years and the leading cause for the ages 1 to 34 years. Suicides were the second leading cause of death for ages 15-34 and fourth for age groups 5-14 and 35-49 among white males. Accidents were one of the top leading causes of death among black males under 35 years of age and the leading cause for ages 1 to 14 years. Suicide was the third leading

cause among black males ages 15 to 24 years and the fourth leading cause for ages 25-34 years.

Among white females, accidents were the leading cause of death for ages 1-34 and the third leading cause for ages 35 to 49 years. Accidents were the fourth leading cause of death for white female infants under 1 year of age. Suicide was among the top five leading causes for ages 15 to 34 years. For black females accidents were one of the top five causes for all age groups under 50 years of age and the leading cause for ages 1-14 years. Suicide was the fourth leading cause of death among black females 15-24 years of age. Diabetes is the fourth leading cause of death for black females and certain conditions originating in the perinatal period is the fifth leading cause.

Among black males 25-34 years of age, HTLV-III/LAV infection (AIDS) was the second leading cause of death with 46 deaths and the fifth leading cause of death for black males 35-49 years of age with 72 deaths. Among white males 25-34 years of age AIDS was the fourth leading cause with 73 deaths. Congenital anomalies are among the leading causes for persons under 15 years of age for all sex-race groups. Pneumonia and influenza are in the top five causes of death for persons 65 and over for each sex-race group. They were the fourth leading cause of death for white females.

Chronic obstructive pulmonary diseases and allied conditions (COPD) are the fifth leading cause of death in Michigan. They are among the top five causes for people aged 50 or over but not among the top five for people under age 50 years. Chronic liver disease and cirrhosis is among the top five causes of death for Michigan residents between 35 and 64, years of age.

Table 2.9
Leading Causes of Death and Cause-Specific Rates by Age, Sex and Race
Michigan Residents, 1989

Total Population ¹			
Age	Rank and Cause of Death	Number	Rate ³
All Ages	1. Diseases of the Heart	28,031	302.3
	2. Malignant Neoplasms	18,264	196.9
	3. Cerebrovascular Diseases	5,173	55.8
	4. Accidents	3,228	34.8
	5. Chronic Obstructive Pulmonary Diseases and Allied Conditions	2,852	30.8
	All Causes	78,566	847.2
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	887	625.1
	2. Congenital Anomalies	277	195.2
	3. Sudden Infant Death Syndrome	254	179.0
	4. Accidents	48	33.8
	5. Diseases of the Heart	20	14.1
	All Causes	1,645	1,159.3
1 - 4 Years	1. Accidents	111	20.2
	2. Congenital Anomalies	25	4.5
	3. Malignant Neoplasms	18	3.3
	4. Homicide	13	2.4
	5. Pneumonia and Influenza	12	2.2
	All Causes	243	44.2
5 - 14 Years	1. Accidents	148	10.9
	2. Malignant Neoplasms	44	3.2
	3. Homicide	24	1.8
	4. Congenital Anomalies	20	1.5
	5. Diseases of the Heart	12	0.9
	All Causes	341	25.1
15 - 24 Years	1. Accidents	559	38.2
	2. Homicide	317	21.6
	3. Suicide	196	13.4
	4. Malignant Neoplasms	79	5.4
	5. Diseases of the Heart	37	2.5
	All Causes	1,379	94.1
25 - 34 Years	1. Accidents	532	34.4
	2. Homicide	342	22.1
	3. Suicide	236	15.3
	4. Malignant Neoplasms	205	13.3
	5. Diseases of the Heart	134	8.7
	All Causes	2,121	137.2
35 - 49 Years	1. Malignant Neoplasms	1,178	88.5
	2. Diseases of the Heart	1,013	76.1
	3. Accidents	519	39.0
	4. Chronic Liver Disease and Cirrhosis	302	22.7
	5. Homicide	253	19.0
	All Causes	4,933	370.8
50 - 64 Years	1. Malignant Neoplasms	4,651	368.2
	2. Diseases of the Heart	4,109	325.3
	3. Cerebrovascular Diseases	478	37.8
	4. Chronic Obstructive Pulmonary Diseases and Allied Conditions	450	35.6
	5. Chronic Liver Disease and Cirrhosis	384	30.4
	All Causes	12,564	994.8
65 and Over	1. Diseases of the Heart	22,702	2,062.9
	2. Malignant Neoplasms	12,089	1,098.5
	3. Cerebrovascular Diseases	4,445	403.9
	4. Chronic Obstructive Pulmonary Diseases and Allied Conditions	2,314	210.3
	5. Pneumonia and Influenza	2,299	208.9
	All Causes	55,336	5,028.4

¹ Subtotals by sex and race do not add to the grand total as the race was not stated on records for 43 males and 33 females. In addition, the sex was not stated on 20 records for white and 4 other than white persons. Age groups do not add to respective totals because records with age not stated are included only in the total.

² Rates may not agree with those shown elsewhere in this section since records of unknown sex and race were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table.

³ Rate per 100,000 population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.9
Leading Causes of Death and Cause-Specific Rates by Age, Sex and Race
 Michigan Residents, 1989 (continued)

White Males ²			
Age	Rank and Cause of Death	Number	Rate ³
All Ages	1. Diseases of the Heart	12,206	314.8
	2. Malignant Neoplasms	8,201	211.5
	3. Accidents	1,739	44.8
	4. Cerebrovascular Diseases	1,708	44.0
	5. Chronic Obstructive Pulmonary Diseases and Allied Conditions	1,481	38.2
	All Causes	33,628	867.2
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	242	420.9
	2. Congenital Anomalies	109	189.6
	3. Sudden Infant Death Syndrome	95	165.2
	4. Accidents	15	26.1
	5. Diseases of the Heart	7	12.2
	All Causes	519	902.6
1 - 4 Years	1. Accidents	48	20.9
	2. Congenital Anomalies	9	3.9
	3. Pneumonia and Influenza	5	*
	4-6. Meningitis - Malignant Neoplasms - Homicide	3	*
	All Causes	90	39.2
5 - 14 Years	1. Accidents	74	12.9
	2. Malignant Neoplasms	19	3.3
	3. Congenital Anomalies	8	1.4
	4. Suicide	6	1.0
	5-6. Homicide - Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	*
	All Causes	143	24.9
15 - 24 Years	1. Accidents	355	57.3
	2. Suicide	139	22.4
	3. Homicide	39	6.3
	4. Malignant Neoplasms	35	5.7
	5. Diseases of the Heart	18	2.9
	All Causes	665	107.4
25 - 34 Years	1. Accidents	349	53.0
	2. Suicide	167	25.4
	3. Malignant Neoplasms	85	12.9
	4. HTLV-III/LAV Infection (AIDS)	73	11.1
	5. Diseases of the Heart	68	10.3
	All Causes	1,021	155.0
35 - 49 Years	1. Diseases of the Heart	564	71.0
	2. Malignant Neoplasms	406	51.1
	3. Accidents	305	38.4
	4. Suicide	171	21.5
	5. Chronic Liver Disease and Cirrhosis	108	13.6
	All Causes	2,098	264.3
50 - 64 Years	1. Diseases of the Heart	2,315	429.1
	2. Malignant Neoplasms	2,092	387.8
	3. Chronic Obstructive Pulmonary Diseases and Allied Conditions	214	39.7
	4. Chronic Liver Disease and Cirrhosis	208	38.6
	5-6. Accidents - Cerebrovascular Diseases	190	35.2
	All Causes	6,153	1,140.6
65 and Over	1. Diseases of the Heart	9,228	2,274.4
	2. Malignant Neoplasms	5,561	1,370.6
	3. Cerebrovascular Diseases	1,444	355.9
	4. Chronic Obstructive Pulmonary Diseases and Allied Conditions	1,238	305.1
	5. Pneumonia and Influenza	956	235.6
	All Causes	22,937	5,653.2

¹ Subtotals by sex and race do not add to the grand total as the race was not stated on records for 43 males and 33 females. In addition, the sex was not stated on 20 records for white and 4 other than white persons. Age groups do not add to respective totals because records with age not stated are included only in the total.

² Rates may not agree with those shown elsewhere in this section since records of unknown sex and race were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table.

³ Rate per 100,000 population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.9
Leading Causes of Death and Cause-Specific Rates by Age, Sex and Race
 Michigan Residents, 1989 (continued)

Black Males ²			
Age	Rank and Cause of Death	Number	Rate ³
All Ages	1. Diseases of the Heart	1,857	321.5
	2. Malignant Neoplasms	1,321	228.7
	3. Homicide	636	110.1
	4. Accidents	287	49.7
	5. Cerebrovascular Diseases	280	48.5
	All Causes	6,618	1,145.9
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	236	1,811.3
	2. Sudden Infant Death Syndrome	40	307.0
	3. Congenital Anomalies	26	199.6
	4. Accidents	12	92.1
	5. Pneumonia and Influenza	6	46.1
	All Causes	360	2,763.1
1 - 4 Years	1. Accidents	14	31.0
	2-3. Certain Conditions Originating in the Perinatal Period - Homicide	4	*
	4. Congenital Anomalies	3	*
	5-6. Malignant Neoplasms - Pneumonia and Influenza	2	*
	All Causes	34	75.2
	5 - 14 Years	1. Accidents	15	13.5
2. Homicide		11	9.9
3. Malignant Neoplasms		4	*
4. Pneumonia and Influenza		3	*
5-6. Congenital Anomalies - Chronic Obstructive Pulmonary Diseases and Allied Conditions		2	*
All Causes		45	40.5
15 - 24 Years	1. Homicide	227	202.0
	2. Accidents	45	40.0
	3. Suicide	28	24.9
	4. Diseases of the Heart	10	8.9
	5. Malignant Neoplasms	8	7.1
	All Causes	351	312.3
25 - 34 Years	1. Homicide	204	210.8
	2. HTLV-III/LAV Infection (AIDS)	46	47.5
	3. Accidents	34	35.1
	4. Suicide	25	25.8
	5. Chronic Liver Disease and Cirrhosis	23	23.8
	All Causes	470	485.6
35 - 49 Years	1. Diseases of the Heart	177	182.4
	2. Homicide	142	146.3
	3. Malignant Neoplasms	126	129.9
	4. Chronic Liver Disease and Cirrhosis	112	115.4
	5. HTLV-III/LAV Infection (AIDS)	72	74.2
	All Causes	1,022	1,053.3
50 - 64 Years	1. Diseases of the Heart	483	807.3
	2. Malignant Neoplasms	390	651.9
	3. Cerebrovascular Diseases	62	103.6
	4. Chronic Liver Disease and Cirrhosis	60	100.3
	5. Diabetes Mellitus	54	90.3
	All Causes	1,382	2,310.0
65 and Over	1. Diseases of the Heart	1,164	2,758.0
	2. Malignant Neoplasms	772	1,829.2
	3. Cerebrovascular Diseases	167	395.7
	4. Chronic Obstructive Pulmonary Diseases and Allied Conditions	120	284.3
	5. Pneumonia and Influenza	110	260.6
	All Causes	2,954	6,999.2

¹ Subtotals by sex and race do not add to the grand total as the race was not stated on records for 43 males and 33 females. In addition, the sex was not stated on 20 records for white and 4 other than white persons. Age groups do not add to respective totals because records with age not stated are included only in the total.

² Rates may not agree with those shown elsewhere in this section since records of unknown sex and race were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table.

³ Rate per 100,000 population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.9
Leading Causes of Death and Cause-Specific Rates by Age, Sex and Race
 Michigan Residents, 1989 (continued)

White Females ²			
Age	Rank and Cause of Death	Number	Rate ³
All Ages	1. Diseases of the Heart	11,962	295.9
	2. Malignant Neoplasms	7,567	187.2
	3. Cerebrovascular Diseases	2,723	67.4
	4. Pneumonia and Influenza	1,224	30.3
	5. Chronic Obstructive Pulmonary Diseases and Allied Conditions	1,098	27.2
	All Causes	32,383	801.1
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	199	362.5
	2. Congenital Anomalies	102	185.8
	3. Sudden Infant Death Syndrom	66	120.2
	4. Accidents	14	25.5
	5. Diseases of the Heart	8	14.6
	All Causes	423	770.6
1 - 4 Years	1. Accidents	34	15.5
	2. Congenital Anomalies	12	5.5
	3. Malignant Neoplasms	10	4.6
	4-6. Certain Conditions Originating in the Perinatal Period - Homicide - Pneumonia and Influenza	3	*
	All Causes	88	40.1
	5 - 14 Years	1. Accidents	42	7.7
2. Malignant Neoplasms		17	3.1
3. Congenital Anomalies		7	1.3
4. Diseases of the Heart		6	1.1
5-6. Cerebrovascular Diseases - Pneumonia and Influenza		3	*
All Causes		106	19.5
15 - 24 Years	1. Accidents	130	21.8
	2. Malignant Neoplasms	28	4.7
	3. Suicide	20	3.3
	4. Congenital Anomalies	13	2.2
	5. Homicide	11	1.8
	All Causes	246	41.2
25 - 34 Years	1. Accidents	122	18.6
	2. Malignant Neoplasms	81	12.3
	3. Suicide	32	4.9
	4. Diseases of the Heart	28	4.3
	5. Homicide	21	3.2
	All Causes	397	60.5
35 - 49 Years	1. Malignant Neoplasms	501	62.1
	2. Diseases of the Heart	154	19.1
	3. Accidents	112	13.9
	4. Cerebrovascular Diseases	48	5.9
	5. Chronic Liver Disease and Cirrhosis	47	5.8
	All Causes	1,200	148.7
50 - 64 Years	1. Malignant Neoplasms	1,808	313.0
	2. Diseases of the Heart	938	162.4
	3. Chronic Obstructive Pulmonary Diseases and Allied Conditions	184	31.9
	4. Cerebrovascular Diseases	157	27.2
	5. Diabetes Mellitus	129	22.3
	All Causes	3,897	694.5
65 and Over	1. Diseases of the Heart	10,822	1,846.9
	2. Malignant Neoplasms	5,122	874.1
	3. Cerebrovascular Diseases	2,494	425.6
	4. Pneumonia and Influenza	1,126	192.2
	5. Chronic Obstructive Pulmonary Diseases and Allied Conditions	888	151.5
	All Causes	26,025	4,441.5

¹ Subtotals by sex and race do not add to the grand total as the race was not stated on records for 43 males and 33 females. In addition, the sex was not stated on 20 records for white and 4 other than white persons. Age groups do not add to respective totals because records with age not stated are included only in the total.

² Rates may not agree with those shown elsewhere in this section since records of unknown sex and race were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table.

³ Rate per 100,000 population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.9
 Leading Causes of Death and Cause-Specific Rates by Age, Sex and Race
 Michigan Residents, 1989 (continued)

Black Females ²			
Age	Rank and Cause of Death	Number	Rate ³
All Ages	1. Diseases of the Heart	1,801	276.7
	2. Malignant Neoplasms	1,041	160.0
	3. Cerebrovascular Diseases	426	65.5
	4. Diabetes Mellitus	211	32.4
	5. Certain Conditions Originating in the Perinatal Period	203	31.2
	All Causes	5,318	817.2
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	201	1,581.2
	2. Sudden Infant Death Syndrome	44	346.1
	3. Congenital Anomalies	30	236.0
	4. Accidents	6	47.2
	5. Nephritis, Nephrotic Syndrome and Nephrosis	3	*
	All Causes	311	2,446.5
1 - 4 Years	1. Accidents	12	27.0
	2-3. Malignant Neoplasms - Homicide	3	*
	4. Certain Conditions Originating in the Perinatal Period	2	*
	5-7. Pneumonia and Influenza - Congenital Anomalies - Cerebrovascular Diseases	1	*
	All Causes	26	58.5
	5 - 14 Years	1. Accidents	11
3. Homicide		5	*
3. Malignant Neoplasms		4	*
4-5. Pneumonia and Influenza - Congenital Anomalies		2	*
All Causes		36	33.0
15 - 24 Years		1. Homicide	37	32.1
	2. Accidents	23	19.9
	3. Malignant Neoplasms	7	6.1
	4. Suicide	6	5.2
	5-7. Complications of Pregnancy, Childbirth and the Puerperium - Diseases of the Heart - Pneumonia and Influenza	3	*
	All Causes	102	88.4
25 - 34 Years	1. Homicide	48	42.3
	2-3. Accidents - Diseases of the Heart	17	15.0
	4. Malignant Neoplasms	15	13.2
	5. Cerebrovascular Diseases	9	7.9
	All Causes	205	180.9
	35 - 49 Years	1. Malignant Neoplasms	122	100.9
2. Diseases of the Heart		98	81.0
3. Homicide		40	33.1
4. Cerebrovascular Diseases		38	31.4
5-6. Accidents		31	25.6
All Causes		542	448.2
50 - 64 Years	1. Diseases of the Heart	324	434.9
	2. Malignant Neoplasms	312	418.8
	3. Cerebrovascular Diseases	63	84.6
	4. Diabetes Mellitus	50	67.1
	5. Chronic Liver Disease and Cirrhosis	28	37.6
	All Causes	987	1,324.8
65 and Over	1. Diseases of the Heart	1,356	2,247.9
	2. Malignant Neoplasms	578	958.2
	3. Cerebrovascular Diseases	312	517.2
	4. Diabetes Mellitus	137	227.1
	5. Pneumonia and Influenza	96	159.1
	All Causes	3,108	5,152.2

¹ Subtotals by sex and race do not add to the grand total as the race was not stated on records for 43 males and 33 females. In addition, the sex was not stated on 20 records for white and 4 other than white persons. Age groups do not add to respective totals because records with age not stated are included only in the total.

² Rates may not agree with those shown elsewhere in this section since records of unknown sex and race were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table.

³ Rate per 100,000 population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

DISEASES OF THE HEART

The leading cause of death, heart disease, caused the death of 28,031 Michigan residents in 1989. That was more than the number of deaths from the next three largest categories combined. There were 2,187 less deaths from heart disease in 1989 than in 1988. The crude rate of 302.3 deaths per 100,000 population from this cause in 1989 is 7.6 percent lower than the rate of 327.0 in 1988.

The median age of persons who died from heart disease was 77 years, compared to a median of 73 years for deaths from all causes. Of the 28,031 deaths due to diseases of the heart, 50.5 percent were to males. The median age at death for males was 73 years compared to 81 years for females. The median age of 74 years for white males exceeded that for black males and males of other races by 5 years. The median age at death for white females

was 82 years, 7 years above that for black females and 8 years above that for females of other races (Table 2.10).

Table 2.11 presents death rates for diseases of the heart by age, race and sex. Note that the death rate associated with this cause rose markedly with advancing age. Heart disease was the underlying cause of death for 21 persons below 5 years of age or about 1.1 percent of all deaths in this age group. In contrast, 46.7 percent of all deaths in the age group 85 and over were attributed to this cause in 1989. The heart disease death rate was 5,933.7 per 100,000 persons over 84 years of age in 1989.

Examination of Table 2.11 reveals that the heart disease death rate for males was greater than that for females (313.9 compared to 291.3

Table 2.10
Deaths Due to Diseases of the Heart by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
< 1	20	9	11	15	7	8	4	2	2	1	-	1
1-4	1	1	-	-	-	-	1	1	-	-	-	-
5-9	3	2	1	2	2	-	-	-	-	1	-	-
10-14	9	2	7	8	2	6	1	-	1	-	-	-
15-19	13	10	3	7	6	1	6	4	2	-	-	-
20-24	24	19	5	16	12	4	7	6	1	1	1	-
25-29	40	23	17	30	19	11	9	4	5	1	-	1
30-34	94	65	29	66	49	17	28	16	12	-	-	-
35-39	169	121	48	113	83	30	54	37	17	2	1	1
40-44	315	241	73	215	176	39	88	57	31	11	8	3
45-49	529	390	137	390	305	85	133	83	50	4	2	2
50-54	800	579	220	609	449	160	181	123	58	9	7	2
55-59	1,202	819	382	950	677	273	239	134	105	12	8	4
60-64	2,107	1,428	676	1,694	1,189	505	388	226	161	23	13	10
65-69	2,989	1,877	1,108	2,527	1,619	908	443	248	195	15	10	5
70-74	3,716	2,176	1,532	3,162	1,884	1,277	525	281	244	22	11	11
75-79	4,171	2,225	1,943	3,647	1,974	1,673	509	246	263	12	5	7
80-84	4,468	1,928	2,536	3,976	1,721	2,255	461	190	271	27	17	10
85-89	3,746	1,344	2,397	3,402	1,213	2,189	318	119	199	21	12	9
90+	3,612	899	2,710	3,338	817	2,520	264	80	184	8	2	6
Not Stated	3	2	1	3	2	1	-	-	-	-	-	-
All Ages	28,031	14,160	13,836	24,170	12,206	11,962	3,659	1,857	1,801	170	97	73
Median Age At Last Birthday	77	73	81	78	74	82	72	69	75	71	69	74

¹ Deaths with race and/or sex not stated are included only in the total column.

Table 2.11
Heart Disease Death Rates by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	302.3	313.9	291.3	305.5	315.2	296.3	298.2	321.9	277.2
Under 1	14.1	12.4	15.9	13.3	12.2	14.6	*	*	*
1 - 14	0.7	0.5	0.9	0.6	*	0.8	*	*	*
15 - 24	2.5	3.9	1.1	1.9	2.9	0.8	5.7	8.9	*
25 - 34	8.7	11.5	5.9	7.3	10.3	4.3	17.6	20.7	15.0
35 - 44	36.4	55.6	17.9	28.6	45.5	11.9	88.3	131.2	53.8
45 - 54	137.8	207.4	72.0	118.4	182.1	56.9	297.5	440.0	183.9
55 - 64	405.8	579.5	248.0	365.9	538.6	206.9	731.4	940.2	562.5
65 - 74	1,054.0	1,438.7	747.4	999.1	1,382.9	691.7	1,563.6	1,976.4	1,248.7
75 - 84	2,538.7	3,184.4	2,137.0	2,475.3	3,137.3	2,065.4	3,213.4	3,674.1	2,915.5
85 and Over	5,933.7	5,930.2	5,935.2	5,969.4	5,947.2	5,979.0	5,639.4	5,651.8	5,633.0
Age-Adjusted Rate ²	167.3	222.5	121.9	156.7	210.9	111.8	257.0	325.5	203.9

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970. Census and the categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

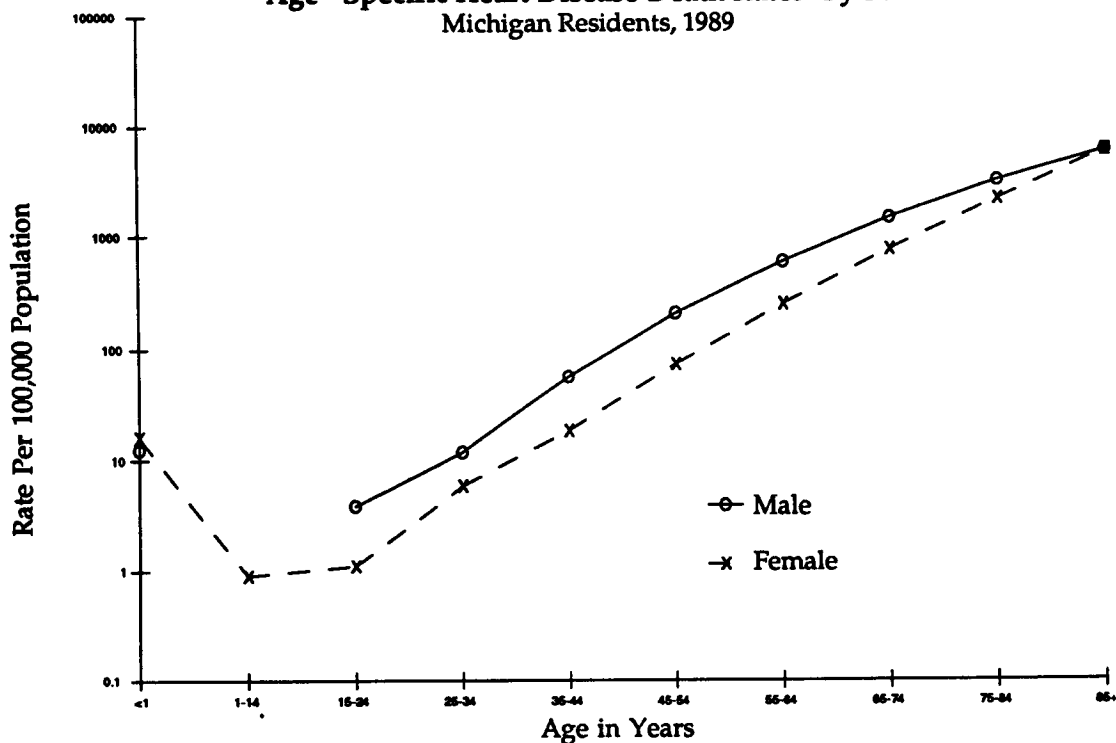
per 100,000 population). The relationship between rates for males and females is graphically displayed in Figure 2.6. The age-specific heart disease death rates for males were higher than female rates for all age groups except persons 1 to 14 years of age and 85 years of age and over. For persons 1 to 14 years of age the rate for females was 80.0 percent higher than the male rate. For persons 85 years of age and over, the rate for females was nearly identical to the rate for males. The greatest relative differentials occurred from ages 15 through 64 with rates for males ranging from 1.9 to 3.5 times the corresponding rates for females. The gap between rates for males and females became progressively smaller after age 64. For individuals over 84 years of age the female death rate was just 0.1 percent above the male rate. The age-adjusted death rate for males was 1.8 times that for females.

A comparison of 1989 heart disease death rates for males by race is graphically presented in Figure 2.7. Rates for black males were higher than those for white males for all age intervals below 85 for which rates can be calculated. The rate for white males across all ages was 315.2 compared to 321.9 for black males. The age-adjusted heart disease death rate for white males in 1989 was 35.2 percent below the rate for black males.

Heart disease death rates for white and black females are displayed in Figure 2.8. Rates for black females were greater than those for white females for all ages with the relative differentials decreasing with advancing age over 44 years of age.

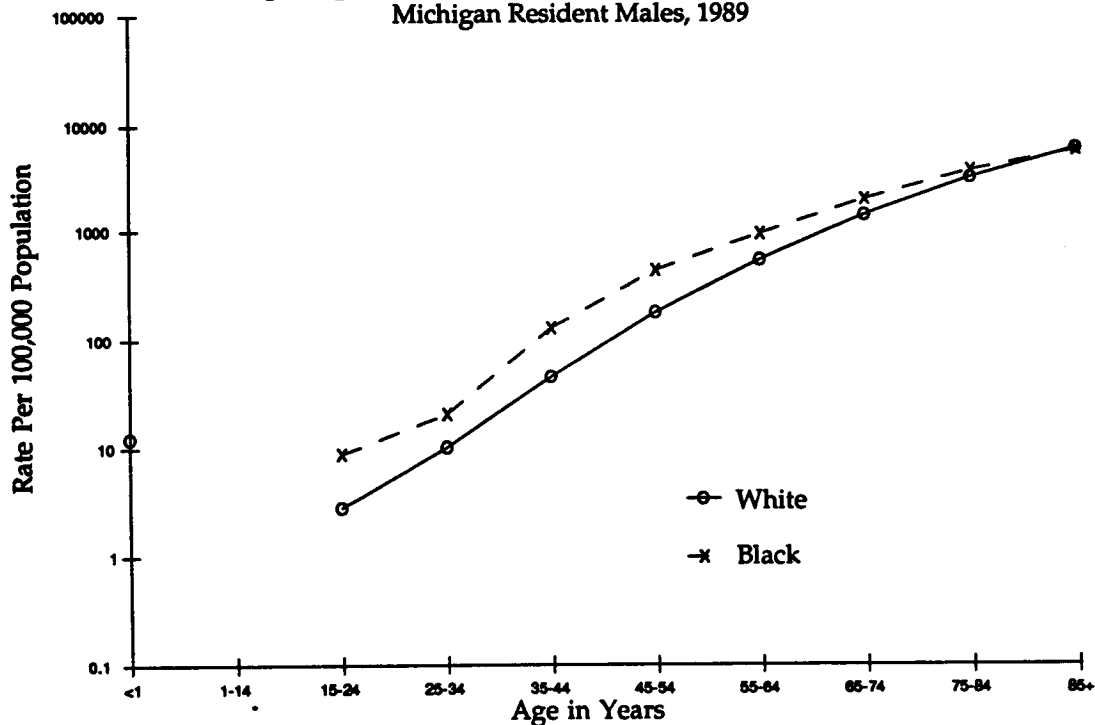
Although the rate for white females of all ages (296.3) was greater than the comparable rate for black females (277.2), this relationship is reversed when the differing age distribu-

Figure 2.6
 Age - Specific Heart Disease Death Rates¹ by Sex
 Michigan Residents, 1989



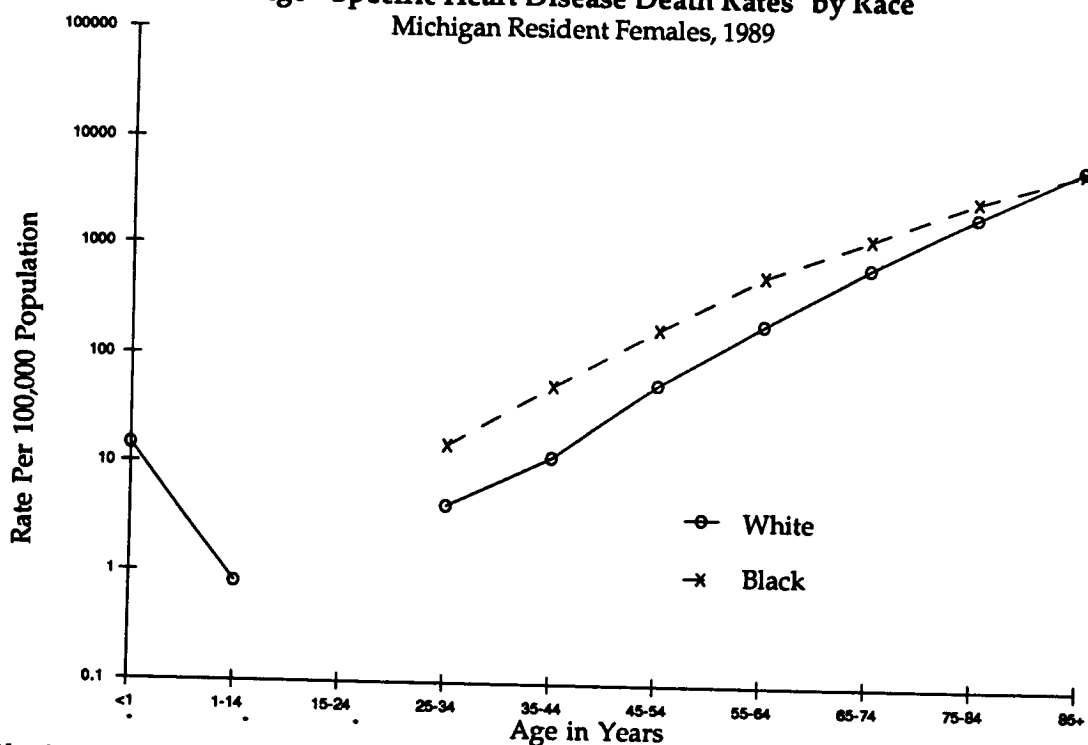
¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

Figure 2.7
 Age - Specific Heart Disease Death Rates¹ by Race
 Michigan Resident Males, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
 * Rate is considered statistically unreliable.

Figure 2.8
Age - Specific Heart Disease Death Rates¹ by Race
Michigan Resident Females, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
• Rate is considered statistically unreliable.

tions of the two populations are considered. The age-adjusted rate for black females was 82.4 percent higher than that for white females.

In Table 2.12, the numbers of heart disease deaths are presented by ancestry of the deceased. Of the specified ancestry groups, the largest number of heart disease deaths occurred to individuals of European ancestry, 20,639 deaths. The next largest number of deaths occurred among individuals of African ancestry (3,358). Individuals of American Indian ancestry accounted for 203 deaths, and Arab Asians and Hispanics accounting for 195 and 165 deaths, respectively.

In 1900 the crude heart disease death rate in Michigan was 117.1, the lowest rate of this century (Figure 2.9). Heart disease death rates rose through the time period 1900-1950,

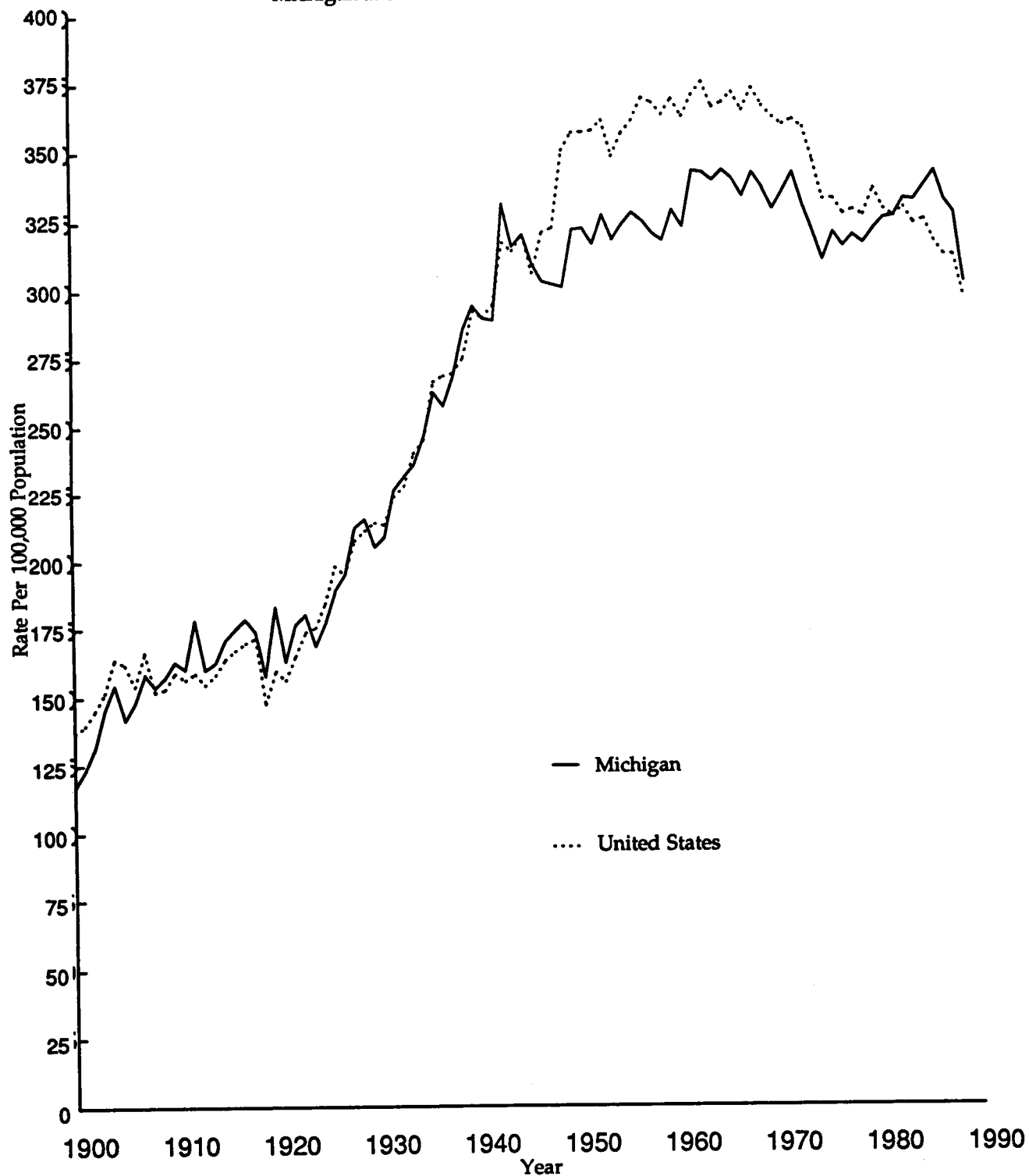
remained relatively stable between 1950 and 1961, peaked between 1962 and 1972, decreased between 1973 and 1979 and increased after 1979. The highest rate observed during the century was 343.1 in 1965. The next highest rate of 342.1 for 1968 was 0.3 percent below the peak rate observed in 1965. Rates then generally fell between 1968 and

Table 2.12
Deaths Due to Diseases of the Heart
by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	3,358	12.0
American Indian	203	0.7
Arabian Asian	195	0.7
European	20,639	73.6
Hispanic	165	0.6
Other (includes American)	2,249	8.0
Unknown	1,222	4.4
Total	28,031	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.9
Heart Disease Death Rates
 Michigan and United States¹ Residents, 1900 - 1989²



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² Heart disease death rates since 1900 are suitable for general comparison over time but detailed study (such as time series) requires special consideration. See Technical Notes.

1975. Rates then began to increase, reaching a peak of 342.0 in 1986. The rate then declined 11.6 percent to 302.3 in 1989.

The heart disease death rate for Michigan was consistently close to the national rate until 1947. From 1947 through 1981 the crude rate for Michigan was below that of the nation but by a progressively lesser degree in later years. From 1982 through 1989 rates for Michigan were above the national rates with the 1989 Michigan rate of 302.3, 2.0 percent above the national provisional rate of 296.3.

Age-adjusted death rates for diseases of the heart since 1970 are presented in Table 2.13. These data indicate a downward trend in heart disease death rates for the Michigan population as a whole and for white males and females. Between 1970 and 1975 the rates decreased for other than white males and females. However, since 1975 the rates have been fluctuated up and down for the two groups. Between 1970 and 1972 the overall rate for Michigan remained constant. Since 1972 the rate has declined each year, with the exception of 1976 and 1984. The age-adjusted death rate for the nation declined each year between 1970 and 1989 except 1980. The age-adjusted rate for Michigan declined by 35.8 percent between 1970 and 1989 whereas the age-adjusted rate for the nation declined by 38.5 percent (see Technical Notes). Since 1970, the age-adjusted rate for Michigan has been consistently above that for the nation with the 1989 Michigan rate 7.3 percent above the national provisional rate.

Age-adjusted rates for other than white females have been well above those for white females in both Michigan and the United States. In 1989 the Michigan age-adjusted heart disease death rate for other than white females exceeded the rate for white females by 77.5 percent.

In Michigan age-adjusted rates for other than white males were less than those for white males for most years between 1970 and 1977. After 1977 the Michigan rates for other than white males have been greater than rates for white males. In 1989 the rate for other than white males was 50.1 percent higher than the rate for white males. Nationally the rates were highest generally for other than white males, next highest for white males, then for other than white females and lowest for white females each year from 1970 to 1988.

The most prevalent type of heart disease death was old myocardial infarction and other forms of chronic ischemic heart disease (10,486 deaths in 1989) (Table 2.14). The second most frequent was acute myocardial infarction, commonly referred to as a "coronary". In 1989 there were 9,470 deaths attributed to this cause. Together, these causes accounted for 71.2 percent of all Michigan resident deaths from heart disease. Of the remaining 8,075 heart disease deaths, 76.4 percent were attributed to all other and ill-defined forms of heart disease (4,985 deaths) and heart failure (1,187 deaths).

The probabilities of eventually dying from heart disease, based on Michigan resident death data from 1987, 1988 and 1989 were 0.388 for males and 0.412 for females at year of birth. The chance associated with dying from heart disease increases steadily for both sexes with advancing age as certain competing causes of death become less likely. By age 85 and above, the observed probability was 0.454 for males and 0.503 for females. At all ages the probability of death eventually being caused by heart disease was greater for females. The differences in the probability of eventual death due to heart disease for males and females were smallest from ages 40 to 49. The higher probability for females reflects smaller chances of death due to some cause other than heart disease (Figure 2.10).

Table 2.13
Age-Adjusted Heart Disease Death Rates¹ by Race and Sex
 Michigan² and United States Residents, 1970 - 1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	260.4	352.2	181.2	257.0	352.5	175.1	280.6	336.6	230.2
	1971	259.7	358.7	175.5	255.9	359.0	168.8	281.8	339.7	229.4
	1972	260.5	355.2	180.3	256.7	353.9	174.7	284.1	356.1	220.6
	1973	247.7	339.2	170.8	243.8	337.8	165.0	273.0	340.4	213.9
	1974	235.6	321.7	163.7	232.6	321.8	158.2	253.8	311.5	203.8
	1975	226.2	312.2	154.5	224.7	313.6	150.8	231.3	290.6	180.2
	1976	228.0	316.6	155.4	225.7	316.9	151.2	241.8	306.6	186.8
	1977	221.5	308.4	150.7	218.2	308.1	145.1	242.6	302.1	192.1
	1978	219.0	302.4	151.2	214.9	301.0	145.2	247.8	307.9	197.8
	1979	215.4	298.5	148.5	211.2	296.2	143.0	243.2	310.7	187.7
	1980	214.9	295.5	150.6	210.0	292.2	144.4	249.5	317.5	195.2
	1981	204.4	288.9	138.9	201.2	287.3	132.7	230.7	294.5	179.8
	1982	199.7	279.8	138.6	196.4	278.0	132.2	227.5	287.9	180.2
	1983	198.6	273.3	141.4	195.1	271.0	134.8	229.7	286.0	185.6
	1984	200.5	271.7	145.5	194.5	265.7	138.4	249.0	313.3	197.1
	1985	199.8	272.2	141.9	193.1	265.5	135.3	247.8	321.1	189.4
	1986	196.7	262.3	143.9	188.8	254.4	136.1	254.9	322.0	201.5
	1987	188.7	252.1	137.6	180.5	242.9	130.1	249.7	323.1	191.7
	1988	181.4	240.4	133.5	172.0	231.4	123.6	252.7	310.6	207.1
	1989	167.3	222.5	121.9	156.7	210.9	111.8	250.1	316.5	198.4
U.S.	1970	253.6	348.5	175.2	249.1	347.6	167.8	288.9	350.8	236.6
	1971	249.3	344.1	171.7	245.1	343.5	164.8	280.3	343.2	227.8
	1972	247.9	343.1	170.3	243.5	341.8	163.4	281.1	348.7	225.8
	1973	242.4	337.3	165.6	237.9	336.0	158.7	276.9	343.6	222.5
	1974	230.3	321.3	157.1	226.4	320.3	150.8	259.7	325.1	206.8
	1975	217.8	305.7	147.4	214.5	305.1	141.9	241.8	305.9	190.1
	1976	213.6	300.2	144.4	210.4	299.6	139.2	237.0	301.6	185.1
	1977	206.9	291.3	139.9	203.3	290.2	134.4	233.0	296.3	182.4
	1978	203.8	286.2	138.5	200.2	284.7	133.3	229.4	294.6	178.1
	1979	199.5	278.9	136.8	195.6	276.8	131.3	227.4	291.8	177.3
	1980	202.0	280.4	140.3	197.6	277.5	134.6	234.2	299.6	183.5
	1981	195.0	271.2	135.1	191.1	268.8	129.8	222.6	286.1	173.5
	1982	190.5	264.4	132.5	186.8	262.1	127.4	215.8	278.7	167.9
	1983	188.8	260.4	132.3	184.6	257.8	126.7	217.8	277.4	171.8
	1984	183.6	252.2	129.3	179.5	249.5	124.0	211.2	268.8	166.8
	1985	180.5	247.7	127.3	176.1	244.5	121.7	210.4	268.4	165.8
	1986	175.0	238.2	124.6	170.4	234.8	119.0	205.3	260.1	162.8
	1987	169.6	229.6	121.7	165.0	225.9	116.3	199.9	253.6	158.0
	1988	166.3	224.5	119.8	161.5	220.5	114.2	197.8	250.2	157.2
	1989 ³	155.9	—	—	—	—	—	—	—	—

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.14
Deaths Due to Diseases of the Heart by Specific Cause
Michigan Residents, 1989

282 List ¹ Number	Cause of Death	Number of Deaths	Percent
139	Old Myocardial Infarction and Other Forms of Chronic Ischemic Heart Disease	10,486	37.4
136	Acute Myocardial Infarction	9,470	33.8
148	All Other and Ill-Defined Forms of Heart Disease	4,985	17.8
146	Heart Failure	1,187	4.2
133	Hypertensive Heart Disease	654	2.3
140	Diseases of Pulmonary Circulation	356	1.3
144	Aortic Valve Disorders	237	0.8
128	Diseases of Mitral Valve	112	0.4
135	Hypertensive Heart and Renal Disease	95	0.3
145	All Other Diseases of Endocardium	84	0.3
143	Mitral Valve Disorder	65	0.2
131	All Other Chronic Rheumatic Heart Disease	58	0.2
137	Other Acute and Subacute Forms of Ischemic Heart Disease	52	0.2
141	Acute and Subacute Endocarditis	42	0.1
130	Diseases of Mitral and Aortic Valves	39	0.1
138	Angina Pectoris	36	0.1
147	Myocarditis, Unspecified and Myocardial Degeneration	34	0.1
142	Acute Pericarditis, Acute Myocarditis, and Other Diseases of the Pericardium	27	0.1
129	Diseases of Aortic Valve	9	0.0
127	Acute Rheumatic Fever	3	0.0
Total		28,031	100.0

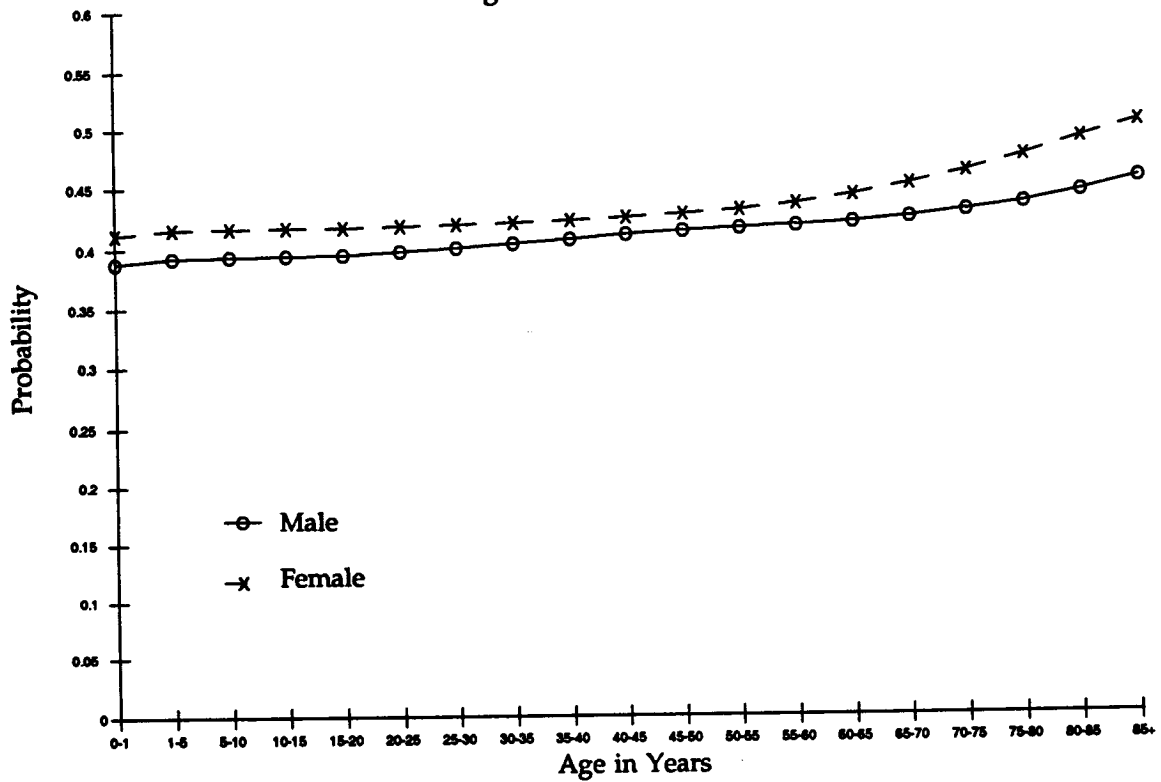
¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

An apparent inconsistency can be noted by review of Figure 2.6 and Figure 2.10. The heart disease mortality rate for males was higher than that for females over nearly all ages, yet the chance of eventual death due to heart disease was slightly greater for females at all ages. This paradox is explained by a comparison of these two measures. The cause-specific mortality rate measures the proportion of a population that died from the particular cause over a certain period of time.

The probability estimate takes into account the present age and cause-specific mortality rates and the life expectancy of the population. A greater proportion of all females now alive are expected to live into the older age intervals where they will be subject to the high heart disease mortality rates characteristic of those age groups. The effect of the longer female life span outweighs the effect of the higher mortality rate for males from heart disease.

Figure 2.10
Probability of Eventually Dying from Heart Disease by Age and Sex
 Michigan Residents, 1987 - 1989¹



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

CANCER

Of 78,566 Michigan resident deaths in 1989, 18,264 were attributed to cancer. Although not the leading cause of death in Michigan or the United States, cancer affects all the human body's major systems and persons of all ages. The frequency of death due to cancer was 65.2 percent of the number of deaths due to heart disease across all ages, but the number of cancer deaths below age 70 was greater than the number of deaths due to heart disease below age 70. The median age at death for cancer was 70 years, well below the median age of 77 years for heart disease deaths (Table 2.15).

Of the 18,264 cancer deaths in 1989 occurring to Michigan residents, 52.5 percent were to males. The median age at death was 70 years for white males and 71 years for white females. The median ages at death for black

persons who died of cancer were 67 years for males and 66 years for females. The median age at death for persons of all other races were 62 years for males and 60 years for females.

Cancer death rates by age, race and sex are presented in Table 2.16. The cancer death rate across all ages in 1989 was higher for males (212.5) than for females (182.1). The cancer death rates displayed in Figure 2.11 show a strong increase in mortality with advancing age. Mortality rates for males were higher than those for females between 15 through 34 years of age and above 54 years of age. For those ages with sufficient data to calculate rates, rates for males were lower than those of females below age 15 and ages 35-44. After 54 years of age the relative differential between male and female rates increased with age, from 36.5 percent in the 55-64 year age

Table 2.15
Deaths Due to Cancer by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	-	-	-	-	-	-	-	-	-	-	-	-
1-4	18	5	13	13	3	10	5	2	3	-	-	-
5-9	21	8	13	16	6	10	5	2	3	-	-	-
10-14	23	15	8	20	13	7	3	2	1	-	-	-
15-19	39	23	16	31	18	13	7	4	3	1	1	-
20-24	40	21	19	32	17	15	8	4	4	-	-	-
25-29	62	33	29	56	31	25	5	2	3	1	-	-
30-34	143	73	70	110	54	56	29	17	12	4	2	1
35-39	233	103	130	178	82	96	50	20	30	5	1	4
40-44	355	156	199	278	116	162	72	37	35	4	2	2
45-49	590	282	307	452	208	243	126	69	57	11	4	7
50-54	887	432	455	724	345	379	152	82	70	8	3	5
55-59	1,498	819	678	1,253	674	578	228	132	96	16	12	4
60-64	2,266	1,263	1,003	1,924	1,073	851	322	176	146	19	13	6
65-69	2,787	1,559	1,226	2,360	1,318	1,040	407	229	178	18	11	7
70-74	3,012	1,656	1,354	2,638	1,419	1,217	358	227	131	15	10	5
75-79	2,583	1,400	1,182	2,287	1,237	1,049	292	161	131	4	2	2
80-84	1,981	1,014	967	1,814	917	897	160	93	67	5	2	3
85-89	1,116	512	604	1,018	465	553	95	46	49	3	1	2
90+	610	221	389	571	205	366	38	16	22	-	-	-
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
All Ages	18,264	9,595	8,662	15,775	8,201	7,567	2,362	1,321	1,041	114	64	50
Median Age At Last Birthday	70	70	70	71	70	71	67	67	66	62	62	60

¹ Deaths with race and/or sex not stated are included only in the total column.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.16
Cancer Death Rates by Age, Race and Sex¹
 Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	196.9	212.5	182.1	199.3	211.8	187.4	192.3	228.7	160.0
Under 1	*	*	*	*	*	*	*	*	*
1 - 14	3.2	2.9	3.6	3.1	2.7	3.5	4.2	3.8	4.6
15 - 24	5.4	5.9	4.8	5.2	5.7	4.7	6.6	7.1	6.1
25 - 34	13.3	13.8	12.7	12.6	12.9	12.3	16.2	19.6	13.2
35 - 44	44.2	39.7	48.5	39.8	34.9	44.7	75.8	79.6	72.9
45 - 54	153.2	152.6	153.7	139.4	134.0	144.6	263.4	322.5	216.2
55 - 64	461.6	536.7	393.3	439.6	504.8	379.5	640.5	802.2	509.8
65 - 74	911.6	1,140.3	729.4	876.7	1,080.2	713.8	1,234.4	1,700.4	878.9
75 - 84	1,341.2	1,850.4	1,024.4	1,331.3	1,830.0	1,022.5	1,495.8	2,140.4	1,079.0
85 and Over	1,391.3	1,934.5	1,152.5	1,406.3	1,959.0	1,166.6	1,286.5	1,760.9	1,041.5
Age-Adjusted Rate ²	136.2	163.0	116.3	130.2	154.1	112.8	186.8	242.8	144.8

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

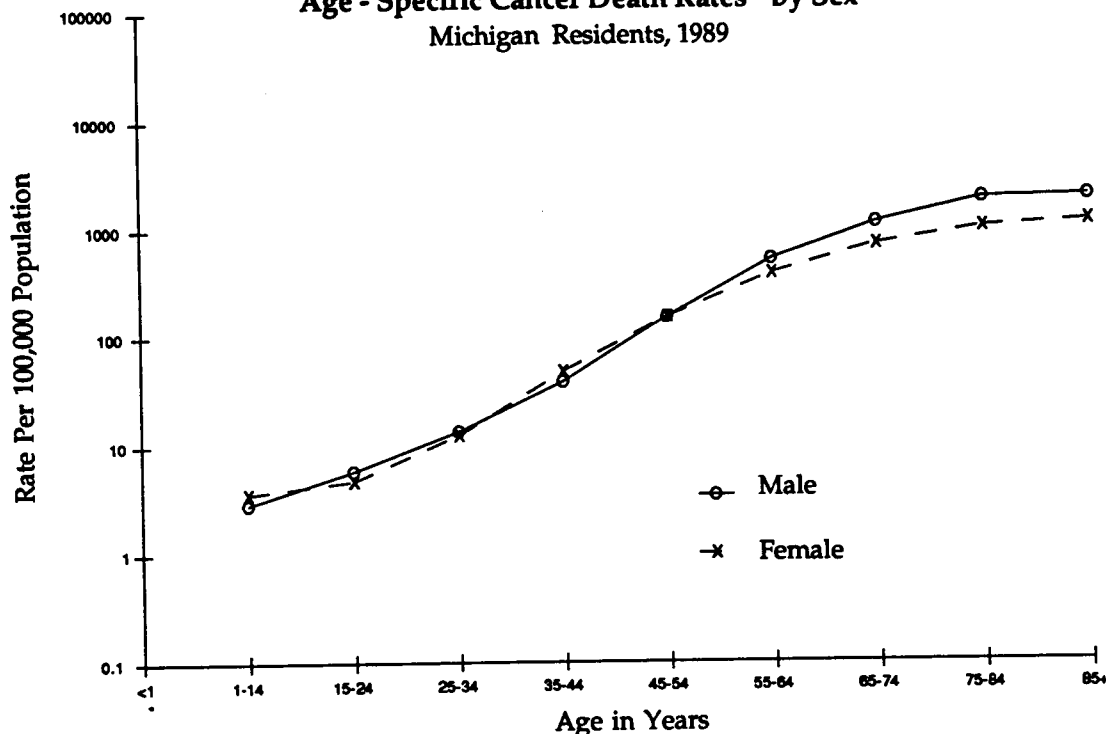
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.11
Age - Specific Cancer Death Rates¹ by Sex
 Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
 * Rate is considered statistically unreliable.

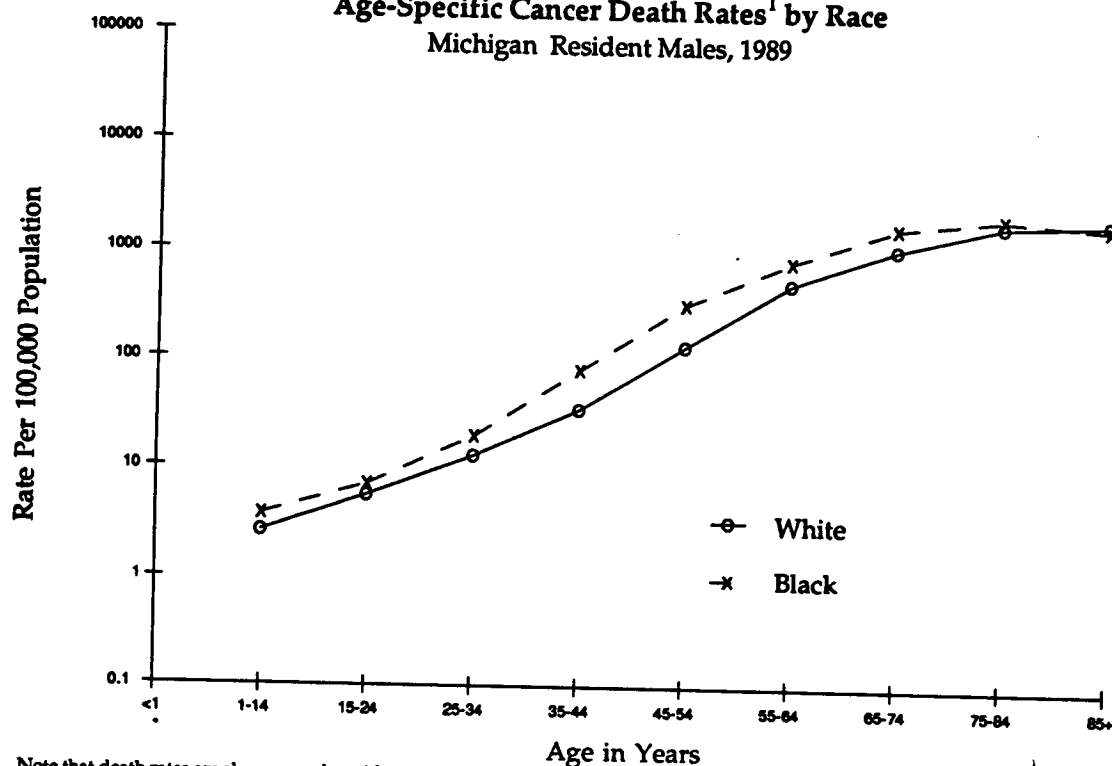
group to a high of 80.6 percent in the age group 75-84 years. The age-adjusted cancer death rate for males was 40.2 percent above that for females.

Cancer death rates for white and black males recorded in Table 2.16 are graphically displayed in Figure 2.12. Black males had rates lower than white males for the ages above 85 years of age. Rates for black males exceeded those for white males at all other ages with sufficient data to calculate rates. The largest relative differentials occurred in the age groups for 35-44 and 45-54 years, where the rate for black males were 2.3 and 2.4 times higher than the rate for white males. The crude death rate for black males (228.7) was above the corresponding rates for white males (211.8). The age-adjusted cancer death rate for black males was 57.6 percent above the rate for white males.

The age specific cancer death rates for black females were above those for white females at all ages with sufficient data to calculate rates with the exception of ages 85 and above (Figure 2.13). The largest differential in rates occurred for females between 35 and 44 years of age, where the rate for black females exceeded the rate for white females by 63.1 percent. The crude rate for white females was 17.1 percent higher than the crude rate for black females. The age-adjusted rate for black females, however, was 28.4 percent greater than that for white females.

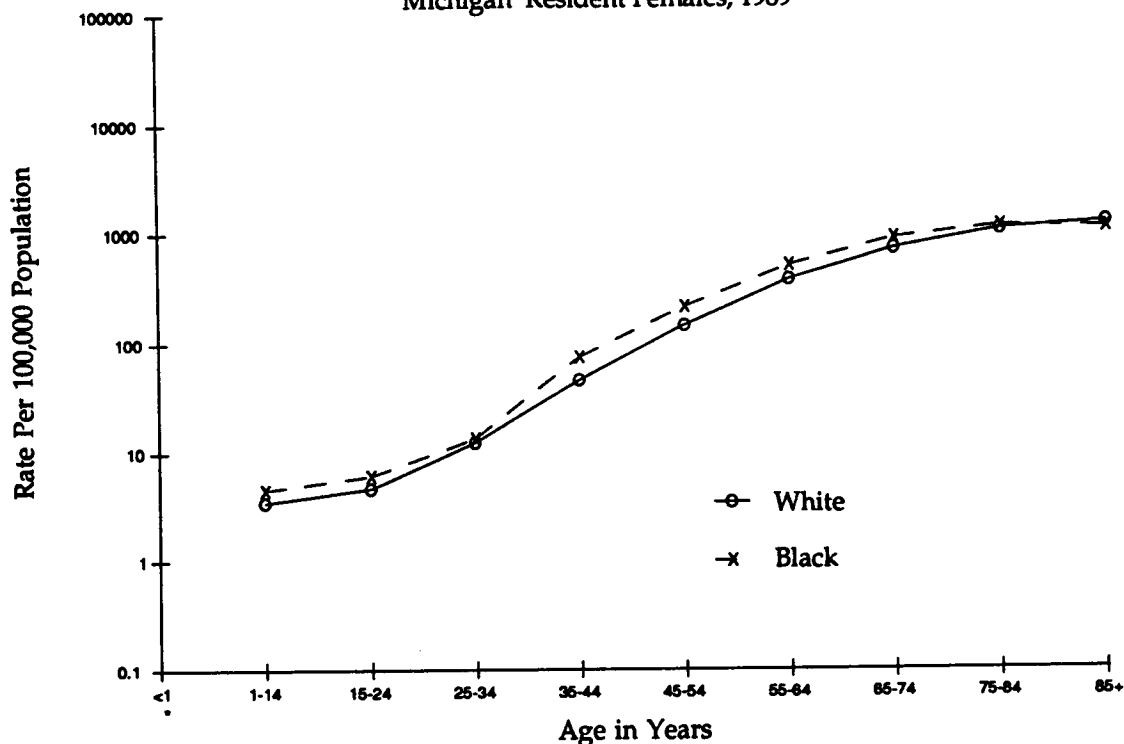
Of those individuals with specific ancestry mentioned in Table 2.17, 13,493 cancer deaths occurred to individuals of European ancestry, followed by 2,194 deaths to individuals of African ancestry. One hundred and fifty individuals of American Indian ancestry, 111 individuals of Arab Asian ancestry and 104

Figure 2.12
Age-Specific Cancer Death Rates¹ by Race
Michigan Resident Males, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
• Rate is considered statistically unreliable.

Figure 2.13
Age-Specific Cancer Death Rates¹ by Race
Michigan Resident Females, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
• Rate is considered statistically unreliable.

individuals of Hispanic ancestry died of cancer.

Among the major cause of death categories, cancer death rates have increased most persistently during the 20th century (Figure 2.14). The 1989 rate of 196.9 was 1.7 percent higher than the 1988 rate. It was the highest rate

observed in this century. The lowest observed rate for Michigan was 59.3 in 1902.

Michigan's cancer death rate was less than the national rate from 1900 through 1915. During the period 1916 through 1947 Michigan's rate was generally close to the national rate. Since 1948, the state rate has been consistently less than the national cancer death rate. The national provisional cancer death rate in 1989 was 200.3, 1.7 percent above the state rate.

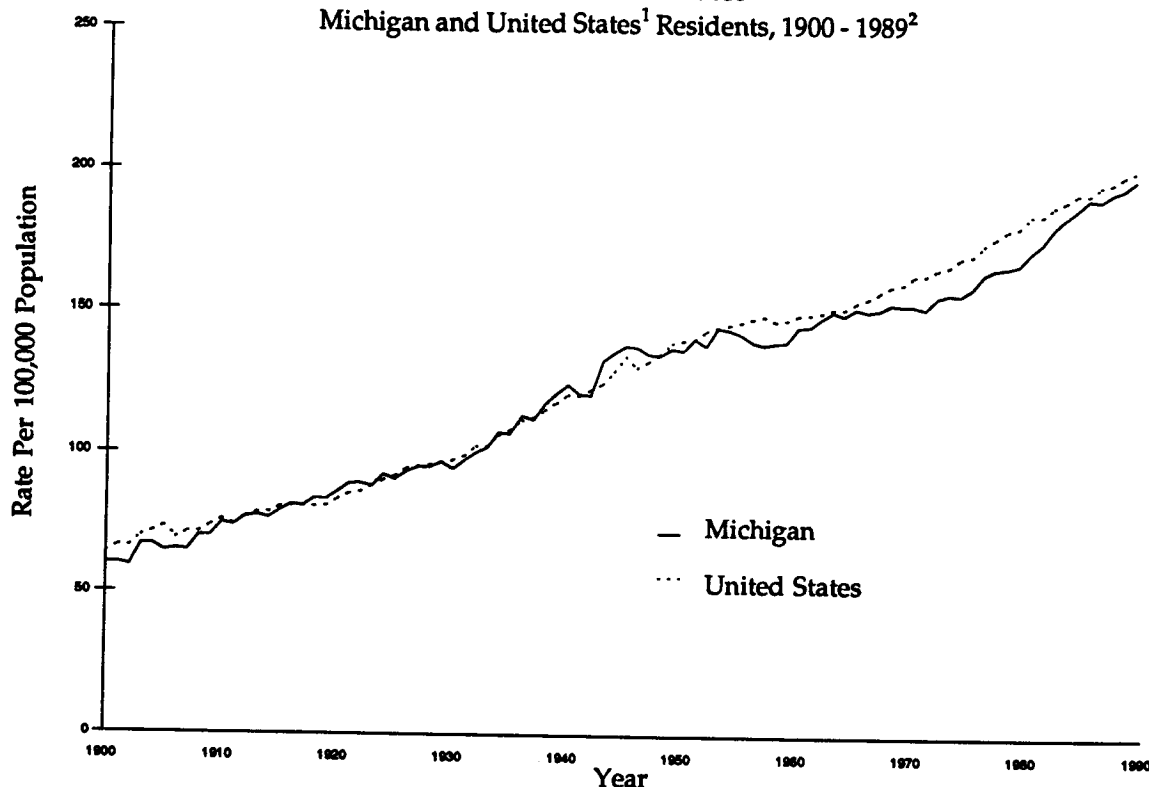
Table 2.17
Deaths Due To Cancer By Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	2,194	12.0
American Indian	150	0.8
Arabian Asian	111	0.6
European	13,493	73.9
Hispanic	104	0.6
Other (includes American)	1,545	8.5
Unknown	667	3.7
Total	18,264	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Age-adjusted cancer death rates for the years since 1970, presented in Table 2.18, show a much closer relationship between Michigan and United States mortality patterns than that indicated by crude mortality rates. While Michigan crude cancer death rates were consistently below the United States crude death

Figure 2.14
Cancer Death Rates
 Michigan and United States¹ Residents, 1900 - 1989²



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² Cancer death rates since 1900 are suitable for general comparison over time but detailed study (such as time series) requires special consideration. See Technical Notes.

rates from 1970 through 1988, Michigan age-adjusted rates were consistently higher than the United States age-adjusted rates during this time period. Michigan's 1970 age-adjusted rate for the total population was 3.7 percent higher than the comparable United States rate. From 1970 through 1983 Michigan's age-adjusted cancer death rate remained relatively stable. The rate rose 1.4 percent between 1983 and 1989. The United States rates remained stable from 1970 through 1979 and rose 2.1 percent between 1979 and 1985. In the last four years the United States rate has fluctuated near the 1985 level (see Technical Notes).

Table 2.18 contains a comparison of age-adjusted cancer death rates for white males and

females and other than white males and females. Nationally during 1970 through 1988 and in Michigan during 1970 through 1989, the rates for the other than white groups were consistently higher than those for their white counterparts. Rates increased for other than white males and females in Michigan. Nationally, the age-adjusted rates increased for other than white males from 1970 through 1982. Since 1982 the national other than white males' age-adjusted cancer rate has generally decreased. Age-adjusted rates for other than white females were essentially stable in the nation. The rates for United States white males and females and Michigan white females increased more gradually while the rates for Michigan white males been decreasing slowly since 1985.

Table 2.18
Age - Adjusted Cancer Death Rates¹ by Race and Sex
 Michigan² and United States Residents, 1970 - 1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	134.7	164.7	110.1	131.9	160.2	109.1	159.4	206.6	117.1
	1971	131.6	159.0	109.7	128.6	154.8	107.9	158.3	197.3	123.7
	1972	133.8	163.2	111.0	130.6	159.3	108.6	161.2	196.6	130.9
	1973	133.8	163.1	110.7	130.7	158.7	108.9	159.9	202.3	123.9
	1974	131.9	160.6	109.6	129.0	156.1	108.2	155.9	198.7	119.8
	1975	131.7	161.6	108.9	128.1	155.4	107.7	162.1	215.2	117.7
	1976	134.1	165.5	110.2	130.7	159.6	109.0	163.0	215.8	119.1
	1977	134.5	168.8	108.5	130.5	162.5	106.5	168.6	222.1	125.1
	1978	133.7	166.7	109.2	130.2	160.7	107.8	162.1	217.1	118.1
	1979	131.8	165.2	107.0	128.2	160.0	105.0	160.6	208.6	122.2
	1980	134.4	167.8	109.7	130.7	161.8	107.9	163.9	216.6	122.2
	1981	132.4	160.7	113.0	129.0	154.2	111.5	161.6	212.0	123.1
	1982	134.5	165.9	113.1	132.2	160.7	112.3	157.2	206.5	119.6
	1983	134.3	166.8	112.4	131.5	160.8	111.2	160.4	212.7	120.3
	1984	137.2	169.2	115.0	133.0	161.5	113.1	172.0	230.2	127.7
	1985	137.5	167.9	115.9	133.2	161.2	113.5	171.7	222.7	133.1
	1986	136.4	168.3	113.1	131.1	160.7	109.8	176.6	230.2	135.9
	1987	136.9	165.4	116.2	132.3	158.7	113.4	172.4	221.0	136.4
	1988	136.0	164.2	115.2	130.3	156.7	110.9	179.5	225.2	145.0
1989	136.2	163.0	116.3	130.2	154.1	112.8	182.3	236.1	141.6	
U.S.	1970	129.9	157.4	108.8	127.8	154.3	107.6	148.3	185.3	117.6
	1971	129.3	157.6	108.0	126.9	154.5	106.2	150.7	186.0	121.7
	1972	130.1	159.2	108.2	127.6	155.7	106.8	151.1	190.7	119.1
	1973	129.7	159.2	107.8	126.9	155.3	105.9	154.7	195.1	122.6
	1974	130.7	161.2	108.1	127.9	157.1	106.5	154.7	198.2	120.2
	1975	129.4	160.1	106.8	126.7	155.8	105.6	152.7	198.8	116.2
	1976	130.6	161.7	107.8	127.9	157.3	106.7	153.5	201.0	116.2
	1977	131.0	162.6	108.0	128.0	158.0	106.5	156.0	204.0	118.7
	1978	131.6	163.7	108.3	128.7	159.0	107.0	155.5	204.6	117.7
	1979	130.8	163.4	107.1	127.8	158.7	105.7	155.1	204.2	117.8
	1980	132.8	165.5	109.2	129.6	160.5	107.7	158.2	209.0	120.2
	1981	131.6	163.7	108.6	128.5	158.3	107.2	156.7	209.4	117.5
	1982	132.5	164.8	109.5	129.4	159.4	108.2	157.0	210.1	117.9
	1983	132.6	164.3	109.9	129.4	158.9	108.5	156.8	208.4	118.6
	1984	133.5	164.6	111.1	130.2	159.0	109.9	157.8	209.7	119.4
	1985	133.6	164.5	111.4	130.7	159.2	110.3	155.7	206.5	118.3
	1986	133.2	163.6	111.4	130.4	158.8	110.1	154.1	202.2	118.8
	1987	132.9	163.2	111.0	130.1	158.4	109.7	153.0	200.2	118.4
	1988	132.7	162.4	111.2	130.0	157.6	110.1	151.9	198.9	117.6
1989 ³	133.7	—	—	—	—	—	—	—	—	

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The numbers of deaths from cancer for 50 different sites are presented in Table 2.19. Malignant neoplasms of the trachea, bronchus, and lung were the underlying cause of 4,956 deaths, 27.1 percent of all cancer deaths. The second most frequent category of cancer mortality was cancer of other and unspecified parts of the colon (1,663). The total number of deaths attributed to colon

cancer was 1,776. Cancer of female breast was the third leading cause of cancer mortality (1,641 deaths). Malignant neoplasms of the prostate and the pancreas caused 1,127 and 904 deaths, respectively. Malignant neoplasms of all other and unspecified sites caused 1,302 deaths. There were 21 other categories which had at least 100 deaths in 1989.

Table 2.19
Deaths Due to Malignant Neoplasms by Site Affected
Michigan Residents, 1989

282 List ¹ Number	Causes of Death	Number of Deaths	Percent
57	Malignant Neoplasms of Trachea, Bronchus, and Lung	4,956	27.1
48	Malignant Neoplasms of Other and Unspecified Colon	1,663	9.1
63	Malignant Neoplasms of Female Breast	1,641	9.0
78	Malignant Neoplasms of All Other and Unspecified Sites	1,302	7.1
69	Malignant Neoplasms of Prostate	1,127	6.2
54	Malignant Neoplasms of Pancreas	904	4.9
81	Other Malignant Neoplasms of Lymphoid and Histiocytic Tissue	594	3.3
42	Malignant Neoplasms of Stomach	491	2.7
67	Malignant Neoplasms of Ovary and Other Uterine Adnexa	489	2.7
75	Malignant Neoplasms of Brain	440	2.4
72	Malignant Neoplasms of Bladder	369	2.0
41	Malignant Neoplasms of Esophagus	369	2.0
73	Malignant Neoplasms of Kidney and Other and Unspecified Urinary Organs	356	1.9
82	Multiple Myeloma and Immunoproliferative Neoplasms	319	1.7
49	Malignant Neoplasms of Rectum, Rectosigmoid Junction and Anus	291	1.6
84	Myeloid Leukemia	273	1.5
83	Lymphoid Leukemia	228	1.2
86	Other and Unspecified Leukemia	227	1.2
66	Malignant Neoplasms of Other Parts of Uterus	224	1.2
61	Melanoma of Skin	183	1.0
65	Malignant Neoplasms of Cervix Uteri	170	0.9
53	Malignant Neoplasms of Gallbladder and Extrahepatic Bile Ducts	144	0.8
56	Malignant Neoplasms of Larynx	128	0.7
60	Malignant Neoplasms of Connective and Other Soft Tissue	118	0.6
39	Malignant Neoplasms of Pharynx	117	0.6
52	Malignant Neoplasms of Liver, not Specified as Primary or Secondary	116	0.6
50	Malignant Neoplasms of Liver, Primary	109	0.6
55	Malignant Neoplasms of Retroperitoneum, Peritoneum and Other and Ill-Defined Sites within the Digestive Organs and Peritoneum	96	0.5

¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Table 2.19
Deaths Due to Malignant Neoplasms by Site Affected
Michigan Residents, 1989 (continued)

282 List ¹ Number	Causes of Death	Number of Deaths	Percent
40	Malignant Neoplasms of Other and Ill-Defined Sites within Lip, Oral Cavity, and Pharynx	80	0.4
47	Malignant Neoplasms of Cecum, Appendix, and Ascending Colon	70	0.4
80	Hodgkin's Disease	68	0.4
38	Malignant Neoplasms of Tongue	66	0.4
79	Lymphosarcoma and Reticulosarcoma	66	0.4
77	Malignant Neoplasms of Thyroid Gland and Other Endocrine Glands and Related Structures	56	0.3
62	Other Malignant Neoplasms of Skin	53	0.3
58	Malignant Neoplasms of All Other and Ill-Defined Sites within the Respiratory System and Intrathoracic Organs	53	0.3
51	Malignant Neoplasms Of Intrahepatic Bile Ducts	47	0.3
59	Malignant Neoplasms of Bone and Articular Cartilage	42	0.2
68	Malignant Neoplasms of Other and Unspecified Female Genital Organs	40	0.2
43	Malignant Neoplasms of Small Intestine, including Duodenum	38	0.2
46	Malignant Neoplasms of Sigmoid Colon	36	0.2
85	Monocytic Leukemia	22	0.1
76	Malignant Neoplasms of Other and Unspecified Parts of Nervous System	17	0.1
70	Malignant Neoplasms of Testis	15	0.1
74	Malignant Neoplasms of Eye	12	0.1
44	Malignant Neoplasms of Hepatic and Splenic Flexures and Transverse Colon	12	0.1
64	Malignant Neoplasms of Male Breast	10	0.1
45	Malignant Neoplasms of Descending Colon	7	0.0
71	Malignant Neoplasms of Penis and Other Male Genital Organs	7	0.0
37	Malignant Neoplasms of Lip	3	0.0
Total		18,264	100.0

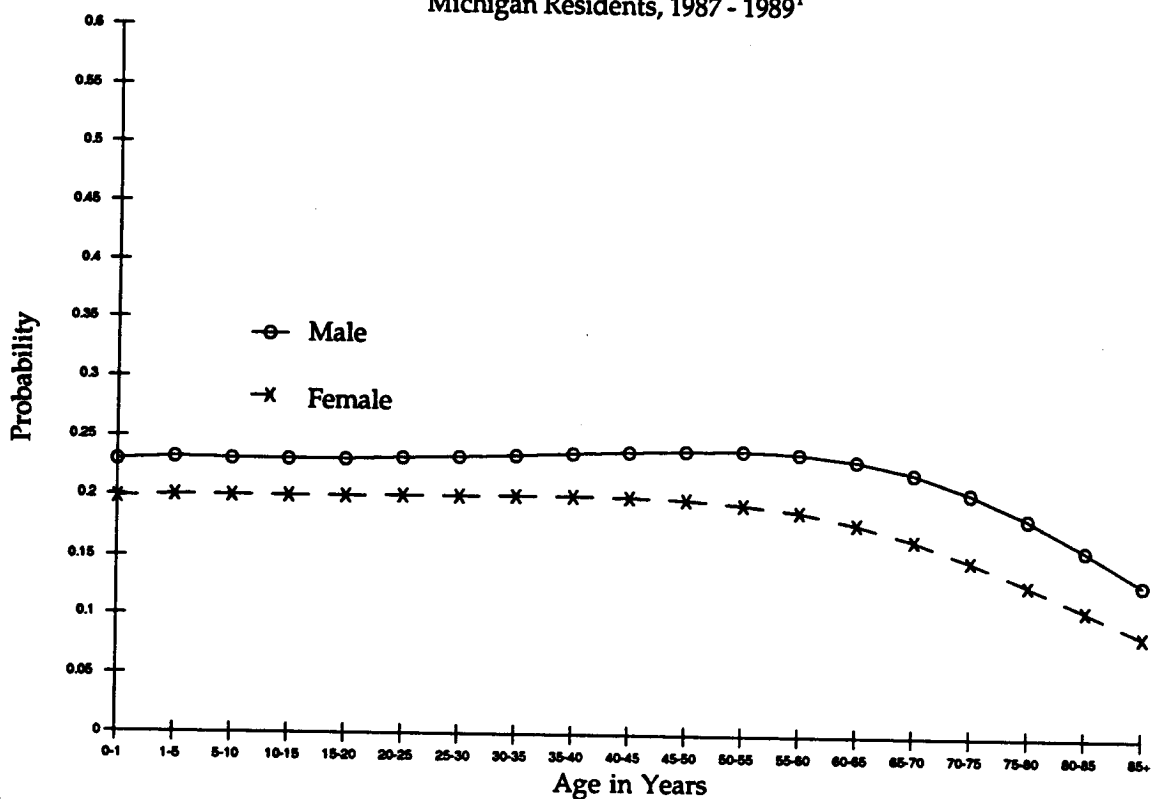
¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Based upon 1987 through 1989 death data, the probability of death due to cancer is 0.229 for males and 0.198 for females at birth (Figure 2.15). The probability of eventually dying from cancer is greater for males than for females at all ages. The probability for males rises slowly to a peak of 0.241 by age 54 then declines to 0.130 at age 85 and above. Probabilities for females display little change

from birth to age 49, then diminish to 0.087 by age 85. This decreasing probability beyond age 49, noting the high cancer mortality rates of older ages (Figure 2.11), indicates that age-specific death rates due to competing causes of death, such as heart disease, cerebrovascular disease and pneumonia and influenza, increase relatively faster with advancing age.

Figure 2.15
Probability of Eventually Dying from Cancer by Age and Sex
Michigan Residents, 1987 - 1989¹



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

CEREBROVASCULAR DISEASE

Deaths due to cerebrovascular disease (stroke) numbered 5,173 in 1989 or 6.6 percent of the 78,566 total Michigan resident deaths. This is 64 less stroke deaths than were observed in 1988. Of the total in 1989, 61.3 percent were to females.

The median age at death from stroke was 80 years (Table 2.20). The median age for females was 82 years, 6 years higher than that for males. Deaths among white persons due to cerebrovascular disease displayed median ages several years higher than those among black persons. The median age was 68 and 75 years for black males and females, 74 and 76 years for males and females of other races and 77 and 83 years for white males and females.

The cerebrovascular disease death rate was 55.8 in 1989. The rate for females (66.6) was

greater than the rate for males (44.3). The age-specific death rates recorded in Table 2.21 and displayed in Figure 2.16 indicate that rates for both sexes increased markedly in the older age groups. Rates for males were above those of females for ages 35 through 84, but among persons 85 years of age or over, and in those age groups below 35 years of age where sufficient data was available to allow calculation of rates, the rate for females was above that for males. The crude death rate for females exceeded that for males because of the larger proportion of women in the high risk older age groups. The age-adjusted rate for males was 8.5 percent higher than the age-adjusted rate for females.

Cerebrovascular disease death rates by age and race from Table 2.21 are graphically displayed in Figures 2.17 and 2.18 for those age and racial groups with sufficient data to

Table 2.20
Deaths Due to Cerebrovascular Disease by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	12	6	6	8	4	4	4	2	2	-	-	-
1-4	4	1	3	2	-	2	2	1	1	-	-	-
5-9	2	-	2	2	-	2	-	-	-	-	-	-
10-14	1	-	1	1	-	1	-	-	-	-	-	-
15-19	2	1	1	1	-	1	1	1	-	-	-	-
20-24	4	1	3	2	-	2	2	1	1	-	-	-
25-29	11	6	5	9	5	4	2	1	1	-	-	-
30-34	25	9	16	16	8	8	9	1	8	-	-	-
35-39	48	27	21	22	12	10	26	15	11	-	-	-
40-44	70	32	38	39	19	20	30	13	17	1	-	1
45-49	71	43	28	44	26	18	26	16	10	1	1	-
50-54	103	60	43	76	43	33	27	17	10	-	-	-
55-59	155	72	83	111	57	54	42	14	28	2	1	1
60-64	220	123	97	160	90	70	56	31	25	4	2	2
65-69	400	207	193	329	172	157	69	34	35	2	1	1
70-74	620	286	334	514	240	274	102	44	58	4	2	2
75-79	824	370	454	712	335	377	109	34	75	3	1	2
80-84	955	346	609	872	322	550	79	24	55	2	-	2
85-89	866	236	630	795	217	578	64	14	50	6	4	2
90+	780	177	602	717	158	558	56	17	39	4	1	3
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
All Ages	5,173	2,003	3,169	4,432	1,708	2,723	706	280	426	29	13	16
Median Age At Last Birthday	80	76	82	80	77	83	73	68	75	75	74	76

¹ Deaths with race and/or sex not stated are included only in the total column.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.21
Cerebrovascular Disease Death Rates by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	55.8	44.3	66.6	56.0	44.1	67.5	57.6	48.5	65.5
Under 1	8.5	8.3	8.6	7.1	*	*	*	*	*
1 - 14	0.4	*	0.6	0.3	*	0.7	*	*	*
15 - 24	0.4	*	*	*	*	*	*	*	*
25 - 34	2.3	2.0	2.7	1.9	2.0	1.8	5.2	*	7.9
35 - 44	8.9	9.0	8.7	5.3	5.4	5.2	34.8	39.1	31.4
45 - 54	18.0	22.0	14.3	14.2	16.6	11.8	50.2	70.5	34.1
55 - 64	46.0	50.2	42.1	37.5	42.4	32.9	114.1	117.2	111.7
65 - 74	160.3	174.7	148.9	147.8	162.4	136.1	275.9	290.9	264.5
75 - 84	522.8	548.6	506.7	514.6	557.4	488.1	622.2	488.8	708.4
85 and Over	1,326.8	1,090.0	1,431.0	1,340.0	1,099.4	1,444.4	1,170.4	908.8	1,305.6
Age-Adjusted Rate ²	28.2	29.3	27.0	25.7	27.1	24.4	48.7	49.2	47.8

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

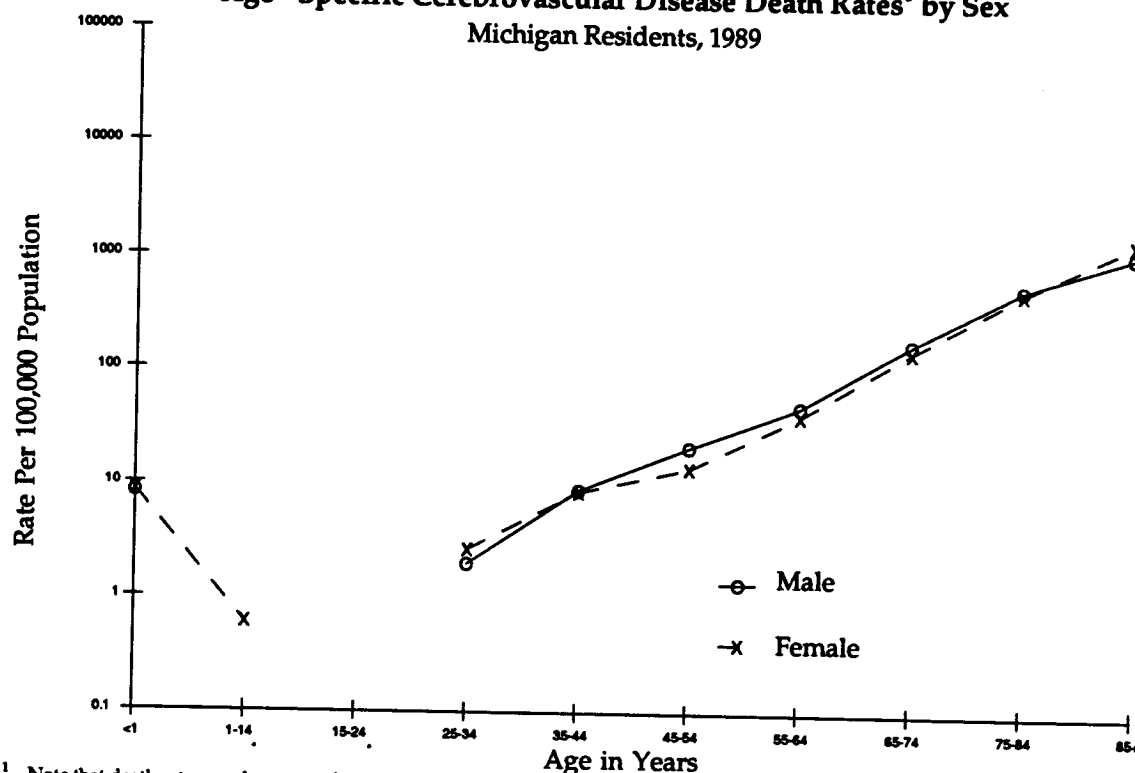
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

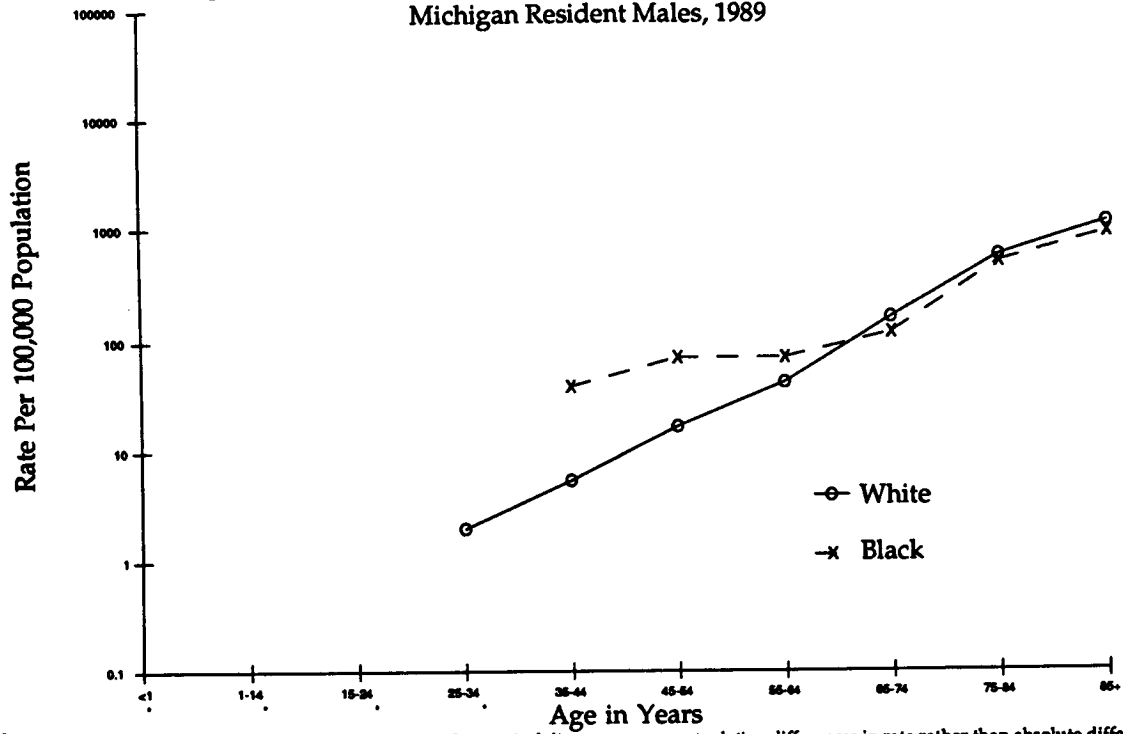
Figure 2.16
Age - Specific Cerebrovascular Disease Death Rates¹ by Sex
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

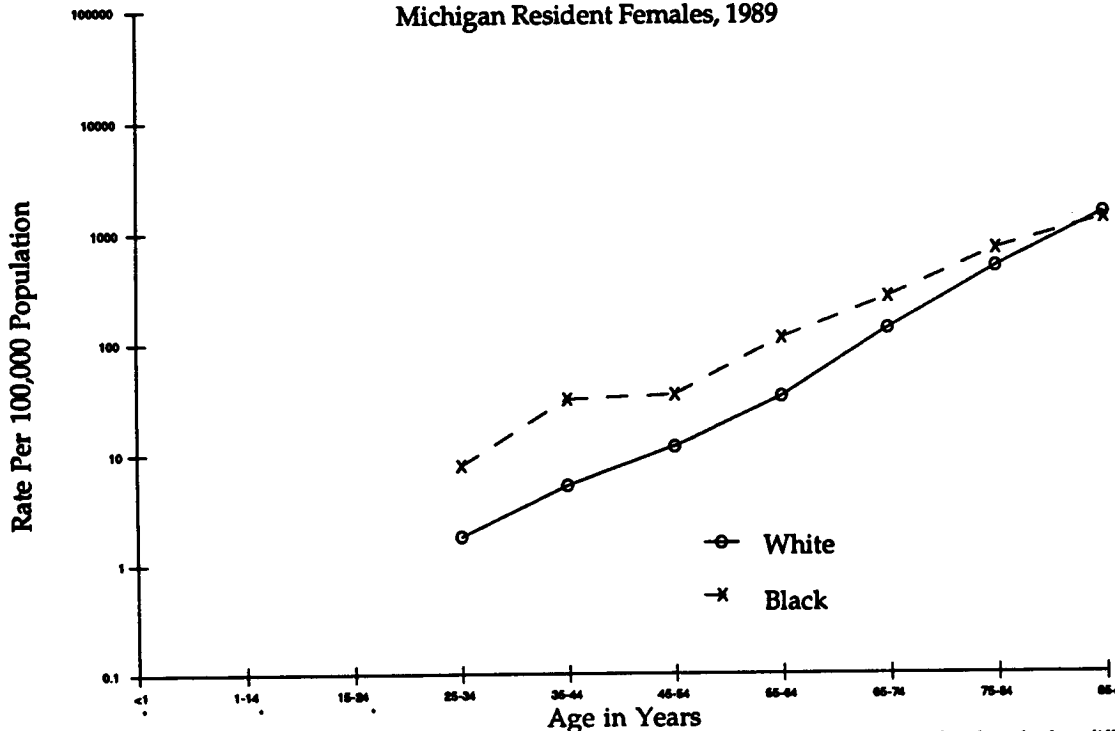
* Rate is considered statistically unreliable.

Figure 2.17
Age - Specific Cerebrovascular Disease Death Rates¹ by Race
 Michigan Resident Males, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
 • Rate is considered statistically unreliable.

Figure 2.18
Age - Specific Cerebrovascular Disease Death Rates¹ by Race
 Michigan Resident Females, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
 • Rate is considered statistically unreliable.

calculate rates. Rates for black males and females were higher than comparable rates for white persons in all age groups below ages 75 and 85, respectively. After 34 years of age for females and 44 years of age for males, the relative differentials progressively decreased with increasing age. Rates for white persons were considerably higher than those for black persons beyond age 84.

Although the crude rate for white females was 3.1 percent higher than the rate for black females, the age-adjusted rate indicates an opposite relationship. The cerebrovascular disease age-adjusted death rate for black females was 95.9 percent higher than that for white females, while for black males the age-adjusted rate was 81.5 percent higher than that for white males.

Table 2.22 presents by ancestry the numbers of deaths due to cerebrovascular disease. Of the 5,173 resident deaths in 1989 due to cerebrovascular disease, 3,811 occurred to individuals reported to be of European ancestry. Another 648 cerebrovascular disease deaths occurred to individuals of African ancestry. Hispanic individuals accounted for 35 deaths in this classification. Individuals of American Indian and Arab Asian ancestry accounted for 34 and 27 cerebrovascular disease deaths, respectively.

The historic pattern of cerebrovascular disease death rates has been one of strong variation (Figure 2.19). During the time period 1900-1949, the rates in Michigan ranged from a low of 83.9 in 1902 to a high of 110.0 eight years later. The national high and low rates for the years 1900-1948 were, respectively, 108.6 in 1904 and 84.1 in 1933. Rates for Michigan were below national rates from 1900 through 1907 but were generally, and sometimes markedly, higher from 1908 through 1938. Michigan and national rates were very similar over the next eight years,

Table 2.22
Cerebrovascular Disease Deaths by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	648	12.5
American Indian	34	0.7
Arabian Asian	27	0.5
European	3,811	73.7
Hispanic	35	0.7
Other (includes American)	408	7.9
Unknown	210	4.1
Total	5,173	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

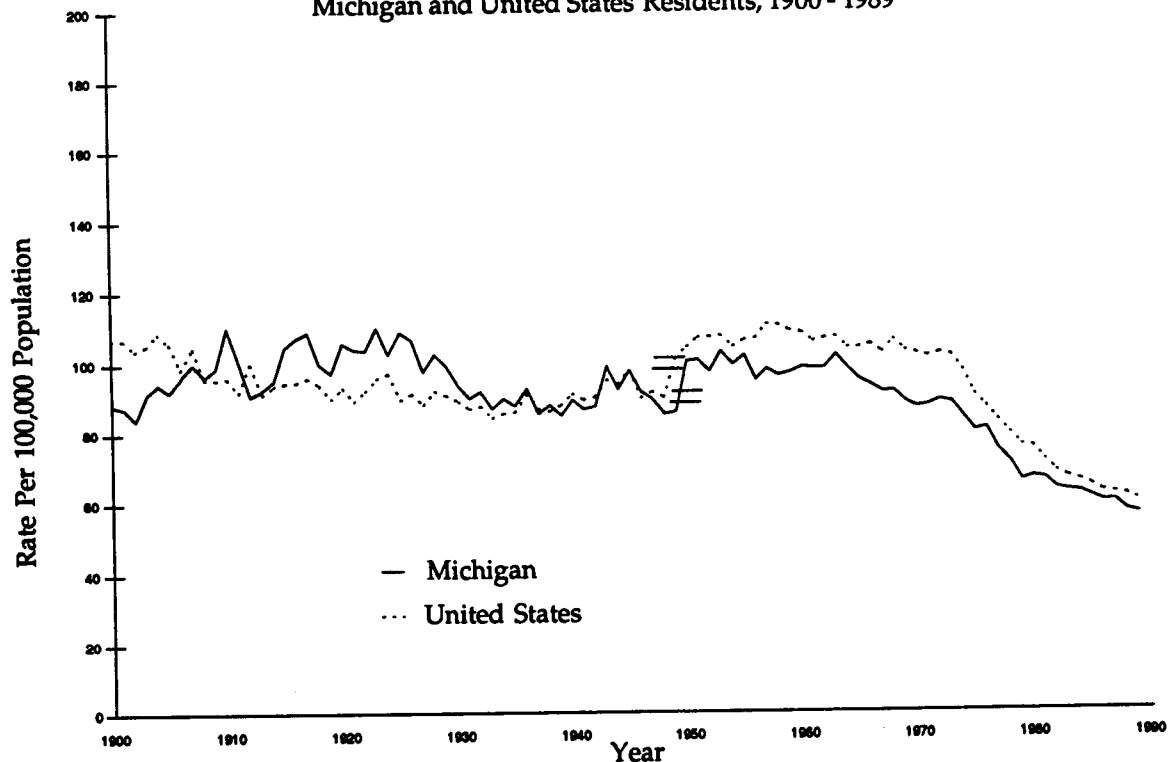
whereupon the Michigan rate slipped below the national rate and has remained so since.

The 6th revision to ICD cause of death coding was adopted in the year 1949 nationally and in 1950 in Michigan. This revision resulted in a lack of direct comparability between cerebrovascular disease death rates prior to these dates and those after adoption. Since the significant change in coding procedures, the cerebrovascular disease death rate in Michigan has ranged from a high of 102.8 in 1953 to a low of 55.8 in 1989.

Cerebrovascular disease death rates over the last twenty five years have shown a clear downward tendency both nationally and in Michigan. The 1988 rates for Michigan and the United States are approximately forty-five percent lower than rates in 1963. In 1989 the Michigan rate was 6.1 percent below the United States provisional rate of 59.4.

Age-adjusted rates for cerebrovascular disease deaths by race and sex are presented in Table 2.23. Michigan rates have declined by 56.8 and 50.0 percent since 1970 for white and other than white females, respectively, by 60.1 percent for white males and by 50.5 percent for other than white males. However, rates for other than white persons remained substantially above rates for white persons throughout the period. The gap between other than white males and white males

Figure 2.19
Cerebrovascular Disease Death Rates
 Michigan and United States¹Residents, 1900 - 1989²



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² The comparability of cerebrovascular disease death rates from the 5th revision of ICDA coding procedures with those of the 6th revision is considered weak. The comparability ratio is estimated to be 1.16. The 6th revision was adopted in 1949 for national cause-of-death statistics and in 1950 for Michigan statistics. The comparability of cerebrovascular disease death rates through the 6th, 7th, 8th and 9th revisions (1949 to date nationally and 1950 to date in Michigan) is high. General comparison before and after these dates can be made but detailed study requires special consideration. See Technical Notes.

widened from 40.5 percent in 1970 to 74.2 percent in 1988.

Age-adjusted rates for the United States showed a similar pattern of decline. However, while Michigan and national rates were quite similar for white males and females, the state age-adjusted rates for other than white males and females were lower than comparable national rates almost each year until 1985 when national rates for other than white

females were less than the rates for their Michigan counterparts (see Technical Notes). In 1987 the national rate for other than white males was lower than the rate for their Michigan counterparts. By 1988, the Michigan rate for both males and females of other than white race were again lower than the comparable national rates. In 1989, the Michigan age-adjusted rate for cerebrovascular disease deaths was 1.1 percent below the national provisional rate.

Table 2.23
Age - Adjusted Cerebrovascular Disease Death Rates¹ by Race and Sex
Michigan² and United States Residents, 1970 - 1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	64.7	70.8	59.9	61.5	67.9	56.5	93.9	95.4	92.2
	1971	63.7	72.5	56.7	61.0	70.4	53.5	86.9	89.1	84.9
	1972	63.3	69.5	58.2	60.6	66.6	55.6	84.8	91.8	78.2
	1973	61.4	67.4	56.4	58.9	65.0	53.9	80.8	86.2	76.4
	1974	57.8	64.7	52.2	55.5	62.4	50.0	74.6	81.6	68.2
	1975	53.9	60.1	49.0	52.1	57.9	47.6	67.3	77.2	59.0
	1976	53.1	58.0	49.3	51.2	56.2	47.3	67.2	71.9	63.3
	1977	48.4	54.0	44.0	46.4	51.9	42.2	64.2	71.9	58.2
	1978	45.2	49.3	42.0	42.9	47.3	39.6	62.7	63.8	61.1
	1979	40.9	46.3	36.8	38.6	44.0	34.6	58.6	64.3	53.8
	1980	40.6	44.9	37.4	38.1	42.4	35.0	59.4	64.1	55.6
	1981	37.8	41.3	35.6	35.6	39.1	33.3	53.6	57.3	50.5
	1982	34.9	39.9	31.6	33.2	37.9	29.8	48.3	54.8	43.3
	1983	34.1	37.6	31.9	32.0	35.3	29.6	50.0	53.4	47.1
	1984	34.5	37.9	32.1	33.0	36.2	30.6	45.3	50.7	41.3
	1985	33.2	36.5	30.6	31.0	34.4	28.3	49.3	51.8	46.8
	1986	31.6	34.2	29.4	29.5	32.0	27.3	47.3	50.3	44.6
	1987	31.4	33.5	29.7	28.7	30.3	27.4	51.4	58.7	45.6
	1988	28.8	31.5	26.4	26.9	29.2	24.8	43.3	49.8	38.0
	1989	28.2	29.3	27.0	25.7	27.1	24.4	46.8	47.2	46.1
U.S.	1970	66.3	73.2	60.8	61.8	68.8	56.2	107.0	113.5	101.4
	1971	65.0	72.7	59.1	60.9	68.7	54.9	102.0	109.4	95.8
	1972	64.6	72.3	58.6	60.6	68.4	54.5	100.6	107.6	94.8
	1973	63.1	69.9	57.9	59.0	65.8	53.9	98.6	106.4	92.3
	1974	59.2	65.9	54.1	55.7	62.4	50.8	89.7	98.0	83.0
	1975	53.7	60.0	49.0	50.6	56.7	46.1	80.8	88.9	74.2
	1976	50.6	56.1	46.5	47.6	53.0	43.6	76.2	84.1	69.9
	1977	47.3	52.7	43.3	44.4	49.7	40.6	71.7	79.3	65.6
	1978	44.4	49.1	40.8	41.6	46.0	38.4	67.6	76.1	60.9
	1979	41.6	45.9	38.3	38.9	42.9	35.9	63.6	71.8	57.1
	1980	40.8	44.9	37.6	38.0	41.9	35.2	62.9	70.5	57.0
	1981	38.1	41.7	35.4	35.6	38.9	33.1	58.6	65.6	53.2
	1982	35.8	39.2	33.2	33.4	36.6	31.0	54.8	61.8	49.6
	1983	34.4	37.7	31.8	32.0	35.2	29.6	52.6	57.8	48.6
	1984	33.4	36.4	31.1	31.1	33.9	28.9	51.1	56.3	46.9
	1985	32.3	35.2	30.0	30.1	32.8	27.9	49.4	54.2	45.5
	1986	31.0	33.5	29.0	28.8	31.1	27.1	47.0	52.4	42.7
	1987	30.3	32.7	28.3	28.1	30.3	26.3	45.8	51.1	41.7
	1988	29.7	32.4	27.6	27.5	30.0	25.5	45.6	50.9	41.5
	1989 ³	28.5	—	—	—	—	—	—	—	—

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1971-1982 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Acute but ill-defined cerebrovascular disease was most frequently given as the type of cerebrovascular disease causing death (2,387 deaths). Second in frequency was cerebral thrombosis and unspecified occlusion of cerebral arteries which caused 947 deaths in

1989 (Table 2.24). These two cause of death categories comprised 64.5 percent of all stroke deaths. Intracerebral and other intracranial hemorrhage caused 759 deaths while other and late effects of cerebrovascular diseases caused 717 stroke deaths.

Table 2.24
Deaths Due to Cerebrovascular Disease by Specific Cause
Michigan Residents, 1989

282 List ¹ Number	Cause of Death	Number of Deaths	Percent
154	Acute but Ill-Defined Cerebrovascular Disease	2,387	46.1
152	Cerebral Thrombosis and Unspecified Occlusion of Cerebral Arteries	947	18.3
150	Intracerebral and Other Intracranial Hemorrhage	759	14.7
155	Other and Late Effects of Cerebrovascular Diseases	717	13.9
149	Subarachnoid Hemorrhage	279	5.4
151	Occlusion and Stenosis of Precerebral Arteries	54	1.0
153	Cerebral Embolism	30	0.6
Total		5,173	100.0

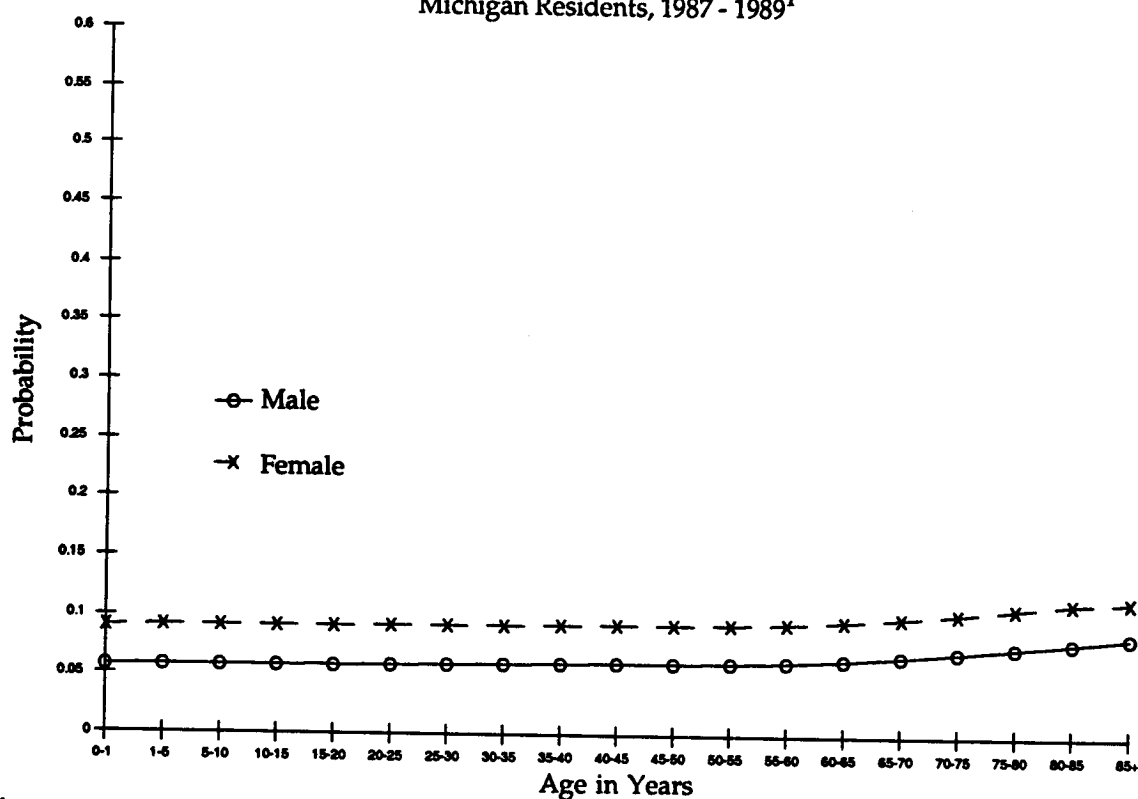
¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Based upon the mortality experience of 1987 through 1989, at birth a Michigan male faces a 0.057 chance of dying from cerebrovascular disease while the probability for a female at birth is 0.091. For both sexes the probability of eventual death due to this cause increases with advancing age. At all ages females are

more likely to eventually die from this cause than are males (Figure 2.20). This results primarily from the higher risks from competing causes for males. At ages 65-70, the probabilities for both males and females start a slightly accelerated rise, reaching 0.084 and 0.115, respectively, at ages 85 and above.

Figure 2.20
Probability of Eventually Dying from Cerebrovascular Disease by Age and Sex
Michigan Residents, 1987 - 1989¹



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

ACCIDENTS

Of all Michigan resident deaths in 1989, 4.1 percent were attributed to accidents. The total of 3,228 accidental deaths was 9 less than in 1988. In 1989, 63.7 percent of the total accidental deaths were to males.

The median age at death among accident victims was 40 years (Table 2.25). The median age among males was 36, 17 years lower than the 53 year median for females. This differential is predominantly traceable to the age at death distribution of white females. The median age of accidental death for white males was 35 years compared to 38 years for black males and 33 years for males of other races. For white females who died from accidents the median of 57 years was 14 years higher than that for their black counterparts and 31 years higher than that for their counterparts of other races.

Accidental deaths among white males were especially concentrated in the 15-39 age range. These five age groups accounted for 48.0 percent of accidental deaths for white males compared to 37.6 percent for black males and 44.4 percent for males of other races. For the same age group for females, percentages were 29.8 for white, 31.1 for black and 25.0 for other races, respectively.

The crude death rate from accidents for males was 1.8 times that for females. Age-specific accident death rates for males were greater than those for females in all age groups. The differentials between rates for males and females were greatest between ages 15 and 44. In the 25-34 year age group, the rate for males was 2.9 times that for females. The differential between the rates for males and females narrowed above the age of 44.

Table 2.25
Deaths Due to Accidents by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	48	27	21	29	15	14	18	12	6	-	-	-
1-4	111	62	49	82	48	34	26	14	12	3	-	3
5-9	77	48	29	57	36	21	17	9	8	3	3	-
10-14	71	45	26	59	38	21	9	6	3	3	1	2
15-19	291	201	90	250	174	76	37	25	12	4	2	2
20-24	268	202	66	235	181	54	31	20	11	2	1	1
25-29	298	214	84	266	195	71	27	15	12	4	3	1
30-34	234	178	56	205	154	51	24	19	5	5	5	-
35-39	215	160	55	174	130	44	40	29	11	1	1	2
40-44	167	117	50	128	95	33	35	20	15	4	2	1
45-49	137	96	41	115	80	35	21	16	5	1	-	1
50-54	111	75	36	93	59	34	15	13	2	3	3	-
55-59	115	78	37	85	61	24	28	15	13	1	1	-
60-64	133	89	44	106	70	36	26	18	8	1	1	-
65-69	182	113	69	142	87	55	38	24	14	2	2	-
70-74	153	80	73	136	73	63	16	6	10	1	-	-
75-79	179	85	94	160	72	88	18	13	5	1	-	1
80-84	180	84	96	168	78	90	11	6	5	1	-	1
85-89	145	64	81	135	59	76	8	4	4	2	-	1
90+	113	37	76	106	34	72	6	3	3	1	-	1
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
All Ages	3,228	2,055	1,173	2,731	1,739	992	451	287	164	43	27	16
Median Age At Last Birthday	40	36	53	40	35	57	39	38	41	32	33	26

¹ Deaths with race not stated are included only in the total column.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The age-adjusted death rate for males was 2.2 times that for females (Table 2.26).

Accident mortality rates by sex contained in Table 2.26 are displayed graphically in Figure 2.21. Although age-specific rates for males are generally greater than those for females, the patterns of change are quite similar. Mortality rates for children between 1 and 14 years of age were less than those for infants under one year. The rates then rose sharply for both sexes in the 15-24 year age group. From this initial peak the rates for both groups declined somewhat, for males, declining through age 54 and, for females, declining through age 44. Beyond age 54, the rates for both sexes increased continuously.

Age-specific accident death rates for white and black persons are graphically displayed in Figures 2.22 and 2.23. Rates for black males were higher than those for white males under 15 and for those age groups between 35 and

84 years of age (Table 2.26). Both the crude and age-adjusted accident death rates for black males were somewhat higher than those for white males.

Rates for black females were higher than those for white females under age 15, 35-44 and 55-74. Between 15-35 and 45-54 years and above 74 years of age the rates for white females were higher. Both the crude and age-adjusted rates for black females were greater than the corresponding rates for white females.

Deaths due to accidents by ancestry of the deceased are presented in Table 2.27. Individuals of European ancestry accounted for 2,111 of the 3,228 accident deaths to Michigan residents in 1989. Another 405 accident deaths were attributed to individuals of African ancestry. Accidents resulted in the deaths of 54 individuals of Hispanic ancestry, 31 deaths of individuals of American Indian

Table 2.26
Accident Death Rates by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	34.8	45.5	24.7	34.5	44.9	24.6	36.7	49.7	25.2
Under 1	33.8	37.2	30.3	26.7	26.1	27.3	69.9	92.1	47.2
1 - 14	13.6	15.9	11.2	12.6	15.2	10.0	16.8	18.6	15.0
15 - 24	38.2	54.3	21.6	39.9	57.3	21.8	29.8	40.0	19.9
25 - 34	34.4	51.2	17.9	35.9	53.1	18.6	24.3	35.1	15.0
35 - 44	28.7	42.4	15.5	26.3	39.4	13.3	46.6	68.4	29.1
45 - 54	25.7	36.5	15.5	24.6	33.4	16.0	34.1	61.9	11.9
55 - 64	30.4	43.0	19.0	26.5	38.1	15.9	62.9	85.9	44.2
65 - 74	52.7	68.4	40.1	48.7	63.1	37.3	87.1	111.9	68.3
75 - 84	105.5	129.5	90.6	106.4	127.3	93.5	96.0	160.1	54.5
85 and Over	208.0	266.6	182.2	213.2	271.9	187.7	135.4	198.8	102.7
Age-Adjusted Rate ²	30.6	42.4	19.4	29.9	41.5	18.7	36.2	51.2	23.8

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

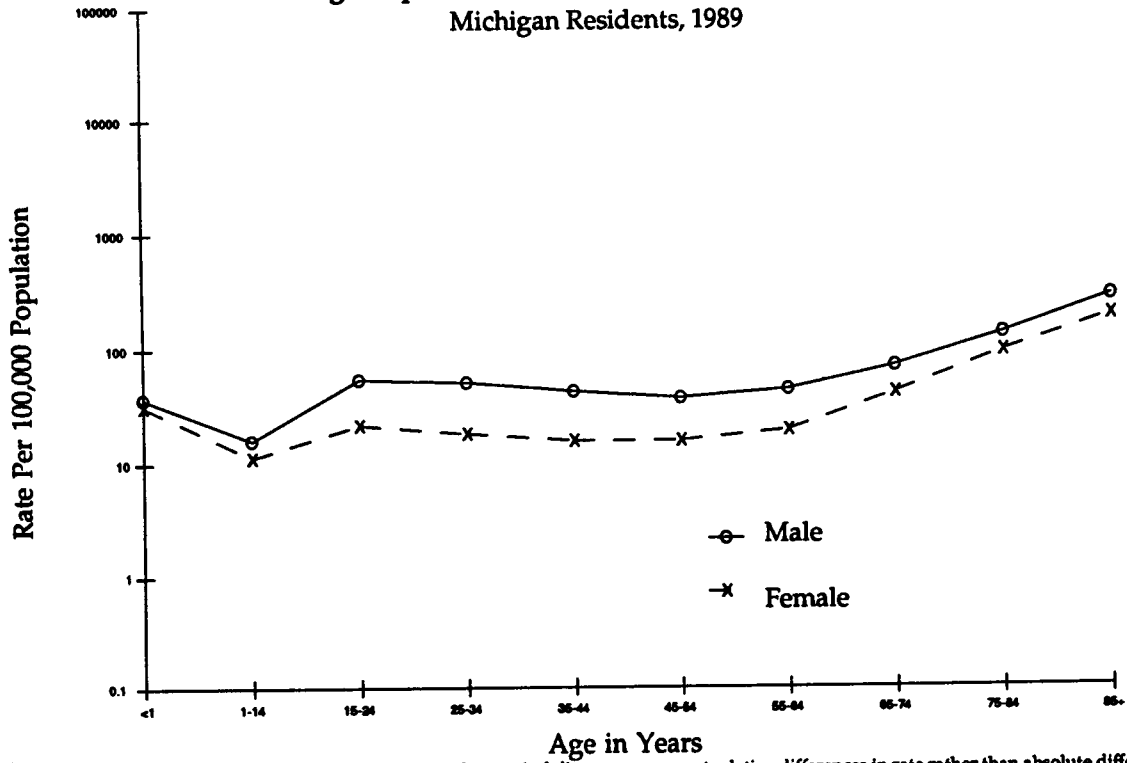
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with racial categories from the 1970 Census and the categories used by state departments of health.

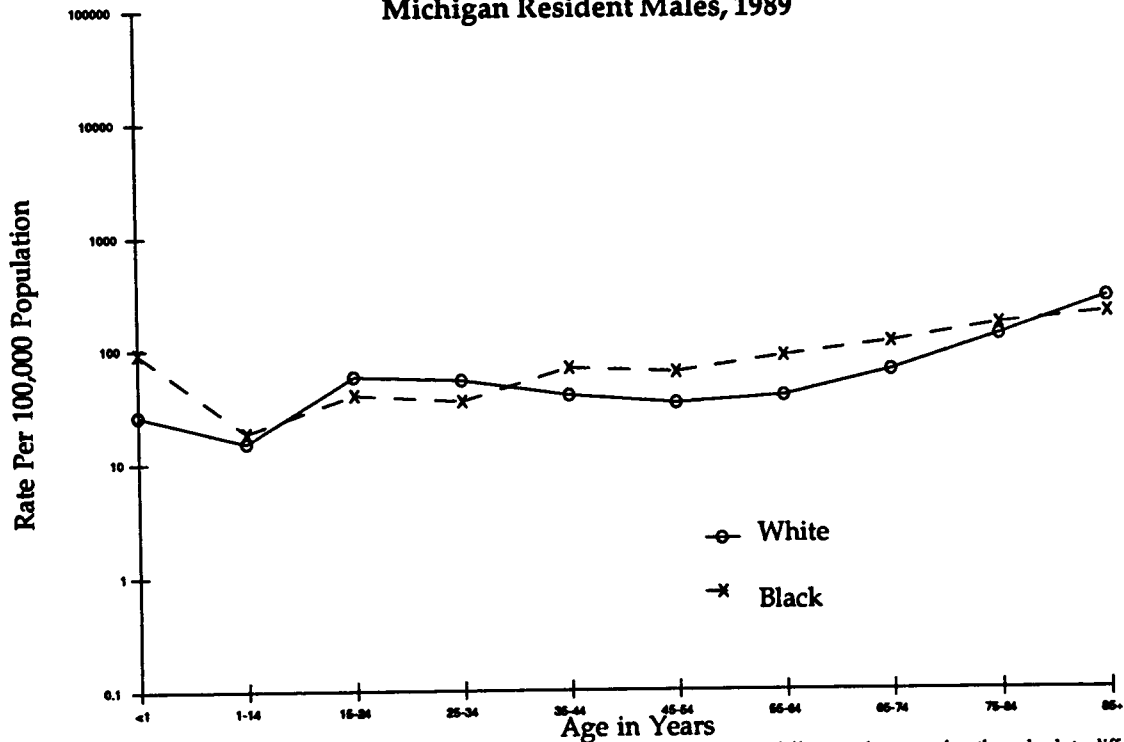
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.21
Age - Specific Accident Death Rates¹ by Sex
 Michigan Residents, 1989



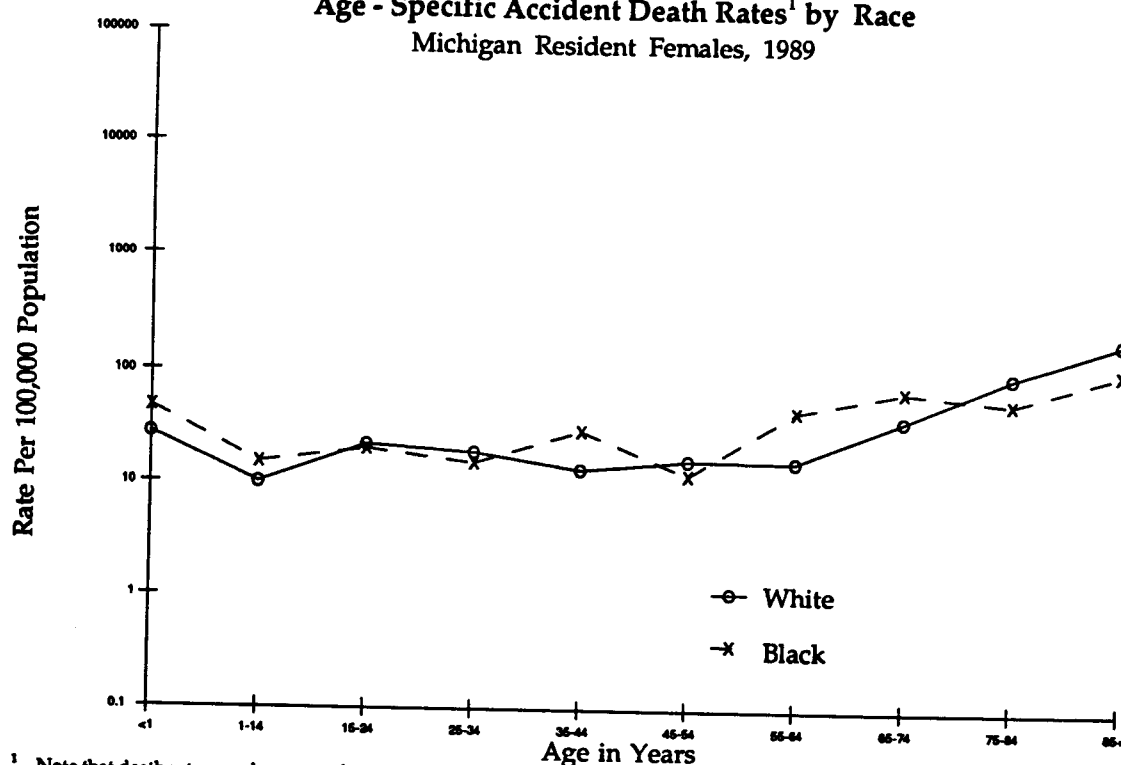
¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

Figure 2.22
Age - Specific Accident Death Rates¹ by Race
 Michigan Resident Males, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
 • Rate is considered statistically unreliable.

Figure 2.23
Age - Specific Accident Death Rates¹ by Race
Michigan Resident Females, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences. Rate is considered statistically unreliable.

ancestry and 14 deaths of individuals of Arab Asian ancestry.

Michigan's accident death rate in 1900 was 71.9 (Figure 2.24). The highest rate observed in this century was 103.1 in 1936. In eight of the last twelve years the accident death rates have fallen or remained the same. The rate of 32.2 in 1983 was the lowest rate of the century. The rate of 34.8 in 1989 was 8.1

percent higher than that of 1983 and was 0.6 percent less than the 1988 rate of 35.0.

The highest national accident death rate was 101.8 in 1907. The lowest national rate of the century was the rate of 38.6 for 1985. Michigan's rates have been below national rates fairly consistently since 1900. The last time Michigan's rate was above that of the United States was in 1964. The accident death rate for Michigan in 1989 was 8.9 percent below the provisional rate of 38.2 for the nation.

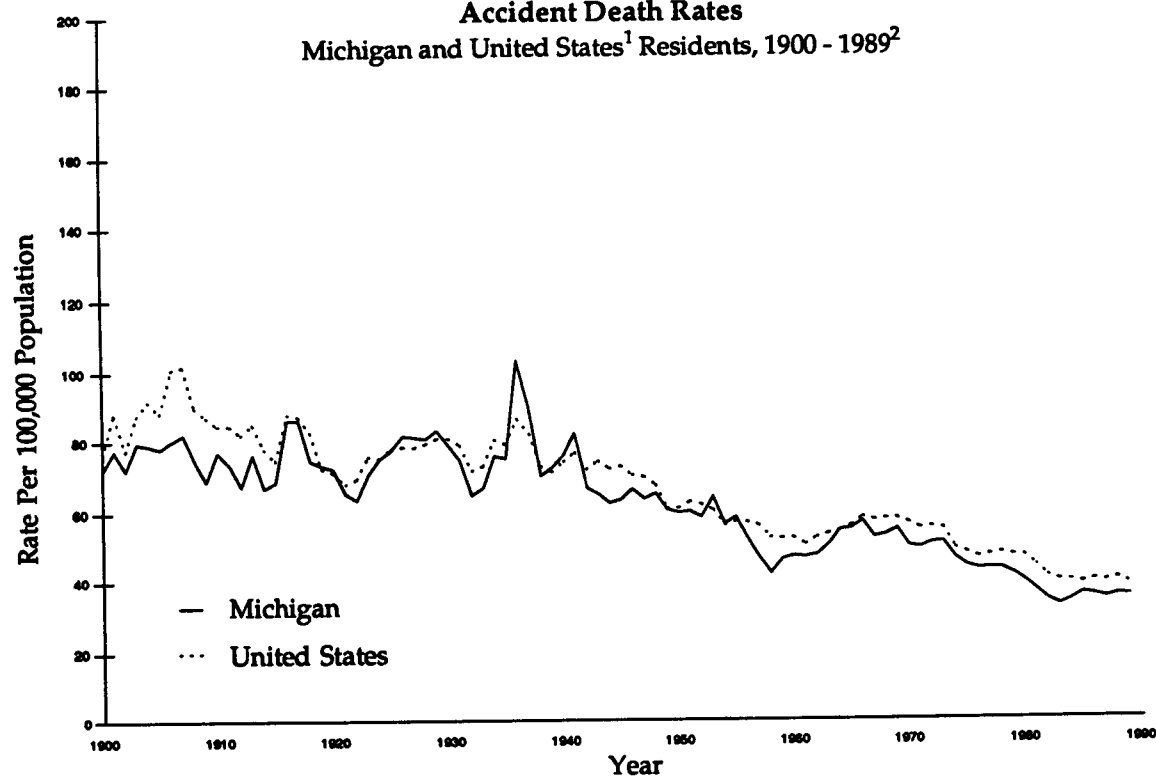
Table 2.27
Deaths Due to Accidents by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	405	12.5
American Indian	31	1.0
Arabian Asian	14	0.4
European	2,111	65.4
Hispanic	54	1.7
Other (includes American)	383	11.9
Unknown	230	7.1
Total	3,228	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Michigan's age-adjusted death rates for accidental deaths have also been below the comparable national rates since 1970 (Table 2.28). Between 1970 and 1983 Michigan's age-adjusted rate declined by 38.3 percent. The Michigan rates then rose 5.3 percent between 1983 and 1988, and in 1989 declined to only 2.0 percent above the 1983 rate.

Figure 2.24
Accident Death Rates
 Michigan and United States¹ Residents, 1900 - 1989²



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² Accidental death rates since 1900 are suitable for general comparison over time but detailed study (such as time series) requires special consideration. See Technical Notes.

Between 1970 and 1989 the national age-adjusted rate declined by 37.6 percent (see Technical Notes). Michigan's rate was 8.7 percent below the national provisional rate in 1989.

The age-adjusted rates by race and sex declined for each population subgroup between 1970 and 1989. Other than white female rates have fluctuated above and below those for white females since 1970, although they have been above the white female rates for the last three years. Other than white male rates have above the white male rates consistently since 1984. Since 1970, other than white male age-adjusted rates have been below the white male rates only twice, in 1981 and 1983.

Nationally, the differential between other than white males and white males moved

from 51.8 percent above in 1970 to 24.5 percent above in 1987. In 1988, the last year for which such data were available, the national other than white male rate was 27.1 percent above the rate for white males. The rate for other than white females was 29.0 percent higher in 1970 and 12.2 percent higher in 1988 than the white female rate.

Of the total 3,228 accidental deaths, 1,740 or 53.9 percent of the accidents occurred on streets and highways (Table 2.29). The second most common place of occurrence was the home with 580 deaths (18.0 percent). There were 77 deaths attributed to accidents at places for recreation and sport, 53 at industrial places or premises, 45 in resident institutions, 42 in public buildings and 23 on farms. Note that the place of injury was not specified for 16.2 percent of the accidental deaths.

Table 2.28
Age - Adjusted Accident Death Rates¹ by Race and Sex
 Michigan² and United States Residents, 1970 - 1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	48.6	71.3	27.4	47.5	69.6	26.8	56.1	83.9	30.7
	1971	47.7	69.9	26.8	46.7	68.1	26.5	55.0	84.7	28.2
	1972	48.7	72.9	25.9	48.3	72.1	25.8	51.6	80.1	25.7
	1973	48.9	72.4	26.6	48.0	71.0	26.1	54.4	82.7	28.8
	1974	43.8	65.5	23.2	43.3	64.2	23.3	47.3	75.5	22.0
	1975	41.5	61.7	22.4	41.2	61.1	22.2	44.1	67.2	23.8
	1976	40.0	58.7	22.4	40.0	58.5	22.6	39.6	61.0	20.8
	1977	40.4	59.1	22.8	40.3	58.7	22.7	41.2	62.7	22.2
	1978	40.3	59.5	22.2	40.2	59.4	21.9	42.0	63.0	24.0
	1979	38.4	56.2	21.8	38.4	55.7	21.9	39.6	61.7	20.5
	1980	36.4	53.3	20.6	36.3	52.2	21.2	37.9	62.4	16.9
	1981	34.6	52.4	18.2	35.4	53.0	18.5	32.6	51.4	16.7
	1982	32.1	47.4	17.8	32.3	47.4	17.8	32.2	49.3	17.8
	1983	30.0	45.5	15.6	30.5	46.1	15.5	29.4	44.5	16.8
	1984	30.3	44.9	16.6	30.1	44.2	16.7	32.0	50.5	16.3
	1985	32.1	47.2	17.8	31.7	46.1	17.9	34.4	55.6	16.4
	1986	31.5	45.8	17.9	31.4	45.2	18.2	32.4	52.4	15.8
	1987	31.0	44.7	18.0	30.7	44.2	17.7	34.1	50.1	20.7
	1988	31.6	45.1	18.9	31.3	44.8	18.3	34.3	48.4	22.4
	1989	30.6	42.4	19.4	29.9	41.5	18.7	36.0	50.7	23.8
U.S.	1970	53.7	80.7	28.2	51.0	76.2	27.2	72.8	115.7	35.1
	1971	51.7	77.0	27.9	49.2	72.9	26.8	70.1	109.8	35.3
	1972	51.7	77.1	27.9	49.5	73.1	27.0	68.4	108.6	33.2
	1973	51.3	76.8	27.2	49.2	73.1	26.2	66.9	105.9	32.9
	1974	45.5	68.8	23.5	43.9	66.0	22.7	57.8	91.3	28.6
	1975	44.2	67.0	22.8	42.6	64.1	22.1	56.1	89.5	27.1
	1976	42.5	63.9	22.4	41.3	61.5	21.9	52.3	83.4	25.3
	1977	43.1	64.5	22.8	41.9	62.2	22.4	52.1	83.1	25.2
	1978	43.5	65.4	22.9	42.5	63.4	22.4	51.5	81.7	25.6
	1979	42.9	64.9	21.9	42.0	63.3	21.6	49.3	78.9	23.9
	1980	42.3	64.0	21.8	41.5	62.3	21.4	49.5	78.4	24.8
	1981	39.8	60.2	20.4	39.3	59.1	20.2	44.0	70.4	21.4
	1982	36.6	55.2	18.9	36.1	54.1	18.7	40.8	64.5	20.5
	1983	35.3	52.9	18.7	34.7	51.8	18.3	40.2	62.5	21.0
	1984	35.0	52.3	18.7	34.6	51.3	18.5	38.5	60.5	19.5
	1985	34.7	51.8	18.6	34.1	50.4	18.4	39.7	62.1	20.4
	1986	35.2	52.5	18.7	34.5	51.1	18.4	39.9	62.3	20.4
	1987	34.6	51.2	18.8	33.9	49.7	18.6	39.7	61.9	20.2
	1988	35.0	51.5	19.1	34.1	49.9	18.8	40.7	63.4	21.1
	1989 ³	33.5	—	—	—	—	—	—	—	—

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Table 2.29
Deaths Due to Accidents by Place of Injury
Michigan Residents, 1989

Place	Number of Deaths
Street and Highway	1,740
Home	580
Place for Recreation and Sport	77
Industrial Place and Premises	53
Resident Institution	45
Public Building	42
Farm	23
Mine and Quarry	7
Other Specified Places	139
Place Not Specified	522
Total	3,228

Source: Office of the State Registrar and Center for Health Statistics
MDPH

Motor vehicle accidents involving collision with another motor vehicle were the largest single cause of accidental death in 1989, resulting in 831 deaths (Table 2.30). Deaths from all types of motor vehicle accidents accounted for 1,750 deaths in 1989. Accidental falls of all types resulted in 448 deaths. Accidents caused by fires and flames, accidental poisonings, accidental drownings and choking on food or other objects caused 193, 159, 112 and 93 deaths, respectively. Medical misadventures, air and space transport accidents and water transport accidents each accounted for 88, 37 and 23 deaths in 1989, respectively. Accidents caused by handguns and other firearms resulted in the deaths of 26 Michigan residents.

Deaths from motor vehicle accidents accounted for 54.2 percent of all accidental deaths in 1989. After age 14, the proportion

of motor vehicle accident deaths decreased by age group, from 84.1 percent for persons 15-24 years of age to a low of 31.2 percent of accident deaths for persons 65 years of age or over (Table 2.31).

Among children under 15 years the most frequent causes of accidental death were motor vehicle accidents, fire and drownings, resulting in 139, 65 and 28 deaths, respectively, in 1989. Motor vehicle accidents were also the leading cause of accidental death among persons 15 through 64 years of age. The next most frequent causes were accidental drownings for persons 15-24 years of age, accidental poisonings for persons 25-44 years of age and accidental falls for persons 45-64 years of age. Accidental falls, which caused 13.9 percent of all accidental deaths, were the leading cause of the accidental deaths (34.8 percent) among persons 65 years of age or older.

Table 2.32 displays the distribution of motor vehicle accident deaths by the age of the deceased person and the type of involvement of the deceased in the accident. Of the 1,750 persons killed in motor vehicle accidents in 1989, 834 (47.7 percent) were driving motor vehicles other than motorcycles at the time of the fatal accident. There were 399 deaths of passengers in motor vehicles other than motorcycles, while 224 pedestrians were killed in motor vehicle accidents. Motorcycle accidents resulted in the deaths of 64 motorcyclists and 3 motorcycle passengers. It should be noted that for 190 deaths (10.9 percent of the total) the type of involvement of the deceased in the accident was not stated.

The type of involvement of the deceased in the accident varied by age. The majority of children under age 15 killed in motor vehicle accidents were either passengers (53.2 percent) or pedestrians (25.9 percent). About three-fourths of the persons 15-24 years of age who died in motor vehicle accidents in 1989 were either drivers (51.7 percent) or pas-

Table 2.30
Deaths Due to Accidents by Type of Accident
Michigan Residents, 1989

282 List ¹ Number	Cause of Death	Number of Deaths	Percent
236	Motor Vehicle Accidents Involving Collision with Another Motor Vehicle	831	25.7
239	Motor Vehicle Accidents Not Involving Collision on Highway	343	10.6
252	Fracture, Cause Unspecified, and Other and Unspecified Falls	332	10.3
262	All Other Accidents, and Late Effects of Accidental Injury	252	7.8
237	Motor Vehicle Accidents Involving Collision with Pedestrian	213	6.6
238	Motor Vehicle Accidents Involving Collision with Other Vehicle or Object	202	6.3
253	Accidents Caused by Fires and Flames	193	6.0
255	Accidental Drowning and Submersion	112	3.5
250	Fall From One Level to Another	99	3.1
246	Accidental Poisoning by Drugs, Medicaments, and Biologicals	95	2.9
256	Inhalation and Ingestion of Food or Other Object Causing Obstruction of Respiratory Tract or Suffocation	93	2.9
249	Misadventures During Medical Care, Abnormal Reactions, and Late Complications	88	2.7
240	Motor Vehicle Traffic Accidents of Unspecified Nature	85	2.6
248	Accidental Poisoning by Gases and Vapors	48	1.5
241	Motor Vehicle Nontraffic Accidents	42	1.3
244	Air and Space Transport Accidents	37	1.1
235	Motor Vehicle Accidents Involving Collision with Train	34	1.1
258	Accidents Caused by All Other and Unspecified Firearms	24	0.7
243	Water Transport Accidents	23	0.7
261	Accidents Caused by Electric Current	21	0.7
251	Fall on Same Level	17	0.5
247	Accidental Poisoning by Other Solid or Liquid Substances	16	0.5
259	Accidents Caused by Explosive Material	7	0.2
234	Railway Accidents	6	0.2
260	Accidents Caused by Hot Substance or Object, Caustic or Corrosive Material, Steam, and Exposure to Radiation	4	0.1
254	Lightning	4	0.1
263	Drugs, Medicaments, and Biological Substances Causing Adverse Effects in Therapeutic Use	2	0.1
242	Other Road Vehicle Accidents	2	0.1
257	Accidents Caused by Handguns	2	0.1
245	Vehicle Accidents Not Elsewhere Classifiable	1	0.0
Total		3,228	100.0

¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Table 2.31
Deaths Due to Accidents by Age at Death and Type of Accident
Michigan Residents, 1989

Type of Accident	Age at Death in Years					
	Total	<15	15 - 24	25 - 44	45 - 64	65 +
Total	3,228	307	559	914	496	952
Motor Vehicle Accidents	1,750	139	470	597	247	297
Accidental Falls	448	2	3	43	69	331
Accidents Caused by Fire and Flames	193	65	14	45	26	43
Accidental Drownings	112	28	23	35	12	14
Accidental Poisonings	159	5	14	74	32	34
Choking on Food or Other Object	93	10	1	11	12	59
Accidents Caused by Handguns and Other Firearms	26	7	9	8	2	-
Air and Space Transport Accidents	37	3	4	13	14	3
Misadventures During Medical Care, Abnormal Reactions, and Late Complications	88	2	-	9	17	60
Water Transport Accidents	23	-	4	10	5	4
All Other Accidents	299	46	17	69	60	107

Source: Office of the State Registrar and Center for Health Statistics, MDPH

sengers (24.0 percent) of motor vehicles other than motorcycles. Among persons 25-44 years and 45-64 years of age 53.6 percent and 49.8 percent, respectively, were driving motor vehicles other than motorcycles at the time of the accident. Among persons over 64 years less than half (49.5 percent) were driving and 20.2 percent were passengers in motor vehicles other than motorcycles. Pedestrians accounted for 16.5 percent of all motor vehicle accident deaths among persons 65 years of age and over, compared to 12.8 percent for persons of all ages. Of the 67 motorcyclists who died, 86.6 percent were between 15 and 44 years of age.

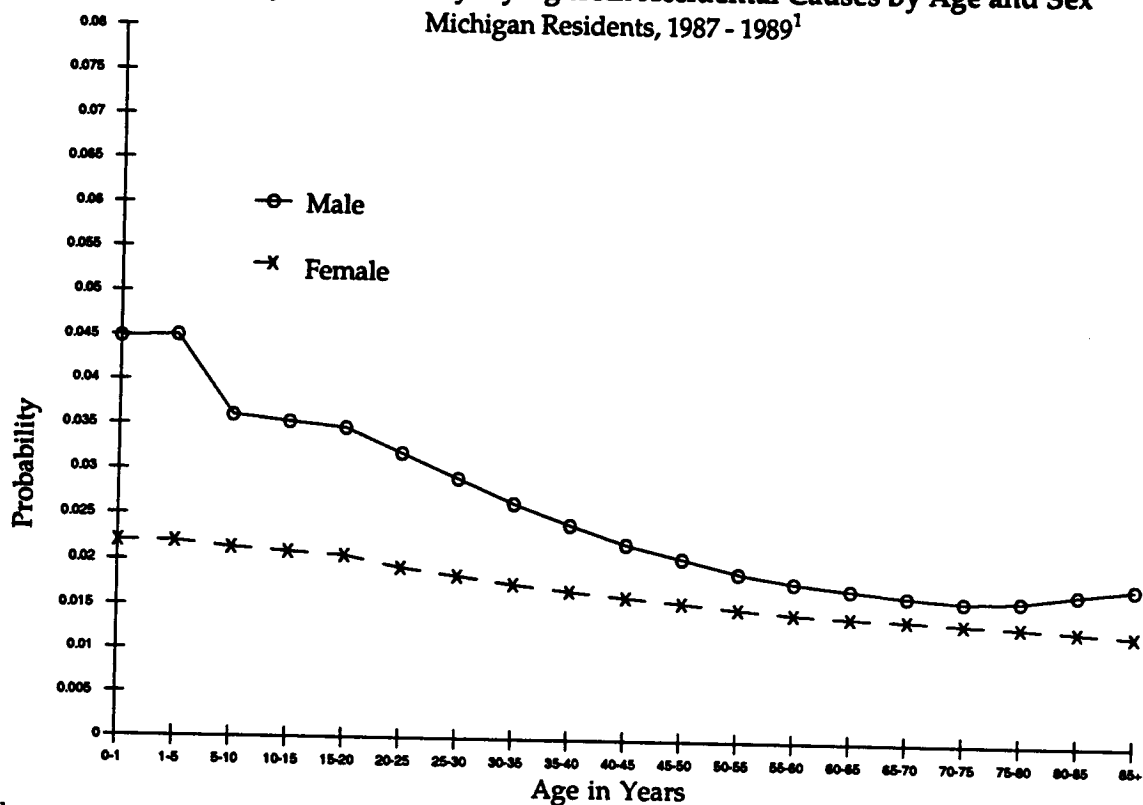
It can be seen from Figure 2.25 that the probability of eventually having an accidental death is greater for younger persons. According to Michigan mortality data from the years 1987 through 1989 the probability of eventually dying from accidental causes is 0.045 for males and 0.022 for females at birth. Probabilities for males decline slowly through childhood and the teenage years, fall rapidly between ages 15 and 54, and thereafter decline more slowly until the lowest probability of 0.016 is reached at age 70-74. For females the probabilities decline more moderately and steadily. Probabilities for males remain much higher than for females until about age 50 and slightly higher after that age.

Table 2.32
Deaths From Motor Vehicle Accidents by Person Injured and Age at Death
Michigan Residents, 1989

Person Injured	Age at Death in Years					
	Total	<15	15 - 24	25 - 44	45 - 64	65 +
Total	1,750	139	470	597	247	297
Driver of Motor Vehicle Other Than Motorcycle	834	1	243	320	123	147
Passenger in Motor Vehicle Other Than Motorcycle	399	74	113	109	43	60
Motorcyclist	64	2	22	33	7	-
Passenger on Motorcycle	3	-	3	-	-	-
Rider of Animal; Occupant of Animal-Drawn Vehicle	1	-	-	1	-	-
Pedal Cyclist	33	16	7	3	4	3
Pedestrian	224	36	36	69	34	49
Other Specified Person	2	-	-	1	1	-
Unspecified Person	190	10	46	61	35	38

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.25
Probability of Eventually Dying from Accidental Causes by Age and Sex
Michigan Residents, 1987 - 1989¹



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

CHRONIC OBSTRUCTIVE PULMONARY DISEASES AND ALLIED CONDITIONS

The fifth leading cause of death in 1989 was chronic obstructive pulmonary diseases and allied conditions. This group of diseases caused 2,852 Michigan resident deaths. Of these deaths, 1,648 (57.8 percent) were to males (Table 2.33).

The median age at death of persons who died from these respiratory diseases was 75 years for male and 74 years for females. The median age for white persons (75 years) was 5 years higher than that for black persons (70 years).

The crude death rate for chronic obstructive pulmonary diseases and allied conditions was 30.8 per 100,000 population. The crude death

rate for males was 1.4 times that for females (Table 2.34).

Age-specific rates for males and females from Table 2.34 are graphically presented in Figure 2.26. The strong association between increasing rates of chronic obstructive pulmonary diseases and allied conditions and age is clearly evident.

The age-specific rates for males were generally greater than those for females in all age groups. Above age 54, the relative differential between rates for males and females increased steadily with age. In the age group 85 years and over the rate for males was 3.2 times that for females. The age-adjusted

Table 2.33
Deaths Due to Chronic Obstructive Pulmonary Diseases and Allied Conditions
by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	1	1	-	1	1	-	-	-	-	-	-	-
1-4	-	-	-	-	-	-	-	-	-	-	-	-
5-9	1	1	-	-	-	-	1	1	-	-	-	-
10-14	8	6	2	6	5	1	2	1	1	-	-	-
15-19	2	2	-	1	1	-	1	1	-	-	-	-
20-24	3	1	2	-	-	-	3	1	2	-	-	-
25-29	6	4	2	3	2	1	3	2	1	-	-	-
30-34	8	3	5	5	2	3	3	1	2	-	-	-
35-39	15	6	9	6	2	4	9	4	5	-	-	-
40-44	11	4	7	6	3	3	5	1	4	-	-	-
45-49	33	15	18	27	13	14	6	2	4	-	-	1
50-54	58	25	33	49	23	26	8	2	6	1	-	1
55-59	131	81	50	117	74	43	14	7	7	-	-	-
60-64	261	132	129	232	117	115	25	13	12	4	2	2
65-69	368	220	148	327	194	133	37	25	12	3	1	2
70-74	534	302	232	484	267	217	43	31	12	6	3	3
75-79	581	343	238	538	312	226	36	29	7	5	2	3
80-84	454	281	172	428	264	163	23	16	7	3	1	2
85-89	248	154	94	228	139	89	20	15	5	-	-	-
90+	129	67	62	122	62	60	6	4	2	1	1	-
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
All Ages	2,852	1,648	1,203	2,580	1,481	1,098	245	156	89	23	10	13
Median Age At Last Birthday	74	75	74	75	75	74	70	72	65	72	73	71

¹ Deaths with race and/or sex not stated are included only in the total column.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.34
**Death Rates for Deaths Due to Chronic Obstructive Pulmonary Diseases and Allied
 Conditions by Age, Race and Sex¹**
 Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	30.8	36.5	25.3	32.6	38.2	27.2	19.9	27.0	13.7
Under 1	*	*	*	*	*	*	*	*	*
1 - 14	0.5	0.7	*	0.4	0.6	*	*	*	*
15 - 24	0.3	*	*	*	*	*	*	*	*
25 - 34	0.9	0.9	0.9	0.6	*	*	2.9	*	*
35 - 44	2.0	1.5	2.4	1.0	0.9	1.2	8.7	7.0	10.1
45 - 54	9.4	8.5	10.3	9.0	8.7	9.3	13.3	*	17.0
55 - 64	48.1	54.9	41.9	48.3	55.1	42.0	45.4	52.1	40.0
65 - 74	141.8	185.0	107.3	142.5	182.1	110.8	129.1	208.8	68.3
75 - 84	304.1	478.9	195.4	314.1	489.5	205.4	195.3	379.2	76.3
85 and Over	303.9	583.3	181.1	309.6	587.7	188.9	251.5	539.6	102.7
Age-Adjusted Rate ²	18.5	24.8	14.2	18.5	24.7	14.2	17.7	25.4	12.4

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

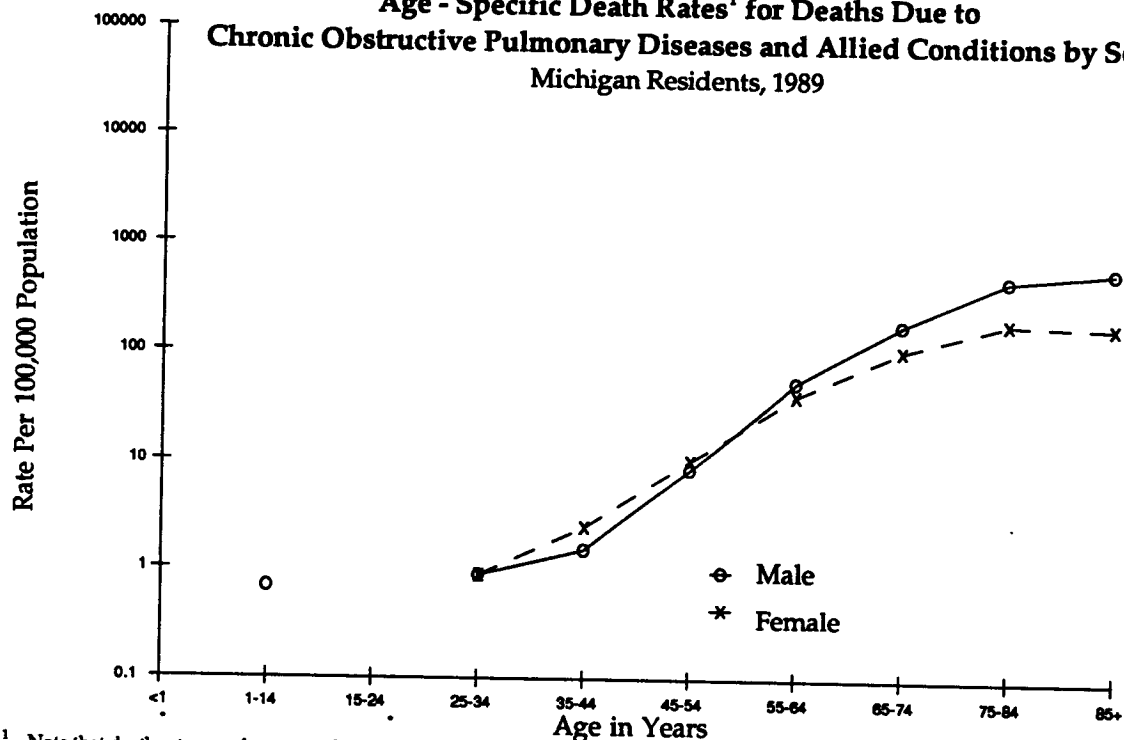
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1960. The race of distribution was modified to be consistent with the racial categories from the 1970 Census and categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

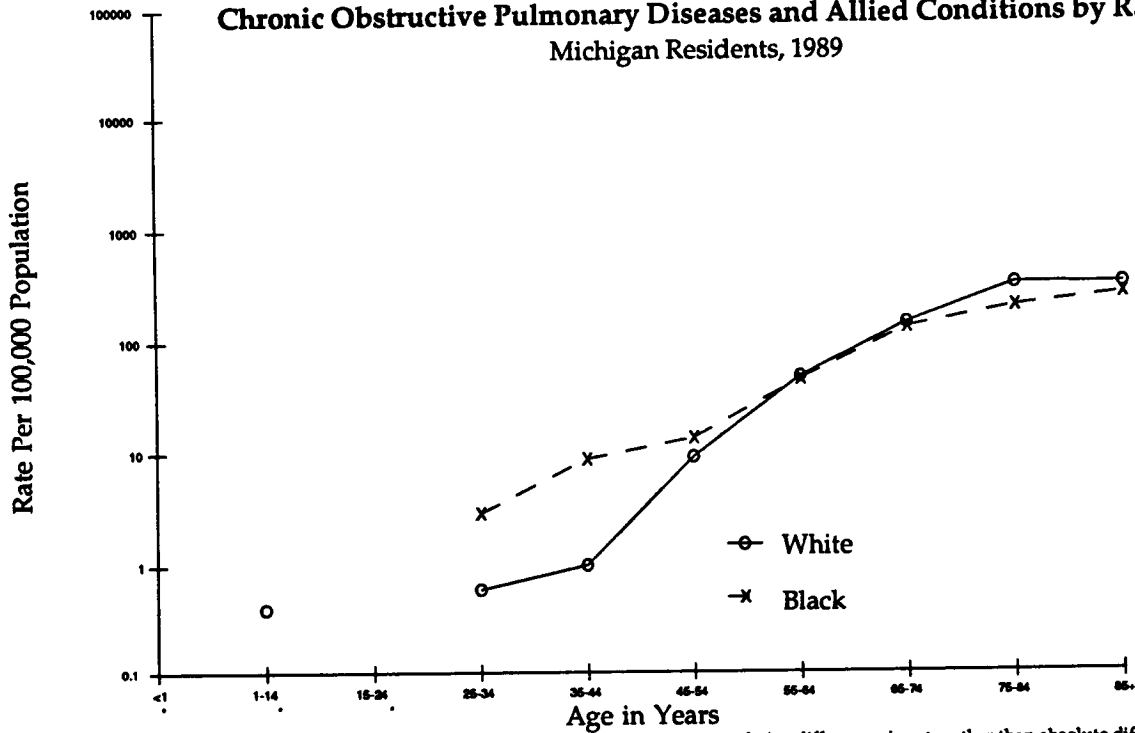
Figure 2.26
**Age - Specific Death Rates¹ for Deaths Due to
 Chronic Obstructive Pulmonary Diseases and Allied Conditions by Sex**
 Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

* Rate is considered statistically unreliable.

Figure 2.27
**Age - Specific Death Rates¹ for Deaths Due to
 Chronic Obstructive Pulmonary Diseases and Allied Conditions by Race**
 Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
 • Rate is considered statistically unreliable.

death rate for this group of diseases was 1.7 times as high for males as it was for females.

Age-specific rates for white and black persons are displayed in Figure 2.27. For those age groups with sufficient data to calculate rates, rates were higher for black persons through age 54, after which they were higher for white persons. The age-adjusted death rate for these respiratory diseases for white persons was 4.5 percent above that for black persons (Table 2.34).

Table 2.35 presents by ancestry the numbers of deaths due to chronic obstructive pulmonary disease and allied conditions. Of the specified ancestry groups, 2,184 deaths were among individuals of European ancestry. Individuals of African ancestry accounted for 225 deaths in this cause of death. There were 42 deaths among individuals of American

Indian ancestry, 12 deaths among Hispanics and 7 deaths among Arab Asians.

Table 2.36 presents Michigan age-adjusted death rates by sex and race for the period 1970-1989 for deaths from this group of respiratory diseases. The age-adjusted death

Table 2.35
**Deaths Due to
 Chronic Obstructive Pulmonary Diseases
 by Ancestry**
 Michigan Residents, 1989

Ancestry	Deaths	Percent
African	225	7.9
American Indian	42	1.5
Arabian Asian	7	0.2
European	2,184	76.6
Hispanic	12	0.4
Other (includes American)	262	9.2
Unknown	120	4.2
Total	2,852	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.36
Age - Adjusted Death Rates¹ for Deaths Due to Chronic Obstructive Pulmonary Diseases and Allied Conditions² by Race and Sex
 Michigan³ Residents, 1970 - 1988 and United States Residents, 1979 - 1988

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	14.2	24.9	5.6	14.3	25.3	5.4	12.3	18.5	6.7
	1971	13.9	24.4	5.6	13.8	24.5	5.4	13.9	22.2	6.5
	1972	14.9	26.5	5.7	15.2	27.2	5.8	11.1	19.3	4.2
	1973	15.4	26.7	6.4	15.6	27.3	6.5	12.2	20.5	5.1
	1974	13.8	24.1	5.8	14.1	24.7	6.0	9.6	17.2	3.1
	1975	14.3	25.1	6.1	14.5	25.6	6.2	11.4	19.0	5.1
	1976	14.7	25.4	6.8	15.0	25.9	6.9	12.0	20.8	5.1
	1977	14.1	24.4	6.5	14.4	25.1	6.5	10.8	17.1	5.9
	1978	15.7	26.1	8.2	15.8	26.3	8.4	13.9	23.7	6.3
	1979	15.2	26.1	7.4	15.5	26.6	7.5	12.7	21.6	5.8
	1980	15.7	25.5	8.9	15.9	25.7	9.1	13.2	22.4	6.0
	1981	15.6	25.5	9.0	15.9	26.0	9.2	12.8	20.7	7.1
	1982	15.5	24.5	9.5	15.7	24.7	9.6	13.7	21.9	7.6
	1983	17.0	25.8	11.5	17.3	25.9	11.8	15.3	24.3	8.7
	1984	17.6	27.4	10.9	17.9	27.8	11.1	14.7	23.4	8.3
	1985	19.3	29.2	12.6	19.4	29.3	12.7	17.9	27.6	11.0
	1986	19.5	28.8	13.2	19.7	29.0	13.4	16.9	26.2	10.0
	1987	18.9	26.6	13.9	19.1	26.6	14.1	16.9	25.6	10.9
	1988	19.2	27.2	13.5	19.5	27.4	14.0	15.9	25.2	9.2
1989	18.5	24.8	14.2	18.5	24.7	14.2	18.0	25.2	13.1	
U.S.	1979	14.6	24.3	7.7	14.9	25.0	8.0	10.5	17.4	5.3
	1980	15.9	26.1	8.9	16.3	26.7	9.2	11.5	19.2	5.8
	1981	16.3	26.2	9.5	16.7	26.8	9.8	11.7	19.6	5.9
	1982	16.2	25.5	9.8	16.6	26.2	10.0	11.7	18.7	6.7
	1983	17.4	27.0	10.9	17.9	27.6	11.3	12.7	20.5	7.1
	1984	17.7	27.0	11.4	18.2	27.6	11.8	13.1	21.0	7.5
	1985	18.7	27.9	12.5	19.2	28.5	12.9	13.8	21.7	8.1
	1986	18.8	27.6	12.8	19.2	28.1	13.3	14.0	22.2	8.0
	1987	18.7	26.9	13.2	19.2	27.4	13.7	14.1	21.6	8.7
	1988	19.4	27.5	14.0	19.8	27.8	14.5	14.8	23.1	9.0
	1989 ⁴	19.4	—	—	—	—	—	—	—	—

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Categories used for 1970-1978 are 8th Revision ICDA codes 490-493 (bronchitis, emphysema, and asthma) and *519.3 (chronic obstructive lung disease without mention of asthma, bronchitis or emphysema). For years since 1979, 9th Revision ICD codes 490-496 are used. No single comparability ratio was developed for the 9th Revision category and the most nearly comparable 8th Revision categories. However, for the combined categories of bronchitis, emphysema, and asthma the provisional comparability ratio is 1.0002, and that for the remaining titles (chronic obstructive lung disease without mention of asthma, bronchitis, or emphysema under the 8th Revision and other chronic obstructive pulmonary diseases and allied conditions under the 9th Revision) is 1.0054. Thus, the comparability between the composite categories is quite good. The composite category was not used for ranking causes of death under the 8th Revision and thus appeared in 1979 for the first time among the 10 leading causes of death.

³ Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

⁴ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

rates for males remained about the same over the period, while for females the rate in 1989 was 2.5 times the rate in 1970. The increase in age-adjusted rates for females was higher for white females (2.6 times) than for other than white females (2.0 times) between 1970 and 1989.

The age-adjusted death rate for the total population of Michigan from chronic obstructive pulmonary diseases and allied conditions

was 4.6 percent less than the United States provisional rate in 1989 (see Technical Notes).

Of the 2,852 Michigan resident deaths due to chronic obstructive pulmonary diseases and allied conditions, 1,833 (64.3 percent) were classified as chronic airways obstruction, not elsewhere classified. There were 676 deaths in 1989 due to emphysema, 172 due to asthma, and 171 due to bronchitis (Table 2.37).

Table 2.37
Deaths Due to Chronic Obstructive Pulmonary Diseases And Allied Conditions by
Specific Cause
Michigan Residents, 1989

282 List ¹ Number	Cause of Death	Number of Deaths	Percent
174	Chronic Airways Obstruction, not elsewhere classified	1,833	64.3
171	Emphysema	676	23.7
172	Asthma	172	6.0
170	Chronic Bronchitis	123	4.3
173	Bronchiectasis and Extrinsic Allergic Alveolitis	26	0.9
169	Bronchitis, not Specified as Acute or Chronic	22	0.8
Total		2,852	100.0

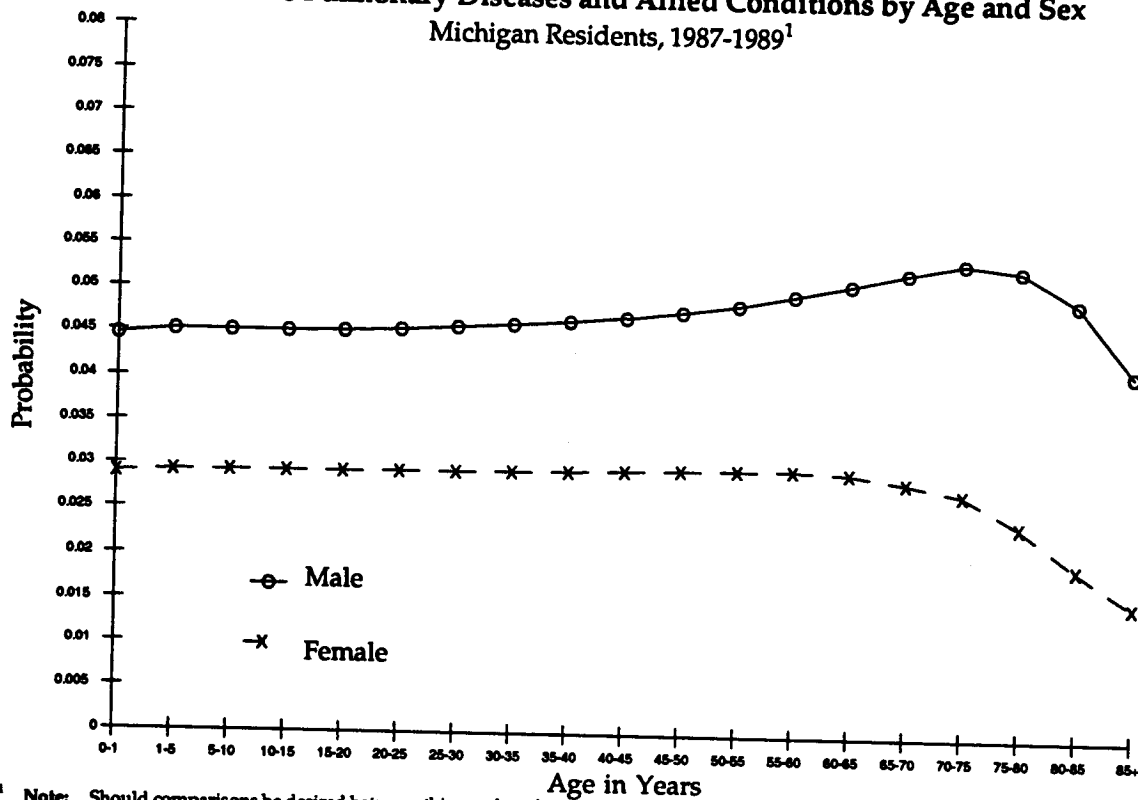
¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Based on mortality data from 1987-1989, the probability of eventual death due to chronic obstructive pulmonary diseases and allied conditions is 0.045 for males and 0.029 for females at birth. The probability for males increases steadily to a peak of 0.053 at ages

70-74 and then declines in the last few age groups to 0.041. The probability for females remains stable from birth through ages 60-64 and then declines in the oldest age groups (Figure 2.28). By age 85 and over, the probability for females declines to 0.015.

Figure 2.28
Probability of Eventually Dying from Chronic
Obstructive Pulmonary Diseases and Allied Conditions by Age and Sex
Michigan Residents, 1987-1989¹



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

PNEUMONIA AND INFLUENZA

One of every 30 deaths that occurred to Michigan residents in 1989 was due to pneumonia and influenza. There were a total of 2,633 such deaths of which 1,362 (51.7 percent) were to females (Table 2.38).

The overall median age at death in 1989 for those dying from pneumonia and influenza was 82 years. This is well above the median age of 73 years for all deaths. The median ages at death for white persons were significantly higher than those for black persons. The median age for white males (80) was 12 years greater than that for black males (68), while for white females the median of 85 years exceeded by 7 years that for black females. There were a total of twelve deaths due to pneumonia and influenza for persons of other races. The median age at death for persons of other races dying from these diseases was 72 years.

The overall crude death rate for pneumonia and influenza deaths in 1989 was 28.4, compared to a rate of 29.0 in 1988. The crude rate for females (28.6) was 1.8 percent greater than the male rate (28.1). On an age-adjusted basis, the male rate exceeded the female rate by 67.6 percent (Table 2.39).

The age-specific death rates for males and females given in Table 2.39 are graphically displayed in Figure 2.29. Pneumonia and influenza death rates increased rapidly beyond age 54. Male rates were higher than female rates for ages where sufficient data were available to allow calculation of rates, except individuals 1-14 years of age.

The crude rates given in Table 2.39 indicate that a greater proportion of the white population died of pneumonia and influenza in 1989 than was the case for the black population.

Table 2.38
Deaths Due to Pneumonia and Influenza by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	17	11	6	10	5	5	7	6	1	-	-	-
1-4	12	7	5	8	5	3	3	2	1	1	-	1
5-9	4	3	1	1	-	1	3	3	-	-	-	-
10-14	4	-	4	2	-	2	2	-	2	-	-	-
15-19	4	2	2	2	1	1	2	1	1	-	-	-
20-24	6	1	5	4	1	3	2	-	2	-	-	-
25-29	16	7	9	9	5	4	7	2	5	-	-	-
30-34	18	12	6	8	5	3	10	7	3	-	-	-
35-39	21	13	8	8	5	3	12	7	5	1	1	-
40-44	32	18	14	14	7	7	18	11	7	-	-	-
45-49	27	14	13	16	5	11	11	9	2	-	-	-
50-54	39	21	18	27	12	15	11	8	3	-	-	-
55-59	32	22	10	26	18	8	6	4	2	-	-	-
60-64	102	67	35	83	51	32	18	15	3	1	1	-
65-69	166	117	49	134	94	40	28	21	7	3	1	2
70-74	236	142	94	204	117	87	30	23	7	2	2	-
75-79	333	182	151	292	159	133	40	22	18	1	1	-
80-84	452	226	226	415	207	208	33	17	16	3	2	1
85-89	509	212	297	477	200	277	32	12	20	-	-	-
90+	603	194	409	560	179	381	43	15	28	-	-	-
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
All Ages	2,633	1,271	1,362	2,300	1,076	1,224	318	185	133	12	8	4
Median Age At Last Birthday	82	79	85	83	80	85	72	68	78	72	74	69

¹ Deaths with race not stated are included only in the total column.

Table 2.39
Pneumonia and Influenza Death Rates by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	28.4	28.1	28.6	29.1	27.8	30.3	26.0	32.2	20.4
Under 1	12.0	15.2	8.6	8.9	8.7	9.1	27.2	46.1	*
1 - 14	1.0	1.0	1.1	0.7	0.6	0.8	2.6	3.2	*
15 - 24	0.7	*	1.0	0.5	*	*	*	*	*
25 - 34	2.2	2.5	1.9	1.3	1.5	1.1	8.1	9.3	7.1
35 - 44	4.0	4.7	3.2	1.9	2.1	1.7	18.7	25.1	13.5
45 - 54	6.8	7.7	6.3	5.2	4.3	6.0	20.8	36.3	8.5
55 - 64	16.4	22.9	10.5	15.1	19.9	10.6	28.0	49.5	10.5
65 - 74	63.2	91.8	40.4	59.3	83.2	40.1	95.2	167.8	39.8
75 - 84	230.7	312.6	179.7	229.7	310.5	179.7	241.6	328.6	185.3
85 and Over	896.4	1,071.5	819.4	917.2	1,108.2	834.4	725.5	766.8	704.1
Age-Adjusted Rate ²	13.1	17.1	10.2	12.1	15.4	9.8	20.7	30.8	13.0

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

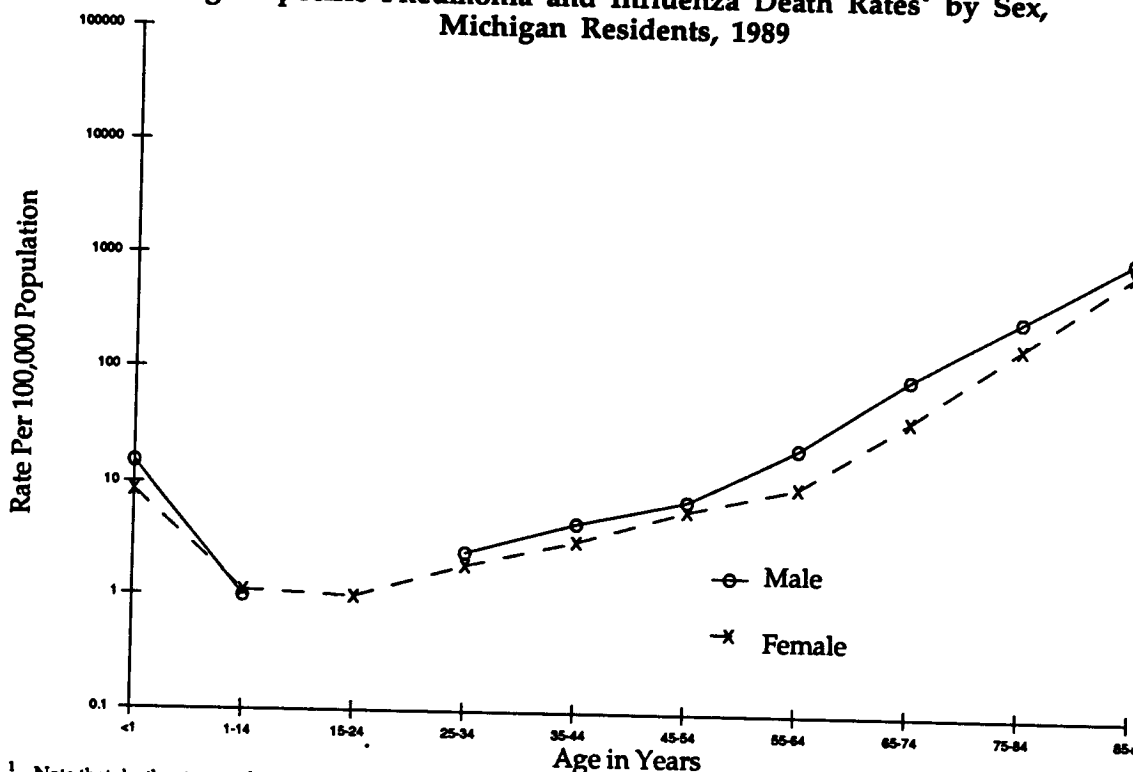
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.29
Age - Specific Pneumonia and Influenza Death Rates¹ by Sex,
Michigan Residents, 1989

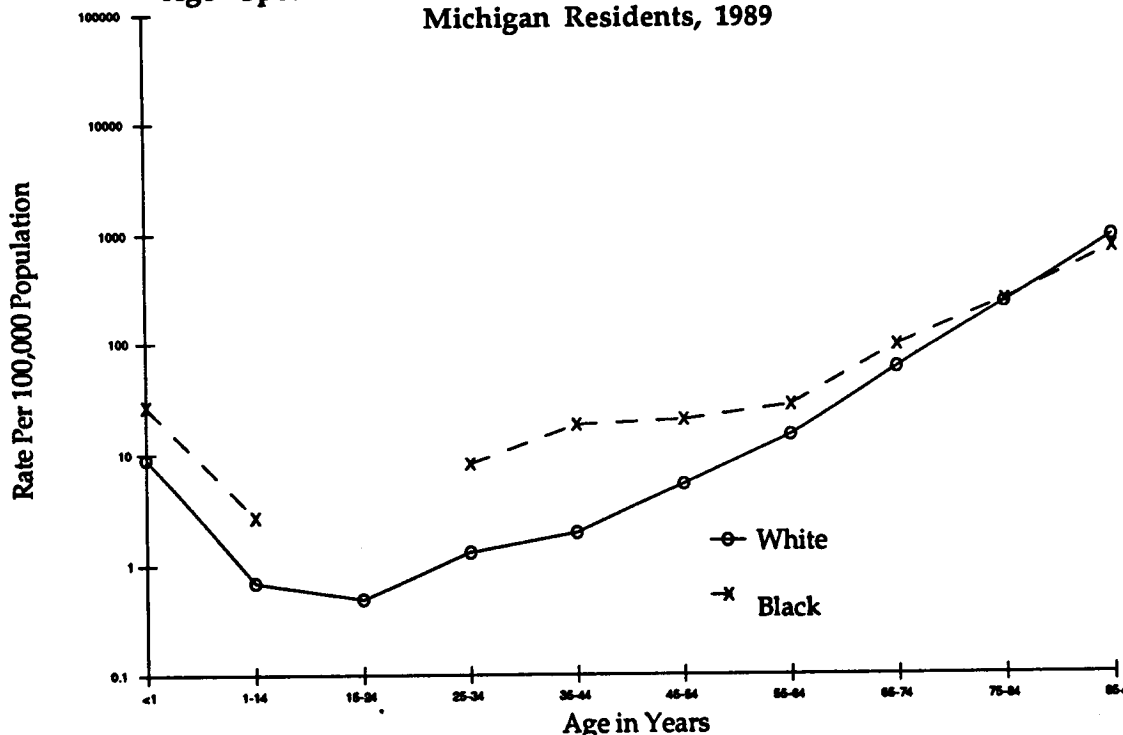


¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
* Rate is considered statistically unreliable.

On an age-adjusted basis, however, the rate for the black group was 71.1 percent above that for the white group. Age-specific data indicate that the rates for the black population were higher for all age groups with sufficient data to calculate rates up to age 84. Among persons 85 years or over, the pneumonia and influenza death rate was higher for white persons (Figure 2.30).

As indicated in Table 2.40, 2,013 individuals of European ancestry died due to pneumonia and influenza. Another 289 individuals who were of African ancestry died of pneumonia and influenza. Pneumonia and influenza also claimed the lives of 18 individuals of Hispanic descent, 14 of American Indian descent and 8 of Arab Asian descent.

Figure 2.30
Age - Specific Pneumonia and Influenza Death Rates¹ by Race
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
² Rate is considered statistically unreliable.

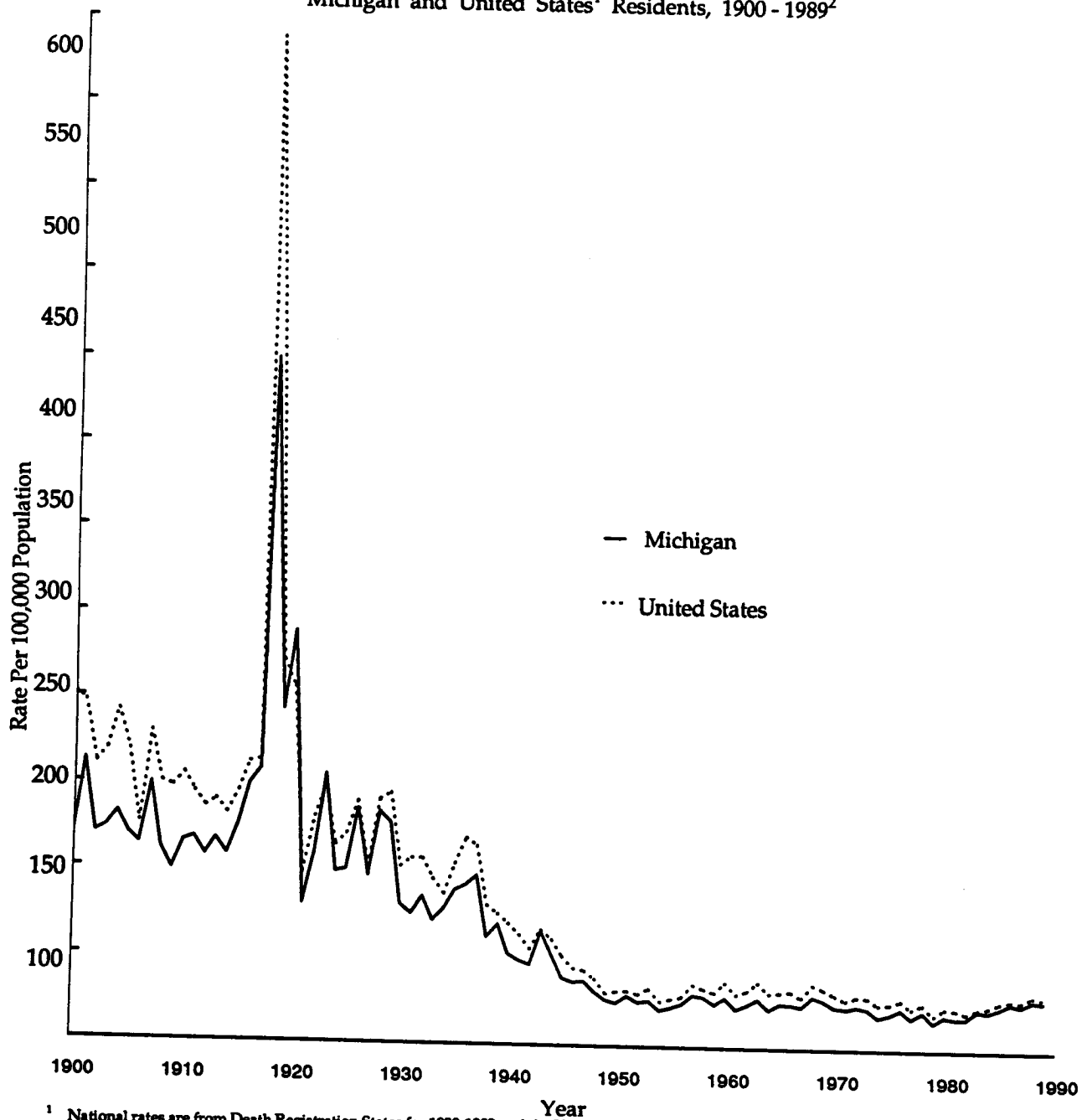
Table 2.40
Pneumonia and Influenza Deaths
by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	289	11.0
American Indian	14	0.5
Arabian Asian	8	0.3
European	2,013	76.5
Hispanic	18	0.7
Other (includes American)	202	7.7
Unknown	89	3.4
Total	2,633	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Pneumonia and influenza death rates have declined markedly since 1900 both nationally and in Michigan (Figure 2.31). Although the annual rate was quite erratic from 1900 through 1949, the Michigan rates declined 78.1 percent from a rate of 120.3 in 1900 to 26.3 in 1949. Nationally the rate declined 85.2 percent from a rate of 202.1 in 1900 to 30.0 in 1949. Since that time the rate has been fairly stable with mild year to year variation.

Figure 2.31
Pneumonia and Influenza Death Rates
 Michigan and United States¹ Residents, 1900 - 1989²



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² Pneumonia and Influenza death rates since 1900 are suitable for general comparison over time but detailed study (such as time series) requires special consideration. See Technical Notes.

Michigan's rate of death due to this cause has been below the national rate every year throughout this century except 1920 and 1923. In 1900, the rate in Michigan was 40.5 percent below the national statistic. The peak year for both was 1918 when the rates for the United States and Michigan were 588.5 and 399.8, respectively. In 1979 century low rates of 15.9 for Michigan and 20.1 for the nation were recorded. Michigan's rate of 28.4 in 1989 was 6.3 percent below the provisional rate of 30.3 for the United States.

Michigan's age-adjusted death rate for pneumonia and influenza has been below that for the nation every year between 1970 and 1989 except 1983 and 1986 (Table 2.41). In 1989 the Michigan age-adjusted rate was 1.5 percent below the provisional national rate. Between 1970 and 1989 the age-adjusted rate for Michigan declined by 31.8 percent.

Age-adjusted rates for other than white persons declined more rapidly than rates for white persons. The decline was most pronounced for other than white females for whom the age-adjusted rate dropped 61.0 percent between 1970 and 1985. In 1986 the rate for other than white females was the highest rate since 1976. In 1989 the other than white female rate declined to 59.4 percent below the 1970 rate. The decline in the age-adjusted rate for other than white males was 38.2 percent between 1970 and 1989. The

declines in rates for other than white males and females were mirrored by strong declines in the rates for the United States.

The majority of deaths due to pneumonia and influenza were not attributed to a specific organism. Pneumonia due to other and unspecified organisms (2,235) accounted for 84.9 percent of all Michigan pneumonia and influenza deaths in 1989 (Table 2.42). Another 6.4 percent of the deaths were due to pneumococcal and other bacterial pneumonia, and 5.8 percent were due to bronchopneumonia, organism unspecified. These three most frequent categories of pneumonia and influenza deaths together accounted for 97.1 percent of all such deaths. Influenza was the direct cause of 2.2 percent of the pneumonia and influenza deaths in 1989, the same as in 1988.

The likelihood of eventual death being caused by pneumonia and influenza from birth to age 49 is between 0.039 and 0.040 for females and 0.036 and 0.038 for males. The calculated probabilities for each sex increase after this age, with probabilities for males increasing more rapidly than those for females. Based on the Michigan mortality experience of 1987-1989 at ages 85 and above, the chances of eventually dying from pneumonia and influenza are 0.074 for males and 0.061 for females (Figure 2.32).

Table 2.41
Age - Adjusted Pneumonia and Influenza Death Rates¹ by Race and Sex
Michigan² and United States Residents, 1970 - 1989³

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	19.2	24.7	14.6	16.7	21.8	12.5	38.8	47.9	30.8
	1971	17.7	23.9	12.7	15.4	20.6	11.3	36.0	50.7	23.1
	1972	18.7	25.7	12.9	16.8	23.1	11.8	33.1	47.3	20.7
	1973	17.0	21.9	13.2	14.9	19.4	11.5	34.2	43.3	26.5
	1974	13.3	17.7	10.0	12.0	15.7	9.5	22.9	34.0	13.7
	1975	14.0	18.6	10.6	13.0	17.1	10.0	21.8	29.6	15.1
	1976	15.7	20.8	12.0	14.8	19.5	11.5	22.2	30.5	15.4
	1977	12.2	17.6	8.2	11.4	16.4	7.8	17.8	26.1	11.0
	1978	14.1	18.1	11.2	13.7	17.6	11.0	16.2	21.1	12.3
	1979	9.6	13.3	7.1	8.9	12.3	6.7	14.4	19.9	9.8
	1980	11.7	16.1	8.6	10.8	14.5	8.2	18.8	28.4	11.2
	1981	10.2	14.4	7.4	9.3	13.0	7.0	16.6	24.8	10.3
	1982	10.1	14.4	7.4	9.5	13.6	7.0	14.2	20.1	9.8
	1983	12.0	16.8	8.8	11.3	15.5	8.4	17.4	25.9	10.9
	1984	12.0	16.8	8.8	11.3	15.9	8.3	17.3	23.7	12.4
	1985	12.4	16.8	9.4	11.8	16.2	8.9	15.9	21.0	12.0
	1986	13.7	18.1	10.7	12.9	17.3	10.1	18.3	23.6	14.4
	1987	12.8	16.3	10.3	11.9	15.2	9.8	18.5	25.0	13.7
	1988	13.6	17.9	10.7	12.9	17.0	10.2	18.0	24.5	13.3
	1989	13.1	17.1	10.2	12.1	15.4	9.8	19.9	29.6	12.5
U.S.	1970	22.1	28.8	16.7	19.8	26.0	15.0	38.1	50.1	27.9
	1971	19.2	25.1	14.6	17.5	22.8	13.4	31.6	42.2	22.6
	1972	20.7	27.5	15.5	19.0	25.3	14.4	32.4	44.3	22.6
	1973	19.9	26.4	15.0	18.3	24.4	13.9	31.0	42.0	22.2
	1974	16.8	22.4	12.6	15.6	20.8	11.8	25.1	34.9	17.2
	1975	16.4	22.2	12.1	15.4	20.8	11.5	23.6	33.4	15.8
	1976	17.1	22.9	13.0	16.1	21.5	12.4	24.0	33.5	16.5
	1977	13.9	19.1	10.2	13.0	17.8	9.6	20.6	29.5	13.6
	1978	15.1	20.6	11.3	14.2	19.3	10.7	21.4	30.8	14.2
	1979	11.2	15.4	8.2	10.5	14.4	7.8	15.8	22.8	10.5
	1980	12.9	17.4	9.8	12.2	16.2	9.4	18.0	26.1	11.9
	1981	12.3	16.6	9.2	11.6	15.6	9.0	16.3	24.0	10.5
	1982	10.9	15.2	8.0	10.3	14.3	7.6	14.4	21.1	9.5
	1983	11.8	16.2	8.8	11.3	15.3	8.6	14.9	22.1	9.6
	1984	12.2	16.7	9.1	11.6	15.8	8.8	15.8	23.0	10.5
	1985	13.4	18.2	10.1	12.8	17.4	9.8	16.8	24.2	11.4
	1986	13.5	18.4	10.3	12.9	17.5	9.9	17.1	24.3	11.8
	1987	13.1	17.7	10.0	12.5	16.8	9.7	16.4	23.5	11.1
	1988	14.2	18.9	11.0	13.6	18.0	10.7	17.5	24.6	12.1
	1989 ⁴	13.3	—	—	—	—	—	—	—	—

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ The introduction in 1979 of the 9th Revision of the International Classification of Diseases, WHO, for coding causes of death resulted in substantial changes in this category, making trend comparisons difficult. The estimated comparability ratio for this category is 0.9264. Note that comparability ratios were developed for comparing crude death rates, and they are not strictly applicable for comparing age-adjusted death rates. For further discussion of comparability ratios see Qualifications and Limitations of Data and Calculations.

⁴ Provisional data.

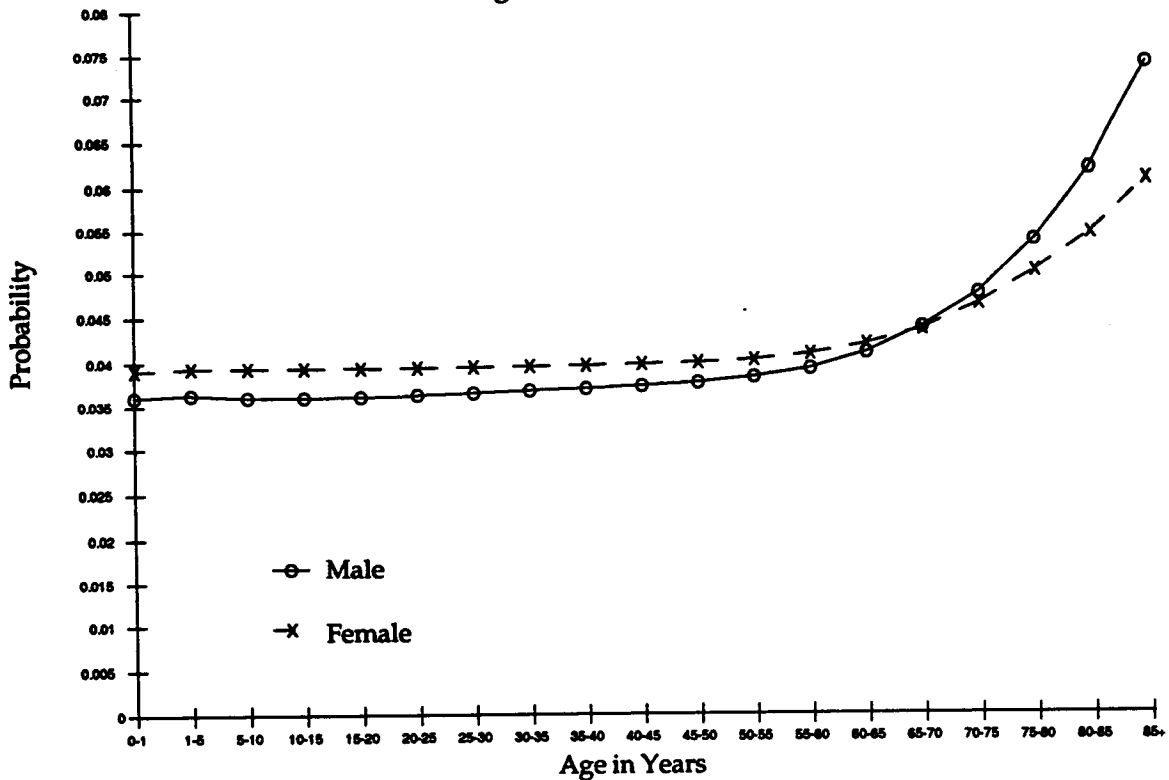
Table 2.42
Deaths Due to Pneumonia and Influenza by Specific Cause
Michigan Residents, 1989

282 List ¹ Number	Cause of Death	Number of Deaths	Percent
167	Pneumonia due to Other and Unspecified Organism	2,235	84.9
165	Pneumococcal and Other Bacterial Pneumonia	168	6.4
166	Bronchopneumonia, Organism Unspecified	152	5.8
168	Influenza	59	2.2
164	Viral Pneumonia	19	0.7
Total		2,633	100.0

¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.32
Probability of Eventually Dying from Pneumonia and Influenza by Age and Sex
Michigan Residents, 1987 - 1989



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

DIABETES MELLITUS

In 1989 2,052 Michigan resident deaths were attributed to diabetes mellitus, the seventh leading cause of death. This was 530 more deaths than were caused by this disease in 1988. Deaths to females numbered 1,179 or 57.5 percent of all diabetes mellitus deaths.

The median age at death for persons dying from diabetes mellitus was 73 years (Table 2.43). This is the same as the median age of all deaths. Males dying from this disease had a median age of 70 years, whereas the median for females was 74 years. The median for white males was 72 years compared to 76 years for white females. For black males and females the medians were 65 and 69 years, respectively.

Diabetes mellitus death rates by age, race, and sex are presented in Table 2.44. The diabetes mellitus crude death rate was 22.1 in

1989. The crude rate for females was 24.8, 28.5 percent higher than the rate of 19.3 for males. When age-adjusted rates are examined, however, the rate for males was 6.6 percent higher than the rate for females.

Age-specific mortality rates for males and females presented in Table 2.44 are graphically displayed in Figure 2.33. Rates for males were greater than those for females for all age groups under 55 years of age with sufficient numbers of events to calculate rates. Except for individuals 65-74 year of age, rates for females were greater than those of males for age groups above 54 years of age. Rates for both sexes increased steadily with advancing age.

The crude diabetes mellitus death rate for black persons was 47.8 percent above that of white persons (30.9 compared to 20.9). The

Table 2.43
Deaths Due to Diabetes Mellitus by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	1	1	-	1	1	-	-	-	-	-	-	-
1-4	1	-	1	1	-	1	-	-	-	-	-	-
5-9	1	-	1	1	-	1	-	-	-	-	-	-
10-14	-	-	-	-	-	-	-	-	-	-	-	-
15-19	1	-	1	-	-	-	-	-	-	-	-	-
20-24	6	4	2	4	3	1	2	1	1	-	-	-
25-29	13	6	7	3	2	1	6	4	2	-	-	-
30-34	20	12	8	14	8	6	10	4	6	-	-	-
35-39	32	21	11	26	17	9	6	4	2	-	-	-
40-44	44	26	18	30	15	15	6	4	2	-	-	-
45-49	60	33	27	44	26	18	13	10	3	1	1	-
50-54	55	35	20	39	25	14	14	7	7	-	-	-
55-59	97	47	50	67	34	33	29	9	5	2	1	1
60-64	204	92	112	142	60	82	61	13	16	1	-	1
65-69	287	126	161	222	98	124	62	32	29	1	-	1
70-74	326	152	174	269	131	138	62	27	35	3	1	2
75-79	316	130	186	272	112	160	52	20	32	5	1	4
80-84	298	101	197	258	88	170	41	18	23	3	-	3
85-89	176	53	123	156	46	110	38	12	26	2	1	1
90+	114	34	80	105	33	72	19	6	13	1	1	1
Not Stated	-	-	-	-	-	-	9	1	8	-	-	-
All Ages	2,052	873	1,179	1,654	699	955	379	168	211	19	6	13
Median Age At Last Birthday	73	70	74	74	72	76	68	65	69	71	68	72

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.44
Diabetes Mellitus Rates by Age, Race and Sex¹
 Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	22.1	19.3	24.8	20.9	18.0	23.6	30.9	29.1	32.4
Under 1	*	*	*	*	*	*	*	*	*
1 - 14	*	*	*	*	*	*	*	*	*
15 - 24	0.5	*	*	*	*	*	*	*	*
25 - 34	2.1	2.4	1.9	1.3	1.5	1.1	7.6	8.3	7.1
35 - 44	5.7	7.2	4.3	4.9	5.6	4.2	11.8	19.5	5.6
45 - 54	11.9	14.5	9.5	9.8	12.3	7.4	28.4	34.2	23.8
55 - 64	36.9	35.8	37.9	28.9	27.1	30.5	104.8	117.2	94.8
65 - 74	96.4	98.5	94.6	86.1	90.3	82.7	183.9	175.3	190.6
75 - 84	180.4	177.0	182.6	172.0	169.7	173.4	261.4	252.8	267.0
85 and Over	233.8	229.6	235.6	230.9	231.0	230.8	270.8	198.8	308.1
Age-Adjusted Rate ²	14.0	14.5	13.6	12.2	12.7	11.8	29.0	31.0	27.3

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

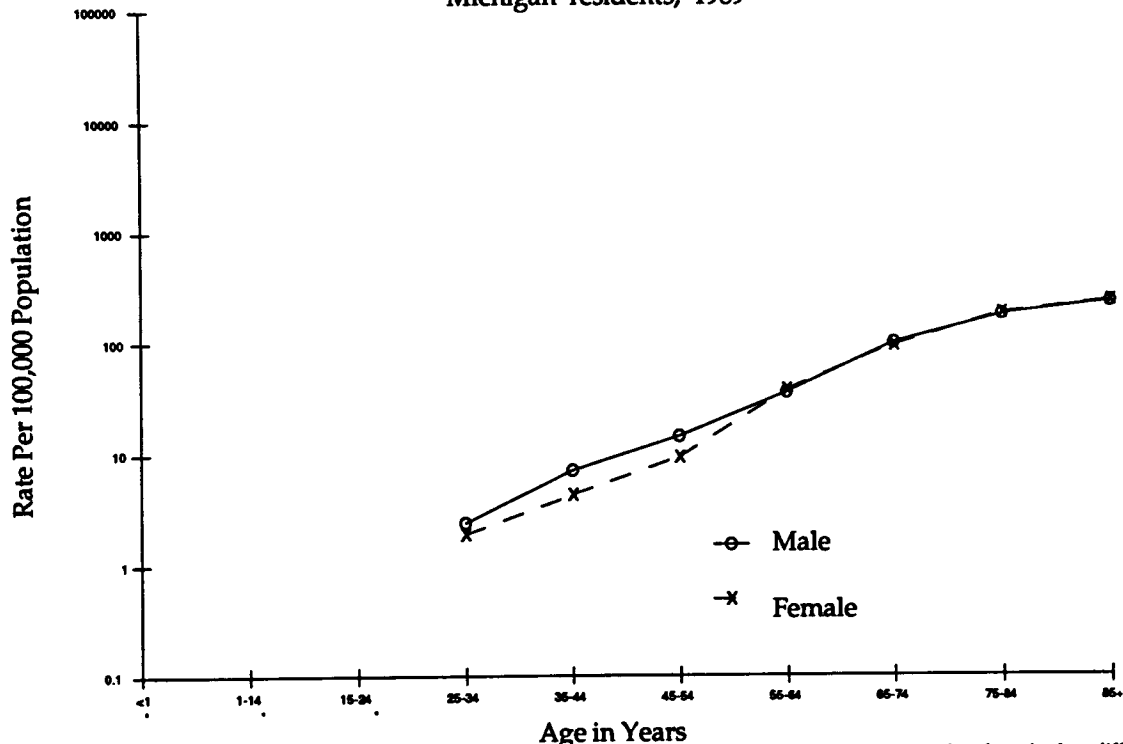
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.33
Age - Specific Diabetes Mellitus Death Rates¹ By Sex
 Michigan residents, 1989



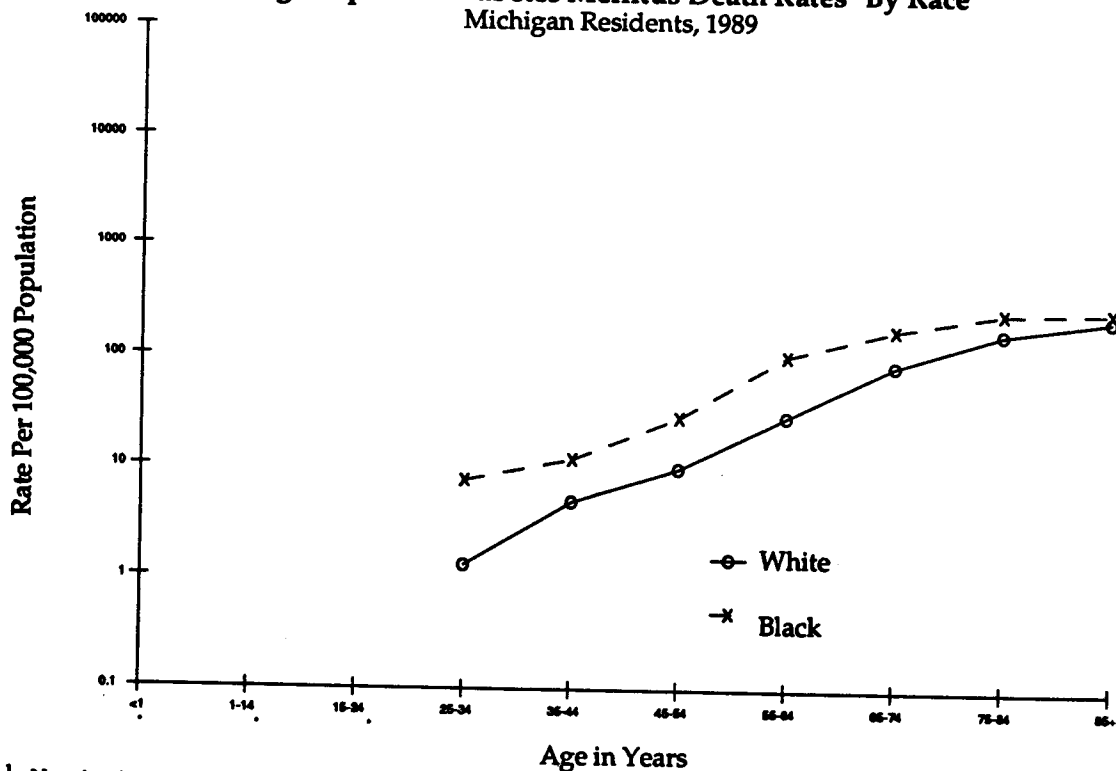
¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

* Rate is considered statistically unreliable.

age-adjusted rate for the black population was 2.4 times that of the white population. The age-adjusted rate for black females exceeded that of their white counterparts by 131.4 percent, while the age-adjusted rate for black males was 144.1 percent greater than that of white males.

Age-specific rates for black persons were higher than those for white persons for all age groups with sufficient number of events to calculate rates (Figure 2.34). The greatest relative differential occurred for ages 25 through 34, where the rate for black persons was 5.8 times the rate for white persons.

Figure 2.34
Age - Specific Diabetes Mellitus Death Rates¹ By Race
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
* Rate is considered statistically unreliable.

Table 2.45
Diabetes Mellitus Deaths by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	356	17.3
American Indian	13	0.6
Arabian Asian	15	0.7
European	1,406	68.5
Hispanic	22	1.1
Other (includes American)	188	9.2
Unknown	52	2.5
Total	2,052	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

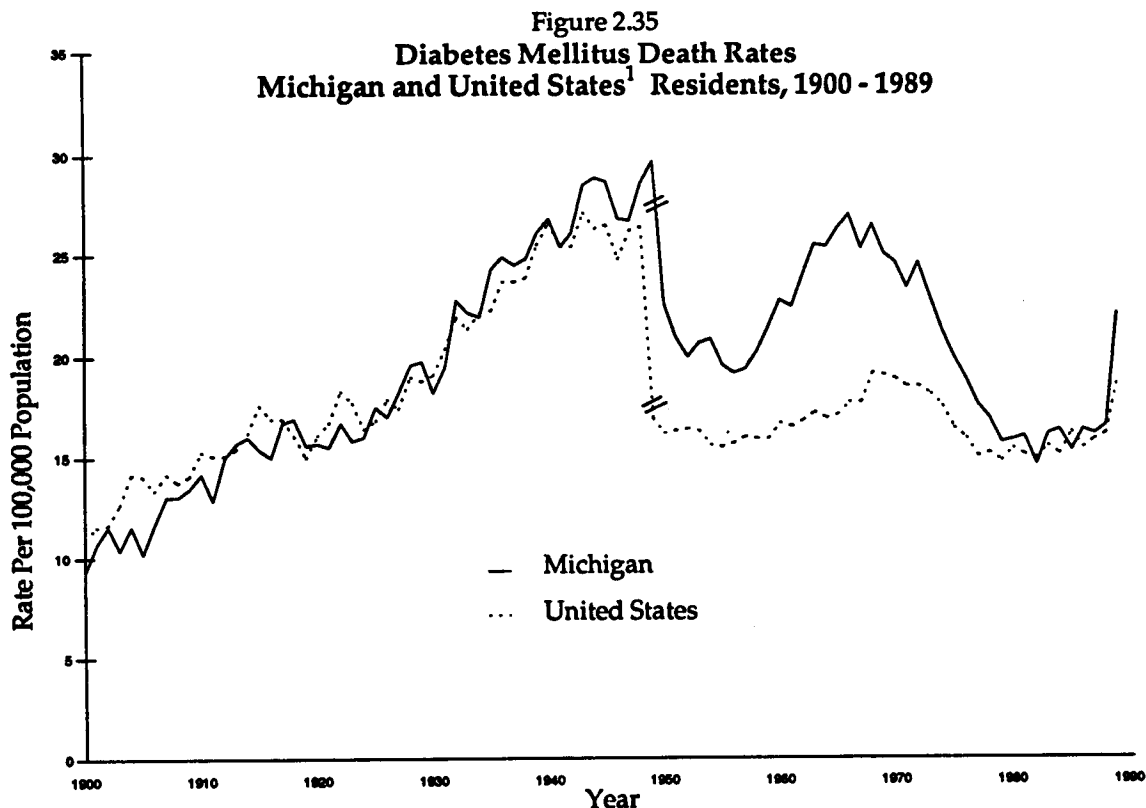
Of the 2,052 resident deaths due to diabetes mellitus in 1989, 1,406 occurred to individuals of European ancestry (Table 2.45). Individuals of African ancestry accounted for another 356 deaths due to this cause of death. There were 22 deaths due to diabetes mellitus among individuals of Hispanic ancestry and 15 deaths for individuals of Arab Asian ancestry. Individuals of American Indian ancestry accounted for another 13 diabetes mellitus deaths.

Diabetes mellitus death rates in Michigan rose steadily from a low of 9.3 in 1900 to a peak of 29.7 in 1949 (Figure 2.35). Adoption of the 6th revision of the International Classification of Diseases in 1950 caused a significant change in Michigan diabetes death rates. From 22.6 in 1950 the rate dipped somewhat then rose to a peak of 27.0 in 1966. Then the rate declined 38.9 percent to 16.5 in 1988. The rate rose in 1989 to 22.1, 33.9 percent higher than the 1988 rate and 18.1 percent less than the 1966 rate.

The national range in diabetes mellitus death rates in the first half of this century was from 11.0 in 1900 to 27.1 in 1943. The rate for the nation since 1949, though more stable than

Michigan's rate, has tended to follow a similar pattern. A peak of 19.2 was reached in 1968. Since that time the rate for the nation has generally declined. In 1989, however, the national provisional rate rose and was only 2.1 percent less than the peak rate of 1968.

The diabetes mellitus death rate for the nation was generally above Michigan's rate for the first 25 or so years in this century. For the 41 years from 1942 through 1982, Michigan's rate was above that of the nation. Through the 1960's and early 1970's the differential between the rates for Michigan and the United States was quite large. In 1982 and again in 1985 the Michigan rates were below the United States rates. In 1989



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² The comparability of diabetes mellitus death rates from the 5th revision of the ICDA coding procedures with those of the 6th revision is considered weak. The comparability ratio is estimated to be .55. The 6th revision was adopted in 1949 for national cause-of-death statistics and in 1950 for Michigan statistics. The comparability of diabetes mellitus death rates through the 6th, 7th, 8th and 9th revisions (1949 to date nationally and 1950 to date in Michigan) is high. General comparison before and after these dates of adoption can be made but detailed study requires special consideration. See Technical Notes.

Michigan's rate was 17.6 percent above the provisional rate for the United States.

Age-adjusted death rates for diabetes mellitus for the years 1970-1989 are presented in Table 2.46. These rates have generally declined both in Michigan and the United States for all population groups. In both Michigan and the nation, however, the 1989 age-adjusted rates were at their highest level since 1975.

The 1989 age-adjusted rate for other than white males in Michigan was at its highest level in the twenty year period from 1970 through 1989. The age-adjusted rate for other than white females was at its highest level since 1973. The age-adjusted rate for white persons in 1989 was at its highest level since 1976. Michigan's rates for other than white persons were higher than comparable rates for the nation in 1970, and were lower than those for the nation for each year from 1979 to 1988 except 1984 and 1988. Age-adjusted rates for

white persons in Michigan were higher than those for the nation throughout the period.

In 1989 76.5 percent of all diabetes mellitus deaths were without mention of complication. Diabetes with peripheral circulatory disorders resulted in an additional 146 deaths, while diabetes with renal manifestations caused 129 deaths. There were 141 deaths in 1989 from diabetes with ketoacidosis or coma, which were deaths where a diabetic crisis was involved (Table 2.47).

At birth, the probability of eventual death due to diabetes mellitus is 0.017 for males and 0.025 for females (Figure 2.36). The probability of death from diabetes mellitus for females is relatively stable from birth to age 69 and declines after that age. In fact, females are less likely to eventually die from this cause at age 70 and over than when they were born. Probabilities for males are consistently less than those for females, but decline less, relatively, in the ages above 69.

Table 2.46
Age - Adjusted Diabetes Mellitus Death Rates¹ by Race and Sex
Michigan² and United States, 1970 - 1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	20.2	20.8	19.8	18.8	19.9	17.7	34.3	29.1	39.4
	1971	18.9	17.4	20.1	17.5	16.6	18.1	31.2	23.8	37.7
	1972	19.6	18.7	20.2	18.1	17.7	18.4	32.0	27.5	36.2
	1973	18.0	17.4	18.2	16.7	16.4	16.8	28.3	25.5	30.6
	1974	16.2	16.0	16.3	15.7	15.8	15.5	20.2	17.5	22.5
	1975	14.9	14.8	14.9	14.2	14.2	14.0	21.1	19.8	22.3
	1976	13.8	13.7	13.8	12.7	12.6	12.7	22.7	22.5	22.9
	1977	12.9	13.3	12.5	12.1	12.6	11.6	19.8	19.3	20.3
	1978	12.1	12.3	11.8	11.1	11.7	10.4	20.6	16.7	23.5
	1979	11.2	11.1	11.2	10.7	11.2	10.3	14.7	10.5	18.2
	1980	11.2	11.0	11.3	10.5	10.6	10.4	16.8	14.5	18.5
	1981	10.7	11.5	10.3	10.1	11.0	9.5	15.7	15.3	16.2
	1982	9.6	10.0	9.3	9.1	9.7	8.6	13.8	12.6	14.9
	1983	10.7	10.6	10.9	10.2	10.0	10.3	15.4	14.8	15.6
	1984	10.8	11.2	10.5	9.9	10.7	9.2	17.7	15.1	19.6
	1985	10.0	10.5	9.5	9.0	9.8	8.4	16.8	15.8	17.7
	1986	10.8	11.2	10.4	10.0	10.4	9.5	17.1	17.2	17.0
	1987	10.2	10.6	9.8	9.3	9.7	8.8	17.6	17.8	17.4
	1988	10.5	11.1	9.9	9.4	10.2	8.7	18.9	18.2	19.3
1989	14.0	14.5	13.6	12.2	12.7	11.8	28.3	29.6	27.1	
U.S.	1970	14.1	13.5	14.4	12.9	12.7	12.8	25.2	20.4	29.3
	1971	13.7	13.2	14.0	12.3	12.4	12.2	25.6	20.3	30.0
	1972	13.5	13.1	13.7	12.2	12.2	12.0	25.9	21.1	29.7
	1973	13.0	12.8	13.1	11.7	11.9	11.5	25.0	21.0	28.2
	1974	12.4	12.1	12.6	11.2	11.4	11.0	23.1	18.7	26.6
	1975	11.4	11.3	11.4	10.3	10.6	10.0	21.3	17.8	23.9
	1976	10.9	10.8	10.9	9.8	10.0	9.5	20.5	17.4	22.9
	1977	10.2	10.3	10.1	9.2	9.7	8.8	19.0	16.2	21.2
	1978	10.2	10.3	10.0	9.2	9.7	8.8	18.5	16.2	20.2
	1979	9.8	10.0	9.5	8.8	9.3	8.3	18.1	16.1	19.5
	1980	10.1	10.2	10.0	9.1	9.5	8.7	18.8	16.4	20.6
	1981	9.8	10.0	9.6	8.8	9.3	8.4	17.9	15.6	19.5
	1982	9.6	9.8	9.3	8.7	9.2	8.3	16.7	14.7	18.1
	1983	9.9	9.9	9.8	8.9	9.2	8.6	17.8	16.0	19.0
	1984	9.5	9.8	9.2	8.5	9.0	8.0	17.4	16.0	18.4
	1985	9.6	9.9	9.4	8.6	9.2	8.1	17.7	16.1	18.9
	1986	9.6	9.9	9.3	8.5	9.1	8.1	17.8	16.1	19.0
	1987	9.8	10.3	9.3	8.7	9.5	8.1	17.9	16.4	18.9
	1988	10.1	10.5	9.8	9.0	9.6	8.4	18.7	17.5	19.5
1989 ³	11.3	—	—	—	—	—	—	—	—	

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

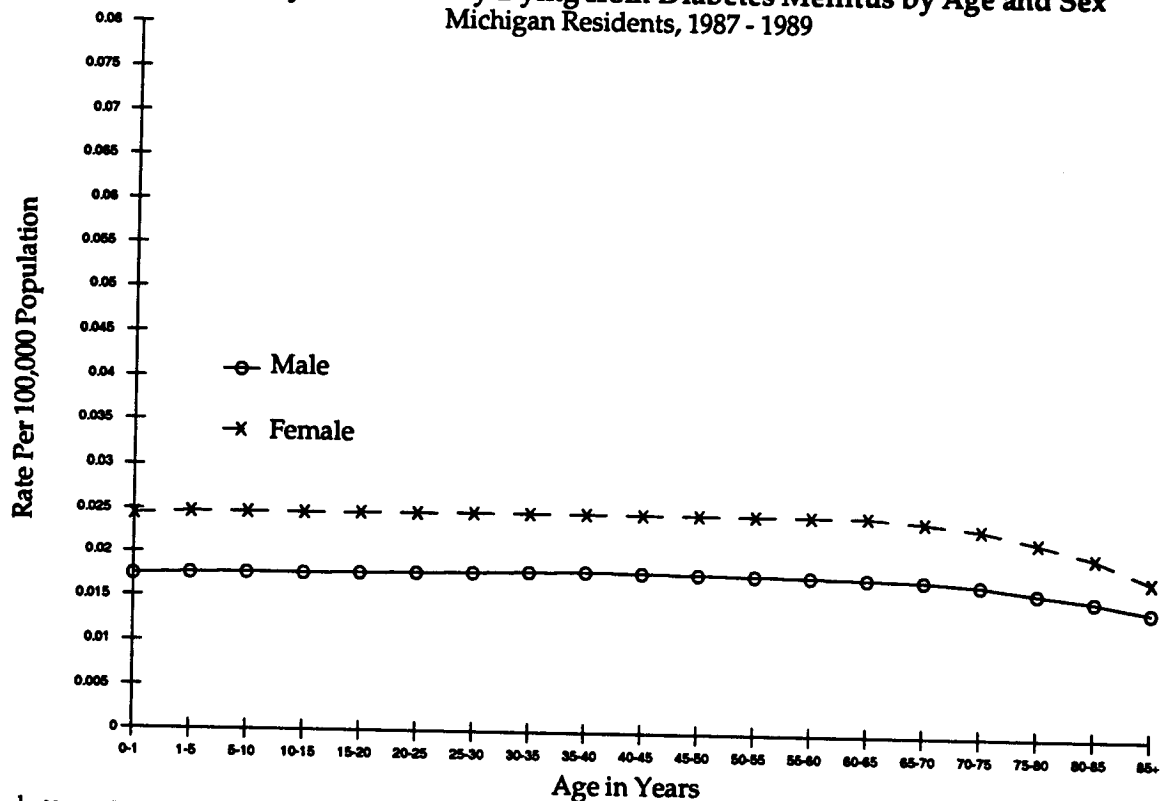
Table 2.47
Deaths Due to Diabetes Mellitus by Detailed Cause
Michigan Residents, 1989

ICD List ¹ Number	Cause of Death	Number of Deaths	Percent
250.0	Diabetes Mellitus Without Mention of Complications	1,570	76.5
250.6	Diabetes with Peripheral Circulatory Disorders	146	7.1
250.3	Diabetes with Renal Manifestations	129	6.3
250.1	Diabetes with Ketoacidosis	78	3.8
250.2	Diabetes with Coma	63	3.1
250.7	Diabetes with Other Specified Manifestations	45	2.2
250.5	Diabetes with Neurological Manifestations	14	0.7
250.4	Diabetes with Ophthalmic Manifestations	5	0.2
250.9	Diabetes with Unspecified Complications	2	0.1
Total		2,052	100.0

¹ Detailed list of the 9th Revision of the *International Classification of Diseases*, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.36
Probability of Eventually Dying from Diabetes Mellitus by Age and Sex
Michigan Residents, 1987 - 1989



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

CHRONIC LIVER DISEASE AND CIRRHOSIS

The 8th leading cause of Michigan resident deaths in 1989 was chronic liver disease and cirrhosis. This category was termed cirrhosis of the liver prior to 1979. There were 1,170 deaths attributed to this category in 1989, of which 66.8 percent were to males.

The median age for deaths due to chronic liver disease and cirrhosis (60 years) was 13 years below that for deaths from all causes (Table 2.48). For deaths from this cause in 1989, the median age was 58 years for males and 63 years for females. The median ages at death for white males and females were 62 and 65 years, respectively. The median ages at death were 46 years for black males and 53 years for black females.

Death rates for chronic liver disease and cirrhosis by age, race, and sex are presented in Table 2.49. In 1989 the crude rate for males was 2.1 times the rate for females while the age-adjusted rate for males was 2.5 times that for females. Age-specific rates for males were higher than those for females for all ages under 85 years with sufficient data to calculate rates (Figure 2.37). The rate for females over 84 years of age was 13.0 percent higher than for males in the same age group. The highest rates for males occurred in the age group from 65 to 74 years.

The crude mortality rate for deaths due to chronic liver disease and cirrhosis for black persons was 2.3 times the rate for white

Table 2.48
Deaths Due to Chronic Liver Disease and Cirrhosis by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	1	1	-	-	-	-	1	1	-	-	-	-
1-4	-	-	-	-	-	-	-	-	-	-	-	-
5-9	-	-	-	-	-	-	-	-	-	-	-	-
10-14	-	-	-	-	-	-	-	-	-	-	-	-
15-19	1	-	1	-	-	-	1	-	1	-	-	-
20-24	1	-	1	1	-	1	-	-	-	-	-	-
25-29	11	9	2	5	4	1	6	5	1	-	-	-
30-34	39	31	8	17	13	4	22	18	4	-	-	-
35-39	94	70	24	50	35	15	43	35	8	1	-	1
40-44	111	81	30	53	37	16	56	43	13	2	1	1
45-49	97	70	26	52	36	16	43	34	9	1	-	1
50-54	96	66	30	64	47	17	32	19	13	-	-	-
55-59	132	92	40	104	71	33	27	20	7	1	1	-
60-64	156	112	44	126	90	36	29	21	8	1	1	-
65-69	134	88	46	113	74	39	20	13	7	1	1	-
70-74	142	84	58	126	77	49	16	7	9	-	-	-
75-79	83	43	40	76	42	34	7	1	6	-	-	-
80-84	47	27	20	44	26	18	3	1	2	-	-	-
85-89	20	7	12	19	6	12	1	1	-	-	-	-
90+	5	-	5	5	-	5	-	-	-	-	-	-
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
All Ages	1,170	781	387	855	558	296	307	219	88	7	4	3
Median Age At Last Birthday	60	58	63	63	62	65	47	46	53	49	61	44

¹Deaths with race and/or sex not stated are included only in the total column.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.49
Death Rates for Deaths Due to Chronic Liver Disease And Cirrhosis by Age, Race and Sex¹
 Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	12.6	17.3	8.2	10.8	14.4	7.4	25.0	37.9	13.5
Under 1	*	*	*	*	*	*	*	*	*
1 - 14	*	*	*	*	*	*	*	*	*
15 - 24	*	*	*	*	*	*	*	*	*
25 - 34	3.2	5.2	1.3	1.7	2.6	0.8	13.3	23.8	4.4
35 - 44	15.4	23.1	8.0	9.0	12.6	5.4	61.5	108.9	23.5
45 - 54	20.0	29.0	11.5	13.8	20.0	7.9	71.1	113.2	37.5
55 - 64	35.3	52.6	19.7	31.8	46.4	18.3	65.2	106.8	31.6
65 - 74	43.4	61.0	29.4	41.9	59.5	27.8	58.1	74.6	45.5
75 - 84	38.2	53.6	28.6	38.9	57.7	27.3	33.1	*	43.6
85 and Over	20.2	18.5	20.9	21.2	17.5	22.8	*	*	*
Age-Adjusted Rate ²	10.7	15.7	6.3	8.5	12.2	5.2	27.9	45.0	14.1

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

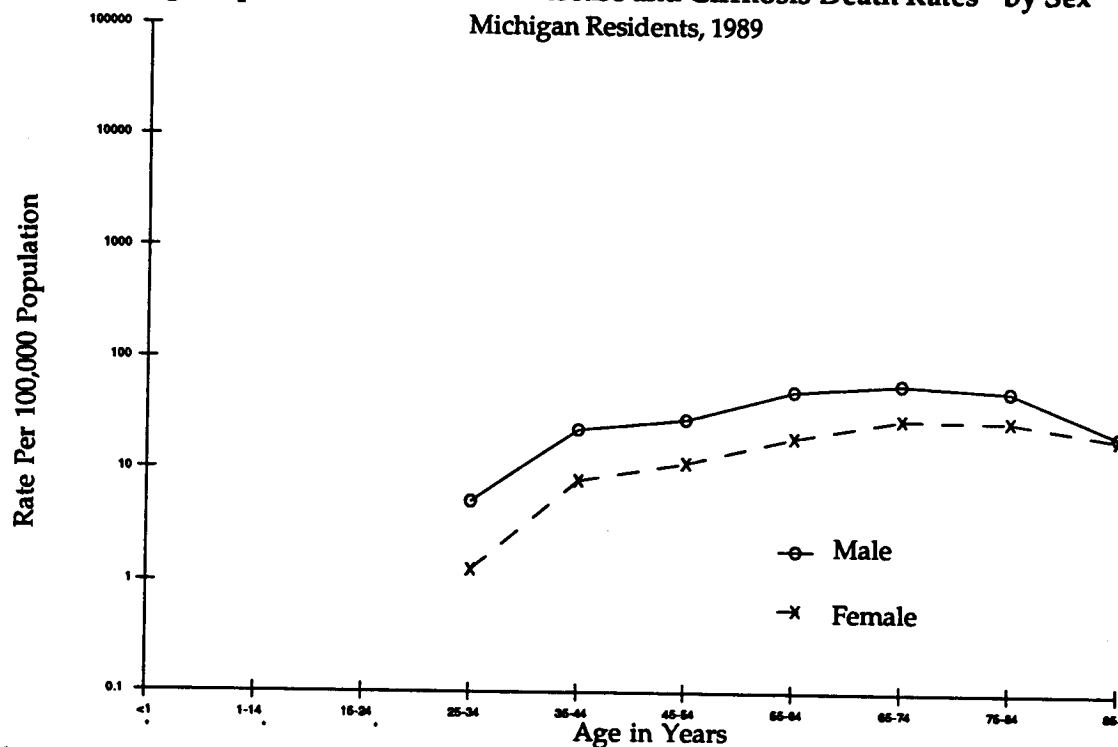
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.37
Age - Specific Chronic Liver Disease and Cirrhosis Death Rates¹ by Sex
 Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

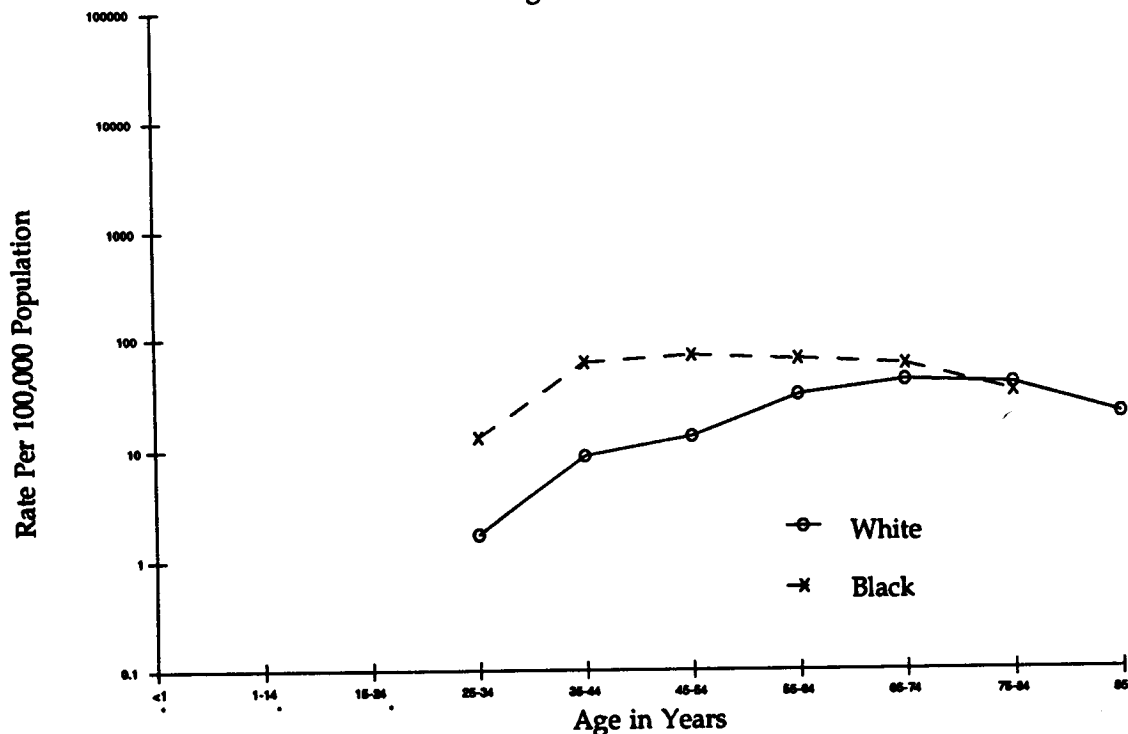
* Rate is considered statistically unreliable.

persons. The age-adjusted rate for black persons was 3.3 times the rate for white persons. The differential can be traced mainly to the rates for ages 25 through 54. The highest age-specific rate for white persons was 41.9 deaths per 100,000 population in the age group 65-74 years. For black persons the peak

rate (71.1) was observed for the age group 45-54 years (Figure 2.38).

Numbers of deaths due to chronic liver disease and cirrhosis are presented by ancestry in Table 2.50. The largest number of deaths in this category, 704, occurred to individuals of European ancestry. There were

Figure 2.38
Age - Specific Chronic Liver Disease and Cirrhosis Death Rates¹ by Race
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
* Rate is considered statistically unreliable.

Table 2.50
Chronic Liver Disease and Cirrhosis Deaths
by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	284	24.3
American Indian	19	1.6
Arabian Asian	7	0.6
European	704	60.2
Hispanic	18	1.5
Other (includes American)	102	8.7
Unknown	36	3.1
Total	1,170	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

284 chronic liver disease and cirrhosis deaths to individuals of African ancestry, 19 to individuals of American Indian ancestry, 18 to individuals of Hispanic ancestry and 7 to individuals of Arab Asian ancestry.

Cirrhosis of the liver was the cause of death for 7.9 of every 100,000 Michigan residents in 1900. Death rates due to this cause rose to a peak of 13.1 in 1916, after which the relative

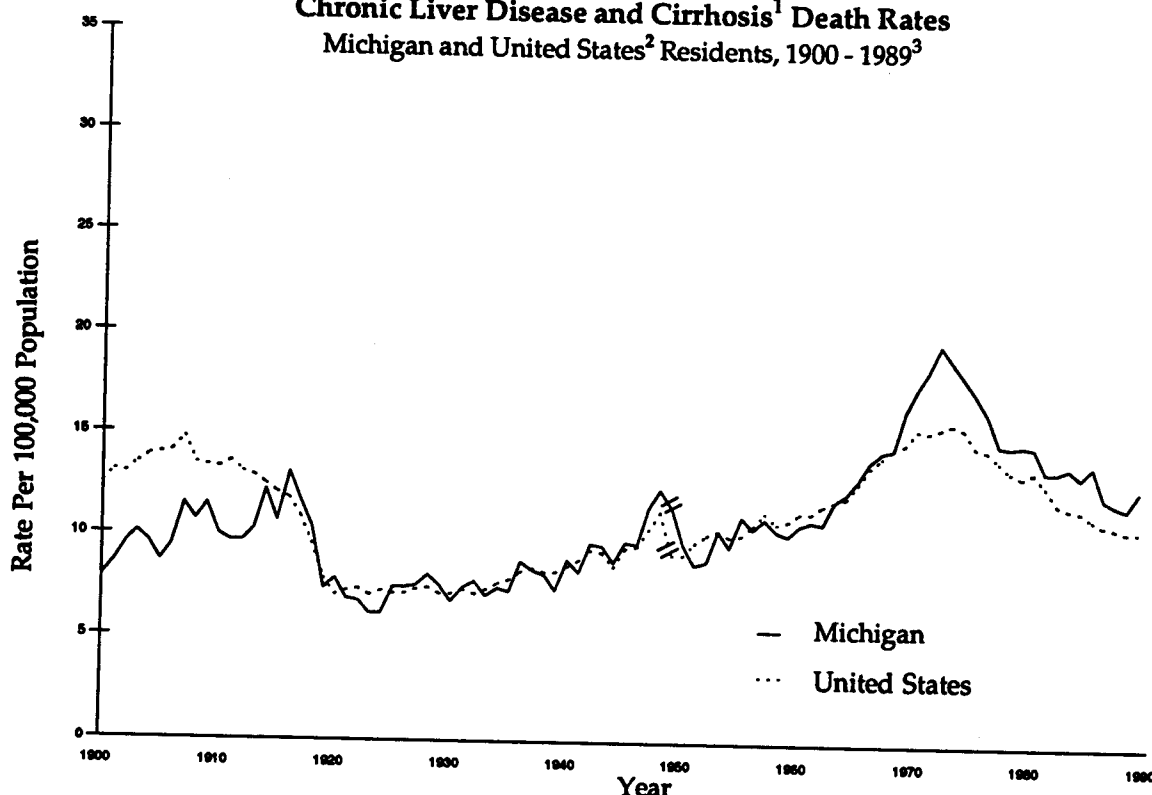
frequency of cirrhosis deaths fell sharply, dropping to 7.4 in 1919. The Michigan rates held stable from this point until 1936 when they began increasing slowly. A peak of 12.4 was reached by 1948.

The statistics for Michigan shown in Figure 2.39 after 1949 are not comparable with preceding years due to a revision of the underlying cause of death determination. By

isolating the period 1950-1989, this problem can be ignored. Michigan's mortality rate for this disease doubled between 1950 and 1972, when the highest rate of the century was recorded (19.7). The rate of 12.6 in 1989 was 36.0 percent less than the rate of 1972.

The cirrhosis of the liver mortality rate for the United States was well above Michigan's rate early in this century. The highest rate for

Figure 2.39
Chronic Liver Disease and Cirrhosis¹ Death Rates
Michigan and United States² Residents, 1900 - 1989³



¹ Prior to 1979 termed Cirrhosis of Liver.

² National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

³ The comparability of cirrhosis of the liver death rates from the 5th revision of the ICDA coding procedures with those of the 6th revision is considered weak. The comparability ratio is estimated to be .80. The 6th revision was adopted in 1949 for national cause-of-death statistics and in 1950 for Michigan statistics. The comparability of cirrhosis of the liver death rates through the 6th, 7th, 8th and 9th revisions (1949 to date nationally and 1950 to date in Michigan) is high. General comparison before and after these dates of adoption can be made but detailed study requires special consideration. See Technical Notes.

the nation during the first half of the century occurred in 1907 (14.8). The rates for Michigan and the nation were similar from about 1916 through 1968. Between 1969 and 1972, rates for Michigan rose above those for the nation. The sharp drop in Michigan's rate since 1972 has brought the statistic for the state closer to the national figure. In 1989 the chronic liver disease and cirrhosis death rate of 12.6 for Michigan was 18.9 percent above the provisional rate of 10.6 for the nation.

Age-adjusted death rates by sex and race for chronic liver disease and cirrhosis for the years 1970-1989 are displayed in Table 2.51 (see Technical Notes). These rates generally peaked about 1972 in Michigan and have tended to decline since then. For the United States the increases observed in the early part of the 1970's were less pronounced, as were the declines after that time.

The age-adjusted rates in Michigan for other than white males have been higher than for all other race and sex groups, including the rates for other than white males observed nationally. The rates for other than white females in Michigan have also been higher than the comparable rates for the nation.

Age-adjusted death rates for chronic liver disease and cirrhosis for white males in Michigan were higher than rates for white males nationally. Through 1985 rates for white females in Michigan have been general-

ly higher than for their counterparts in the nation. In recent years the rates for the two groups have been similar. In 1989 the age-adjusted rate for the total Michigan population was 23.0 percent above the provisional rate for the United States.

Cirrhosis of the liver without mention of alcohol was the most frequently reported cause of deaths due to chronic liver disease and cirrhosis in 1989, resulting in 509 deaths (Table 2.52). The second largest category was alcoholic cirrhosis of the liver with 332 deaths. Including deaths due to alcoholic cirrhosis of the liver, alcoholic fatty liver, acute alcoholic hepatitis, and unspecified alcoholic liver damage, there were 606 deaths with mention of alcohol attributed to the category of chronic liver disease and cirrhosis.

The probability of eventually dying from chronic liver disease and cirrhosis, based upon Michigan mortality data from the years 1987-1989, is displayed in Figure 2.40 by age and sex. The risk for males of dying from a disease in this category is roughly double that for females. At birth, males have a probability of 0.015 of eventually dying from chronic liver disease and cirrhosis. For females the probability is 0.008. These probabilities remain fairly constant for both sexes through age 34, whereupon the eventuality of death due to these diseases diminishes with advancing age. After age 85 the risk is 0.002 for males and 0.001 for females.

Table 2.51
 Age - Adjusted Death Rates¹ for Deaths Due to Chronic Liver Disease
 and Cirrhosis by Race and Sex
 Michigan² and United States Residents, 1970-1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	17.7	24.9	11.2	15.6	22.0	9.7	34.8	48.3	22.5
	1971	18.7	25.6	12.3	16.2	22.2	10.7	37.7	53.3	23.7
	1972	19.8	27.8	12.5	17.0	24.4	10.3	41.2	54.9	28.8
	1973	18.8	26.7	11.7	16.3	23.2	10.1	37.9	54.2	23.4
	1974	17.9	25.8	10.8	14.7	21.5	8.7	41.8	59.7	25.9
	1975	17.1	23.9	11.1	14.4	20.2	9.2	37.5	52.1	24.6
	1976	15.9	23.0	9.6	13.6	19.8	8.0	32.9	47.2	20.4
	1977	14.5	20.6	9.1	12.1	17.6	7.2	31.7	42.9	22.0
	1978	14.2	19.6	9.3	12.0	16.9	7.8	29.6	40.9	20.0
	1979	14.2	21.1	8.2	11.4	17.1	6.4	34.1	50.4	20.1
	1980	14.1	19.7	9.1	11.6	16.5	7.3	31.1	43.7	20.5
	1981	12.7	17.9	8.2	10.9	15.6	6.7	25.0	34.1	17.5
	1982	12.4	17.5	8.0	10.6	15.2	6.6	24.9	34.2	17.2
	1983	12.5	18.6	7.2	10.6	15.6	6.1	25.0	39.5	13.3
	1984	11.8	16.6	7.7	9.9	14.0	6.3	25.1	35.8	16.2
	1985	12.3	17.5	7.6	9.9	14.0	6.3	28.4	43.3	16.1
	1986	10.7	15.8	6.2	8.9	12.8	5.4	22.7	37.0	11.0
	1987	10.4	15.0	6.3	8.3	12.1	4.9	24.5	36.6	14.8
	1988	10.2	14.7	6.1	8.1	11.8	4.8	24.1	36.1	14.3
1989	10.7	15.7	6.3	8.5	12.2	5.2	25.8	41.1	13.3	
U.S.	1970	14.7	20.2	9.8	13.4	18.8	8.7	23.8	31.3	17.4
	1971	14.6	20.2	9.7	13.5	18.9	8.7	23.4	31.0	16.9
	1972	14.9	20.8	9.6	13.5	19.0	8.5	25.3	35.0	17.1
	1973	15.0	20.8	9.8	13.6	19.3	8.7	25.1	33.7	17.9
	1974	14.7	20.6	9.6	13.4	19.0	8.5	24.8	33.9	17.2
	1975	13.7	19.4	8.8	12.5	17.8	7.9	22.9	32.0	15.3
	1976	13.5	19.0	8.6	12.2	17.4	7.7	22.9	32.1	15.1
	1977	13.0	18.3	8.3	11.7	16.6	7.4	22.2	31.2	14.7
	1978	12.4	17.5	8.0	11.2	16.0	7.1	20.7	29.0	13.9
	1979	12.0	17.0	7.7	11.0	15.6	7.0	19.7	28.2	12.8
	1980	12.2	17.1	7.9	11.0	15.7	7.0	20.0	28.1	13.5
	1981	11.4	16.0	7.4	10.5	14.8	6.7	17.6	24.7	11.9
	1982	10.5	14.9	6.7	9.8	14.1	6.1	14.9	20.9	10.1
	1983	10.2	14.3	6.6	9.5	13.4	6.0	14.7	20.5	10.0
	1984	10.0	14.1	6.4	9.3	13.2	5.9	14.3	20.2	9.5
	1985	9.6	13.6	6.1	8.9	12.6	5.6	14.4	20.7	9.3
	1986	9.2	13.0	5.9	8.6	12.2	5.4	12.9	18.4	8.5
	1987	9.1	13.0	5.6	8.4	12.1	5.1	13.2	19.1	8.3
	1988	9.0	12.9	5.6	8.4	12.1	5.0	12.9	18.2	8.6
1989 ³	8.7	—	—	—	—	—	—	—	—	

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

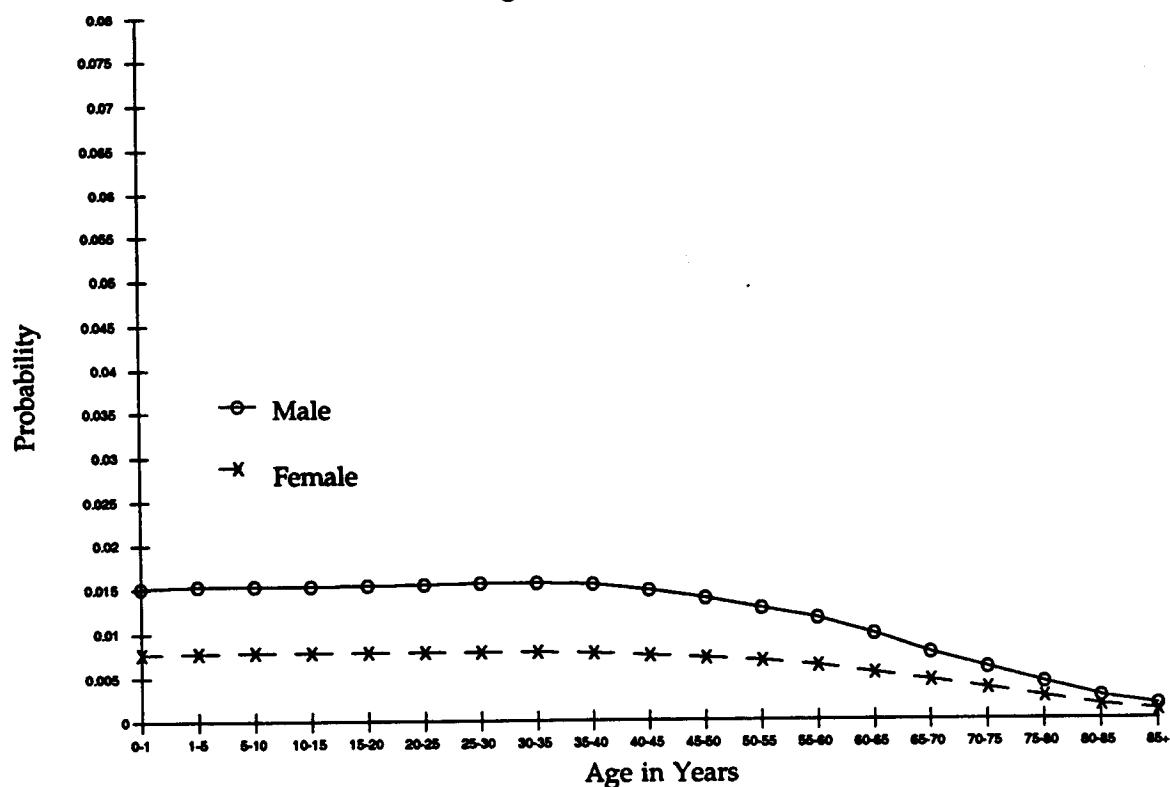
Table 2.52
Deaths Due to Chronic Liver Disease and Cirrhosis by Detailed Cause
Michigan Residents, 1989

ICD List ¹ Number	Cause of Death	Number of Deaths	Percent
571.5	Cirrhosis of Liver Without Mention of Alcohol	509	43.5
571.2	Alcoholic Cirrhosis of Liver	332	28.4
571.3	Alcoholic Liver Damage, Unspecified	201	7.2
571.1	Acute Alcoholic Hepatitis	39	3.3
571.0	Alcoholic Fatty Liver	34	2.9
571.4	Chronic Hepatitis	23	2.0
571.6	Biliary Cirrhosis	18	1.5
571.8	Other Chronic Nonalcoholic Liver Disease	9	0.8
571.9	Unspecified Chronic Liver Disease Without Mention of Alcohol	5	0.4
Total		1,170	100.0

¹ Detailed List of the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.40
Probability of Eventually Dying From Chronic Liver Disease and Cirrhosis by Age and Sex
Michigan Residents, 1987 - 1989



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

HOMICIDE

Homicide, the 9th leading cause of death in 1989, accounted for 1,064 deaths, or 1 out of every 74 deaths. Of deaths resulting from homicide, 78.5 percent were among males. Of all homicide deaths, 73.8 percent were of black persons. The age-adjusted homicide rates were 22.4 and 12.6 times higher for Michigan black males and females than the rates for Michigan white males and females, respectively. The rates for Michigan black males and females are about twice as high as the national rates for black males and females.

More than seventy-eight percent of all homicide deaths occurred at or below the age of 39, with 73.8 percent occurring between the ages of 15 and 39. The median age at death was 29 years for males and 30 years for females. The median age at death for white males, 31 years, was 3 years above that for

their black counterparts. The median age at death for white females was 32 years, 2 years above that for black females (Table 2.53).

The crude homicide death rate in 1989 was 11.5 per 100,000 population. The crude rate for males (18.6) was 3.9 times that for females (4.8). Age-specific rates for males were higher than female rates in all age groups with sufficient data to allow calculation of rates (Table 2.54 and Figure 2.41). Homicide rates for both males and females were highest for individuals 15 to 44 years of age. The greatest relative differential by sex was for ages 15 to 24 years where the rate for males was 5.2 times the rate for females.

The crude homicide death rate for the black population was 18.9 times higher than that for the white population. The age-adjusted rate

Table 2.53
Deaths Due to Homicide by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	10	4	6	7	3	4	3	1	2	-	-	-
1-4	13	7	6	6	3	3	7	4	3	-	-	-
5-9	11	6	5	4	4	-	6	2	4	1	-	1
10-14	13	10	3	3	1	2	10	9	1	-	-	-
15-19	147	123	24	24	17	7	121	105	16	2	1	1
20-24	170	144	26	26	22	4	143	122	21	1	-	1
25-29	182	145	37	49	39	10	131	104	27	2	2	-
30-34	160	127	32	38	27	11	121	100	21	-	-	-
35-39	126	97	29	34	28	6	92	69	23	-	-	-
40-44	84	64	19	20	13	7	63	51	12	-	-	-
45-49	43	34	9	15	11	4	27	22	5	1	1	-
50-54	28	24	4	12	10	2	16	14	2	-	-	-
55-59	14	7	7	5	2	3	9	5	4	-	-	-
60-64	16	12	4	2	1	1	14	11	3	-	-	-
65-69	16	10	5	9	5	3	6	4	2	1	1	-
70-74	11	10	1	4	3	1	6	6	-	1	-	-
75-79	7	5	2	2	-	2	5	5	-	1	-	-
80-84	6	3	3	3	2	1	3	1	2	-	-	-
85-89	4	3	1	3	2	1	1	1	-	-	-	-
90+	2	-	2	2	-	2	-	-	-	-	-	-
Not Stated	1	-	1	-	-	-	1	-	1	-	-	-
All Ages	1,064	835	226	268	193	74	785	636	149	9	6	3
Median Age At Last Birthday	29	29	30	32	31	32	28	28	30	25	39	18

¹ Deaths with race and/or sex not stated are included only in the total column.

Table 2.54
Homicide Death Rates by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	11.5	18.6	4.8	3.4	5.0	1.8	64.1	110.5	22.9
Under 1	7.0	*	8.6	6.2	*	*	*	*	*
1 - 14	1.9	2.4	1.5	0.8	1.0	0.7	7.4	9.6	5.2
15 - 24	21.6	36.0	6.9	4.1	6.3	1.8	115.9	202.0	32.1
25 - 34	22.1	35.7	8.8	6.6	10.0	3.2	120.4	211.8	42.3
35 - 44	15.8	24.8	7.1	4.7	7.2	2.3	97.0	168.9	39.2
45 - 54	7.4	12.4	2.6	3.2	5.1	1.4	40.7	76.9	11.9
55 - 64	3.7	4.9	2.6	1.0	*	*	26.8	41.7	14.7
65 - 74	4.2	7.4	1.7	2.3	3.5	*	19.4	37.3	*
75 - 84	3.8	6.1	2.4	1.6	*	*	26.5	50.6	*
85 and Over	5.6	*	*	4.4	*	*	*	*	*
Age-Adjusted Rate ²	11.7	18.8	4.8	3.4	5.0	1.8	64.4	112.1	22.7

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

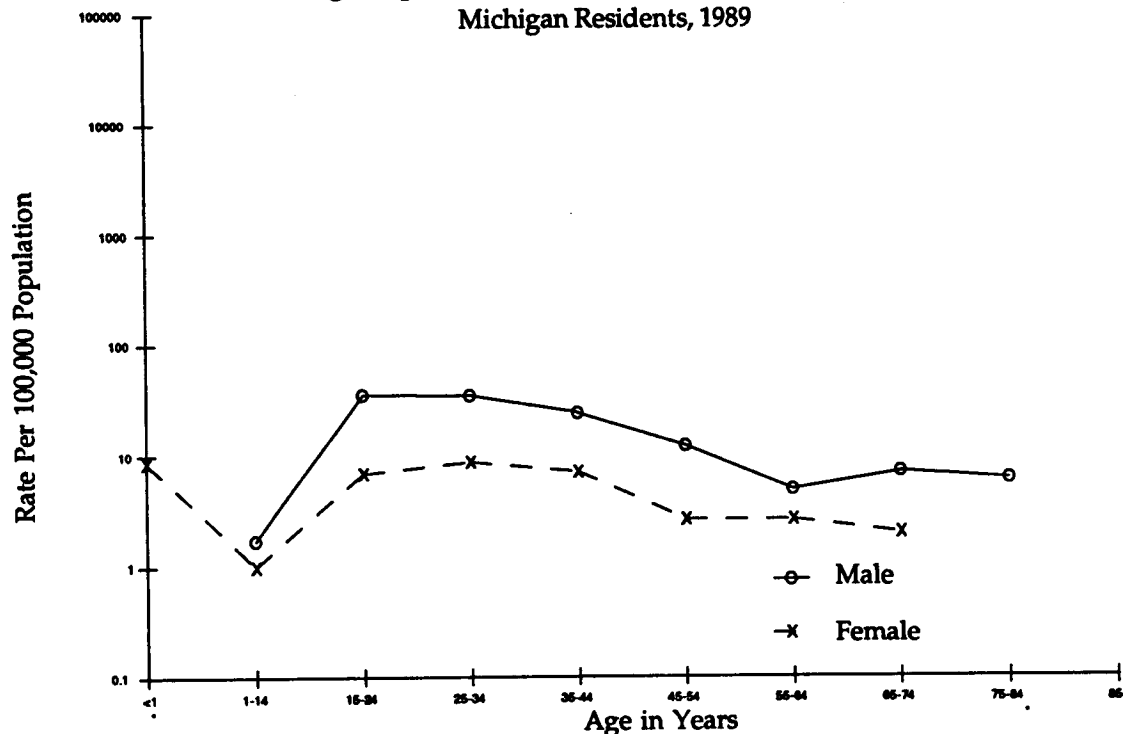
² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.41
Age - Specific Homicide Death Rates¹ by Sex
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.

* Rate is considered statistically unreliable.

for black persons was 18.9 times higher than that for white persons. Age-specific rates by race from Table 2.54 are displayed in Figure 2.42. Age-specific rates for black persons were greater than those for white persons in all age groups with sufficient events to calculate rates.

Of the 1,064 homicide deaths among Michigan residents in 1989, 723 occurred to individuals of African ancestry (Table 2.55). Another 188 homicide deaths were attributed to individuals of European ancestry. There were 28 homicides among individuals of Hispanic ancestry, 12 among individuals of American Indian ancestry and 5 among individuals of Arab Asian ancestry.

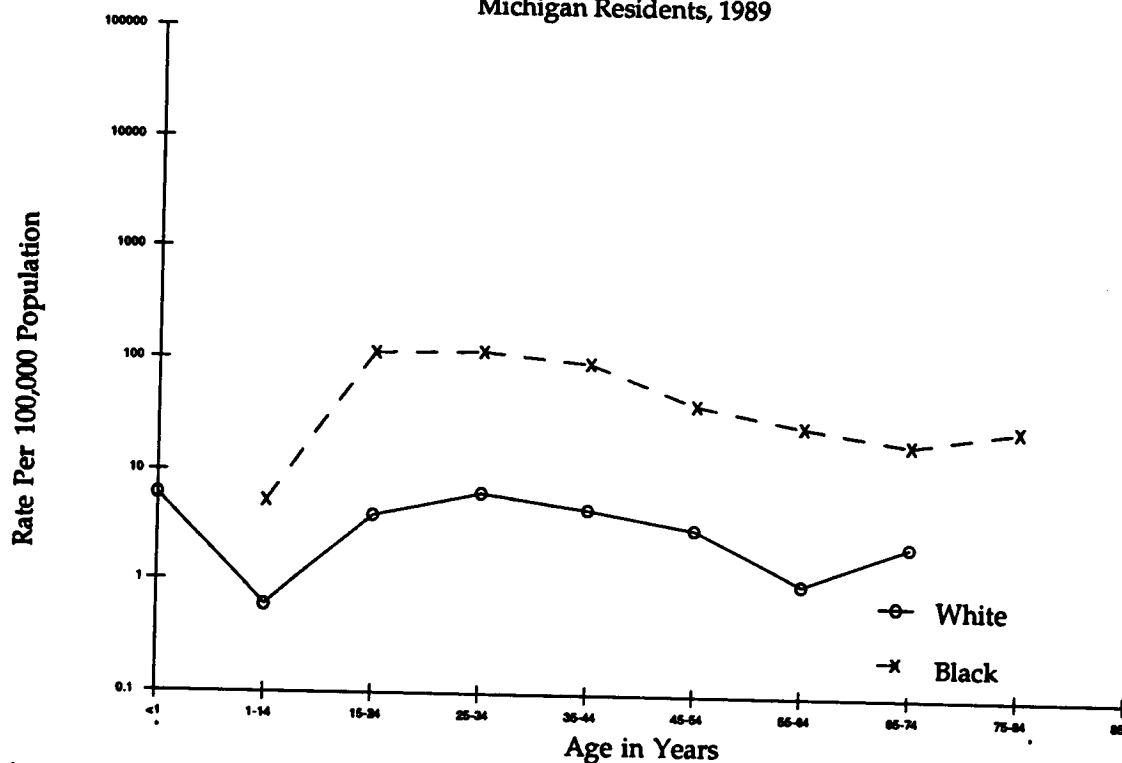
Before 1980, the pattern of crude homicide death rates for Michigan and the United States were similar (Figure 2.43). The Michigan rate

rose from a low of 0.6 in 1900 to a high of 10.7 in 1926. The Michigan rate then decreased from its high to a low of 3.0 in 1940 and remained reasonably stable until 1960 when it began a sharp increase. From a low of 2.8 in 1958, the Michigan rate rose to a century high 13.6 in 1974. From that point the Michigan rate dropped to 9.5 in 1979, a 30.1 percent decrease. Since 1979 the Michigan rate has increased 21.1 percent to 11.5 in 1989.

The United States rates rose from a low of 1.1 in 1903 to a high of 9.8 in 1933. They decreased between 1933 and 1958 to a low of 4.5. The United States rates increased to a high in 1980 of 10.7 and has generally declined to the 1989 provisional rate of 9.3.

Until 1967, the national rate was generally well above the Michigan rate. Since 1967, the Michigan rate has been below the national

Figure 2.42
Age - Specific Homicide Death Rates¹ by Race
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
• Rate is considered statistically unreliable.

Table 2.55
Homicide Deaths by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	723	68.0
American Indian	12	1.1
Arabian Asian	5	0.5
European	188	17.7
Hispanic	28	2.6
Other (includes American)	91	8.6
Unknown	17	1.6
Total	1,064	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

rate only twice. In 1989, the United States provisional homicide rate was 19.1 percent below the Michigan rate.

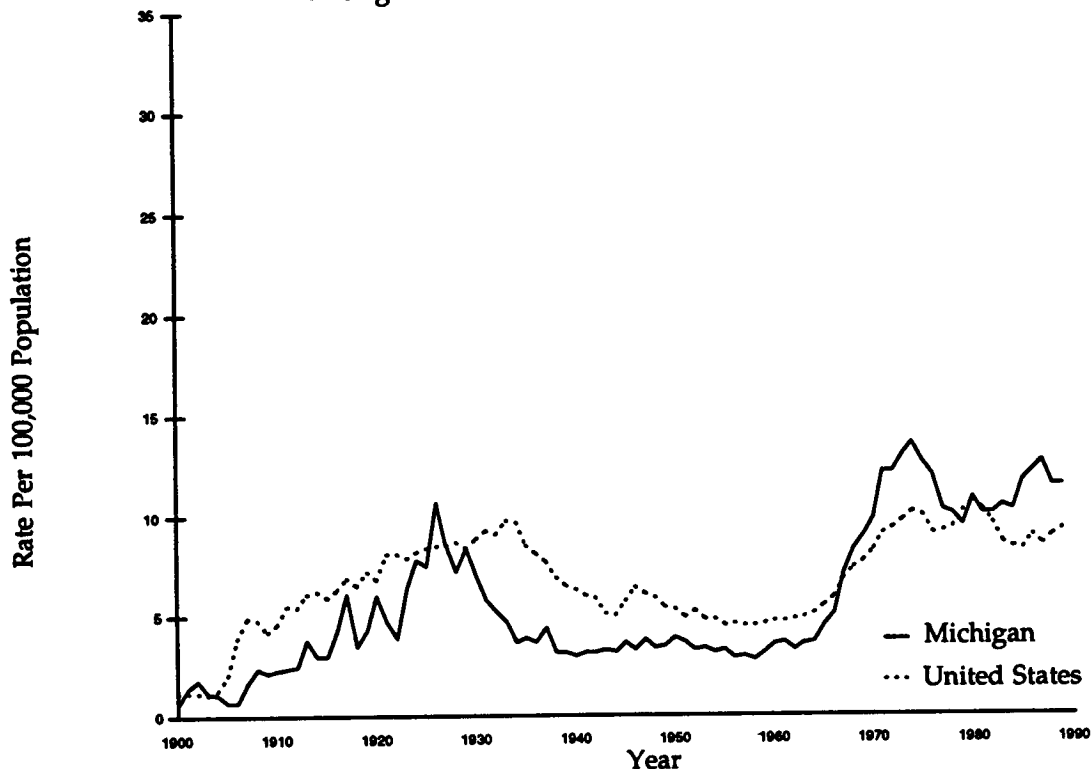
Age-adjusted homicide rates by race and sex for Michigan and the United States are presented in Table 2.56. The rate for white

males in Michigan increased between 1970 and 1974 and then decreased, remaining reasonably stable between 1977 and 1985. The rate has been decreasing since 1985. For white females in Michigan the rates have been fairly stable throughout most of this period. The rate did decrease substantially, however, between 1988 and 1989.

Michigan rates for other than white persons rose in the early 1970's and then decreased in the late 1970's. The rates were stable until 1985 when they began another increase. Rates for other than white persons were consistently higher than rates for white persons throughout this twenty year period.

Age-adjusted homicide rates for the nation presented a somewhat different pattern.

Figure 2.43
Homicide Death Death Rates
Michigan and United States¹ Residents, 1900 - 1989²



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² Suicide death rates since 1900 are suitable for general comparison over time but detailed study (such as time series) requires special consideration. See Technical Notes.

Table 2.56
Age - Adjusted Death Rates¹ For Deaths Due to Homicide by Race and Sex
Michigan² and United States Residents, 1970 - 1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	10.9	18.2	3.9	4.3	6.6	2.2	61.0	110.3	16.7
	1971	13.4	22.4	4.9	4.6	7.1	2.3	78.5	140.8	23.1
	1972	13.3	21.8	5.3	4.9	7.2	2.7	74.5	132.2	22.9
	1973	14.1	23.0	5.5	5.1	7.4	2.9	78.8	141.5	23.1
	1974	14.4	23.5	5.7	5.5	8.5	2.6	78.2	136.4	26.7
	1975	13.4	21.4	5.7	5.4	8.1	2.8	69.0	119.2	24.8
	1976	12.4	20.2	4.9	5.1	7.7	2.5	63.3	111.8	20.9
	1977	10.7	16.8	4.8	4.3	6.0	2.7	53.7	94.4	18.2
	1978	10.3	16.1	4.8	4.3	6.1	2.6	50.0	86.8	18.1
	1979	9.7	15.0	4.5	4.4	6.1	2.7	44.3	78.2	15.2
	1980	11.0	16.9	5.4	4.6	6.4	2.8	51.4	87.9	19.9
	1981	10.5	16.2	5.1	4.2	5.9	2.6	47.3	81.7	18.4
	1982	10.4	16.2	5.0	4.3	5.6	3.0	45.8	81.7	15.6
	1983	10.9	17.5	4.6	4.2	6.1	2.4	48.7	87.1	16.0
	1984	10.4	16.5	4.6	4.1	5.5	2.7	47.8	86.4	14.7
	1985	11.8	18.6	5.3	4.5	6.3	2.8	54.4	95.3	19.0
	1986	12.3	19.8	5.0	4.0	5.7	2.3	60.3	106.7	19.9
	1987	12.8	19.8	5.9	4.2	5.6	2.8	61.0	104.7	22.5
	1988	11.6	18.5	4.8	3.7	5.2	2.2	56.4	99.3	18.7
1989	11.7	18.8	4.8	3.4	5.0	1.8	59.1	102.2	21.1	
U.S.	1970	9.1	14.9	3.7	4.7	7.3	2.2	41.3	72.8	13.7
	1971	10.0	16.3	4.0	5.1	7.9	2.3	46.8	81.6	16.0
	1972	10.3	16.8	4.0	5.2	8.2	2.4	46.6	83.1	14.8
	1973	10.5	16.7	4.5	5.7	8.7	2.8	44.4	77.1	16.0
	1974	10.8	17.3	4.6	6.0	9.3	2.9	44.5	77.9	15.5
	1975	10.5	16.8	4.5	6.1	9.4	2.9	41.1	71.6	14.7
	1976	9.5	15.1	4.1	5.5	8.6	2.7	36.4	63.3	13.2
	1977	9.6	15.1	4.2	5.9	8.8	2.9	34.5	60.1	12.5
	1978	9.6	15.3	4.2	6.0	9.2	2.9	33.4	58.1	12.1
	1979	10.4	16.7	4.3	6.5	10.1	3.0	36.0	62.9	12.8
	1980	10.8	17.4	4.5	6.9	10.9	3.2	35.0	61.3	12.2
	1981	10.4	16.7	4.3	6.6	10.3	3.1	33.3	58.5	11.4
	1982	9.7	15.3	4.2	6.3	9.5	3.1	30.0	52.2	10.5
	1983	8.6	13.6	3.8	5.6	8.4	2.8	26.4	45.2	9.8
	1984	8.4	13.0	3.9	5.5	8.2	2.9	24.9	42.2	9.6
	1985	8.3	12.8	3.9	5.4	8.1	2.9	24.4	41.4	9.3
	1986	9.0	13.9	4.1	5.6	8.4	2.9	27.2	46.1	10.2
	1987	8.6	13.2	4.1	5.3	7.7	2.9	26.4	44.0	10.5
	1988	9.0	13.9	4.2	5.3	7.7	2.8	28.2	47.4	10.8
1989 ³	9.4	—	—	—	—	—	—	—	—	

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Rates for white males and females generally increased after 1970, reaching a peak in 1980. After 1980, rates for white persons of both sexes generally declined. Rates for other than white males and females increased in the early 1970's and then gradually decreased after 1974. Since 1974, the national rate for other than white males has declined 39.2 percent. During the same period the rate for other than white females decreased 30.3 percent. While there was a sharp increase in the rates observed in Michigan after 1984, there was a milder increase nationally.

The age-adjusted death rates in Michigan for the other than white population were considerably higher than those for the nation. Rates in Michigan for the white population were lower than those of the nation. The age-adjusted homicide rate for the total population of Michigan was above the comparable national rate nineteen of the twenty years from 1970 through 1989. In 1988, the latest year national rates are available, the homicide rates for other than white males and females were 2.1 and 1.7 times higher in Michigan than in the nation. By contrast the

rates for white males and females were 32.5 and 21.4 percent lower than the rates for their national counterparts.

The major method of homicide death in Michigan was assault by firearms with 692, or 65.0 percent, of the 1,064 homicide deaths in 1989. Assault by all other means and late effects of injury purposely inflicted by other persons accounted for 198 deaths. There were 170 deaths attributed to assault by cutting and piercing instruments. Other legal intervention and late effects of injury due to legal intervention accounted for four homicides (Table 2.57).

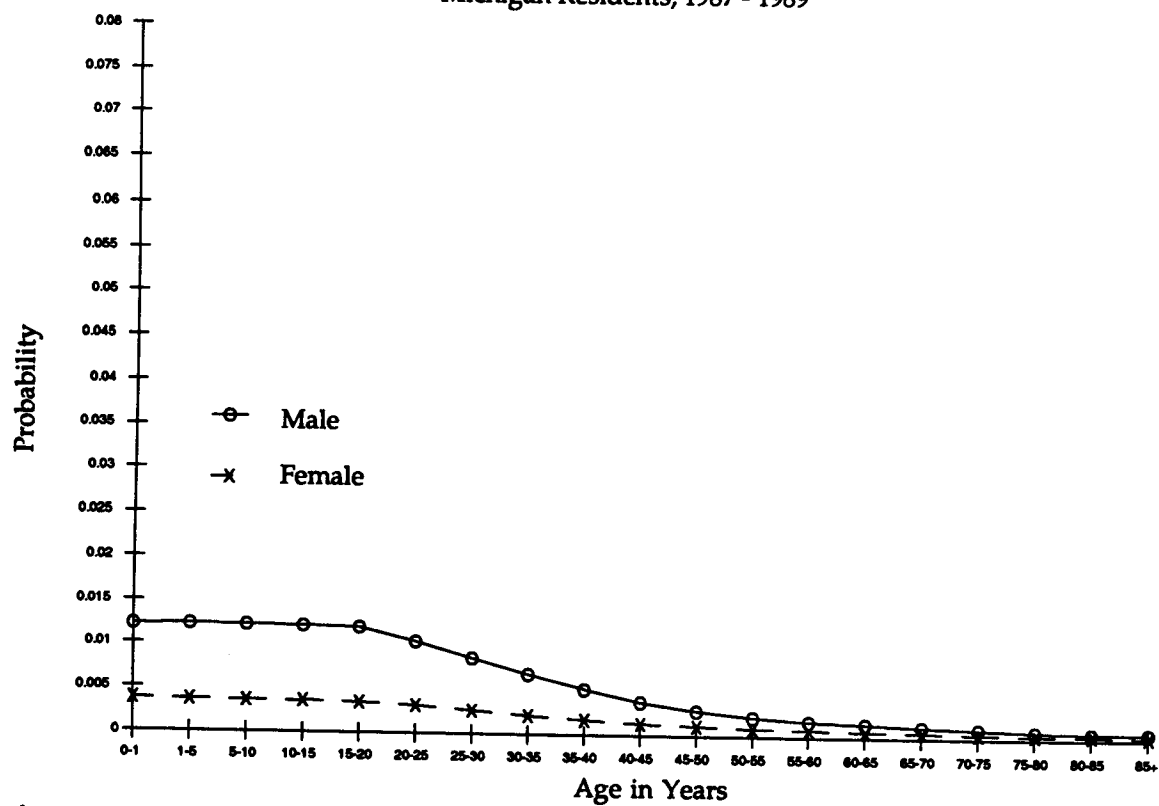
Based on the Michigan 1987 through 1989 mortality experience, the probability of a male eventually dying from homicide is 0.012 at birth. The probability for females is 0.004. The probabilities for females hold relatively constant to age 20 and then decrease more rapidly with advancing age. The probabilities for males hold relatively constant to age 15, dropping rapidly between 15 and 50, and then taper off more slowly with advancing age (Figure 2.44).

Table 2.57
Deaths Due to Homicide by Detailed Cause
Michigan Residents, 1989

282 List ¹ Number	Cause of Death	Number of Deaths	Percent
272	Assault by Other and Unspecified Firearms	691	64.9
274	Assault by all other Means and Late Effects of Injury Purposely Inflicted by other Person	198	18.6
273	Assault by Cutting and Piercing Instrument	170	16.0
276	Other Legal Intervention and Late Effects of Injury due to Legal Intervention	4	0.4
271	Assault by Handgun	1	0.1
Total		1,064	100.0

¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Figure 2.44
 Probability of Eventually Dying From Homicide by Age and Sex
 Michigan Residents, 1987 - 1989¹



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

SUICIDE

There were a total of 1,043 suicide deaths in 1989, making suicide the 10th leading cause of death. Of the deaths resulting from suicide 81.9 percent were among males. Of all suicide deaths 89.0 percent were to white persons.

More than fifty percent of all suicide deaths occurred at or below the age of 39. The median age at death for males was 37 years, 6 years below that for females. The median ages at death for white males and females were 39 and 44 years, respectively. For black males and females the median ages at death were 29 and 31 years, respectively. There were 178 suicide deaths of white persons 65

years of age or older. This is 19.2 percent of all suicide deaths of white persons. Among black persons there were eleven suicide deaths at age 65 or over or 10.6 percent of the total suicide deaths for black persons (Table 2.58).

The crude suicide death rate in 1989 was 11.2 per 100,000 population. The crude rate for males (18.9) was 4.7 times that for females (4.0). Age-specific rates for males were higher than female rates in all age groups (Table 2.59 and Figure 2.45). Suicide rates for males were highest among men aged 85 and above. Suicide rates for females peaked at ages 55-64

Table 2.58
Suicide Death Rates by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	-	-	-	-	-	-	-	-	-	-	-	-
1-4	-	-	-	-	-	-	-	-	-	-	-	-
5-9	-	-	-	-	-	-	-	-	-	-	-	-
10-14	9	7	2	8	6	2	1	1	-	-	-	-
15-19	91	75	16	78	64	14	11	9	2	2	2	-
20-24	105	95	10	81	75	6	23	19	4	1	1	-
25-29	124	109	15	102	89	13	18	16	2	4	4	-
30-34	112	88	24	97	78	19	14	9	5	1	1	-
35-39	94	83	11	81	70	11	11	11	-	2	2	-
40-44	82	58	24	76	53	23	6	5	1	-	-	-
45-49	65	51	14	61	48	13	4	3	1	1	1	-
50-54	56	42	14	53	41	12	2	-	2	1	1	-
55-59	58	38	20	56	37	19	2	1	1	-	-	-
60-64	58	45	13	57	44	13	1	1	-	-	-	-
65-69	50	39	11	44	34	10	6	5	1	-	-	-
70-74	52	45	7	51	44	7	1	1	-	-	-	-
75-79	37	32	5	35	30	5	2	2	-	-	-	-
80-84	29	27	2	28	27	1	1	-	1	-	-	-
85-89	17	16	1	16	15	1	1	1	-	-	-	-
90+	4	4	-	4	4	-	-	-	-	-	-	-
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
All Ages	1,043	854	189	928	759	169	104	84	20	11	11	-
Median Age At Last Birthday	39	37	43	41	39	44	29	29	31	27	27	*

¹ Deaths with sex or race not stated were randomly allocated prior to computation of age-specific death rates. Deaths with age not stated were included in the category 85 and over.

² Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940.

* Rate is considered statistically unreliable.

Note: Population estimates by race used to compute the rates in this table are from a revised series of population estimates based on a modified race distribution for 1980. The race distribution was modified to be consistent with the racial categories from the 1970 Census and the categories used by state departments of health.

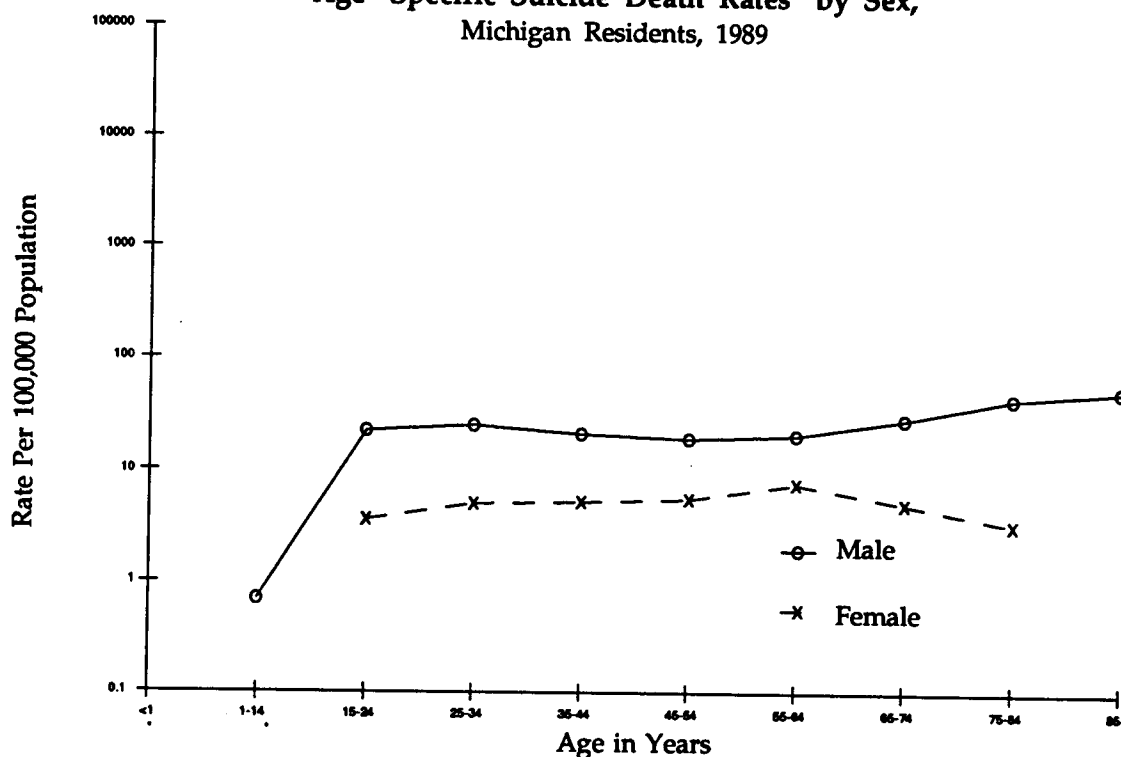
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.59
Deaths Due to Suicide by Age, Race and Sex¹
Michigan Residents, 1989

Age In Years	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages Crude Rate	11.2	18.9	4.0	11.7	19.6	4.2	8.5	14.5	3.1
Under 1	*	*	*	*	*	*	*	*	*
1 - 14	0.5	0.7	*	0.5	0.7	*	*	*	*
15 - 24	13.4	22.9	3.6	13.1	22.4	3.3	14.9	24.9	5.2
25 - 34	15.3	25.7	5.0	15.1	25.4	4.9	15.2	25.8	6.2
35 - 44	13.2	21.6	5.2	13.7	21.5	5.9	10.6	22.3	*
45 - 54	12.5	19.8	5.6	13.5	21.4	5.8	5.7	*	*
55 - 64	14.2	21.4	7.7	15.6	23.4	8.5	*	*	*
65 - 74	16.0	29.8	5.1	16.7	30.7	5.4	11.3	22.4	*
75 - 84	19.4	45.2	3.3	20.4	48.4	3.2	*	*	*
85 and Over	16.9	52.8	*	17.7	55.6	*	*	*	*
Age-Adjusted Rate ²	10.6	17.9	3.8	10.9	18.2	4.0	8.4	14.6	3.1

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 2.45
Age - Specific Suicide Death Rates¹ by Sex,
Michigan Residents, 1989



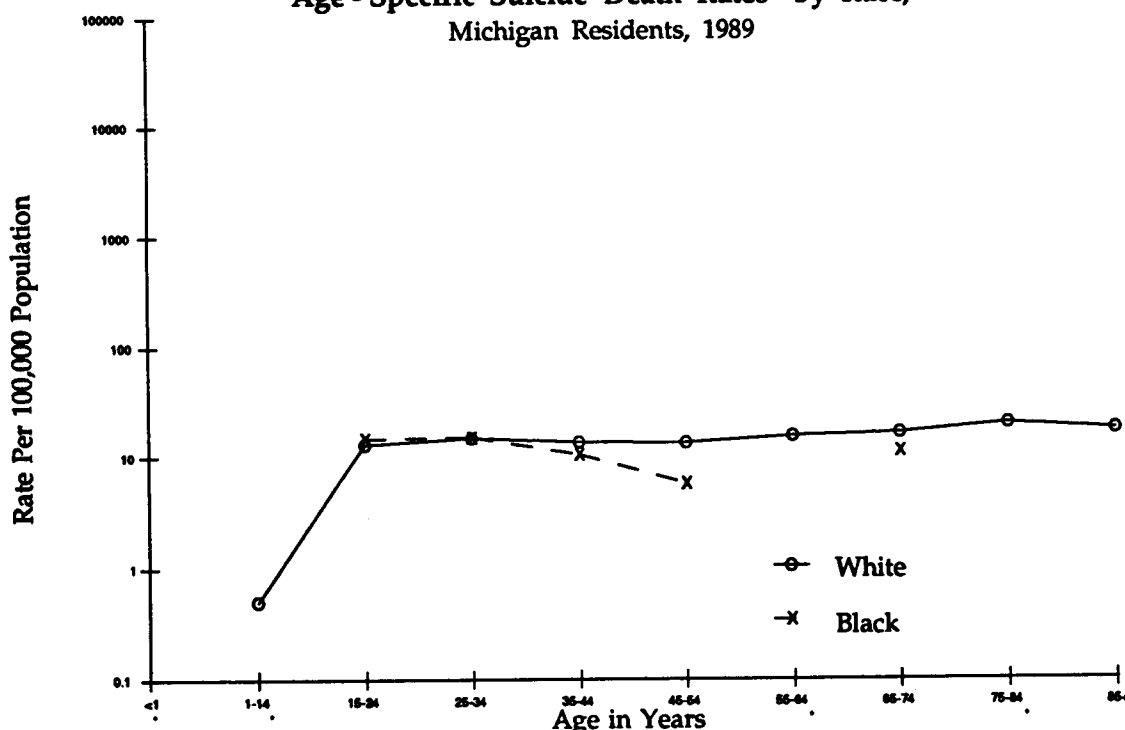
¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
² Rate is considered statistically unreliable.

and declined above that age. The greatest relative differentials by sex were for the ages 75 to 84 where the rates for males were nearly fourteen times that of females, and for age groups from 15 to 24 where the rates for males were over six times that of females.

The crude suicide death rate for the white population was 37.6 percent higher than that

for the black population. The age-adjusted rate for white persons was 29.8 percent higher than that for black persons. Age-specific rates by race from Table 2.59 are displayed in Figure 2.46. Age-specific rates for white persons were greater than those for black persons above age 34 in all categories with sufficient events to calculate rates.

Figure 2.46
Age - Specific Suicide Death Rates¹ by Race,
Michigan Residents, 1989



¹ Note that death rates are shown on a logarithmic scale: vertical distances represent relative differences in rate rather than absolute differences.
• Rate is considered statistically unreliable.

Table 2.60
Suicide Deaths by Ancestry
Michigan Residents, 1989

Ancestry	Deaths	Percent
African	99	9.5
American Indian	12	1.2
Arabian Asian	5	0.5
European	737	70.7
Hispanic	20	1.9
Other (includes American)	133	12.8
Unknown	37	3.5
Total	1,043	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The majority of 1989 Michigan resident suicide deaths, 737, occurred among European ancestry individuals (Table 2.60). There were 99 suicide deaths among individuals of African ancestry. Among individuals of Hispanic, American Indian and Arab Asian ancestry there were 20, 12 and 5 deaths due to suicide, respectively.

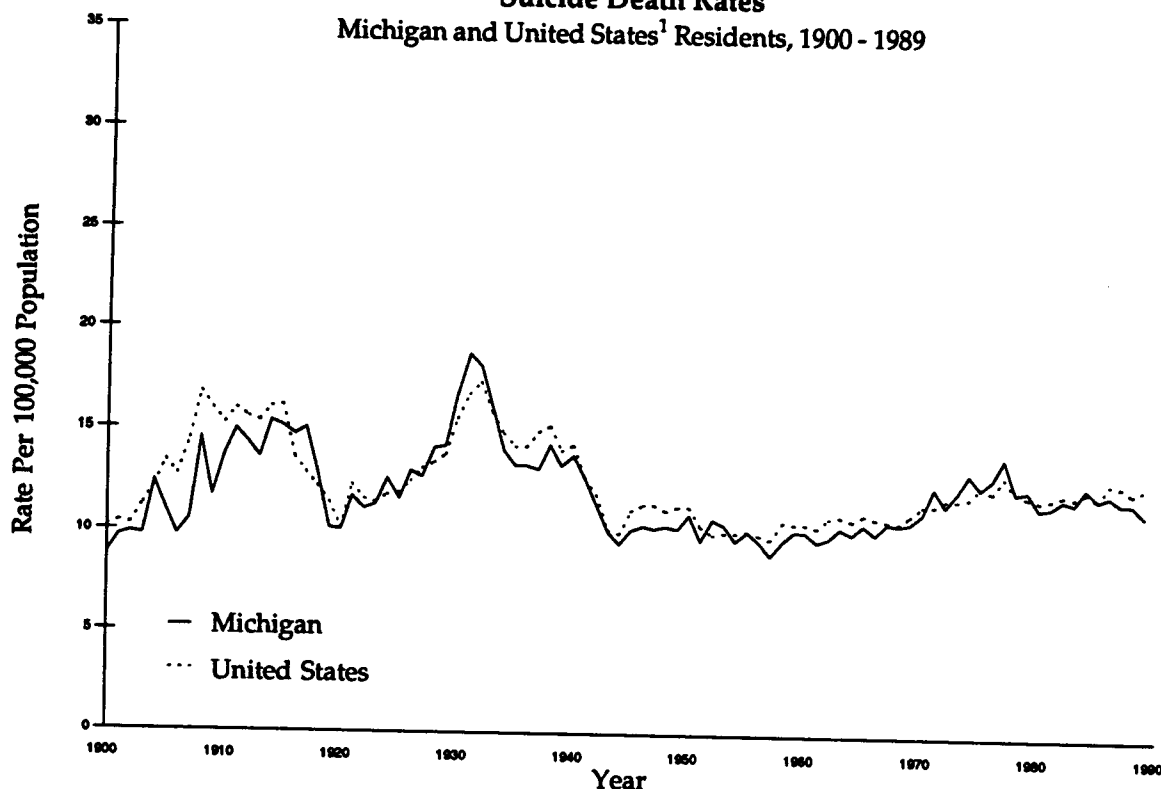
There is strong similarity in both the trend and magnitude of suicide death rates for Michigan and the United States in this century (Figure 2.47). There were two complete cycles of rising then falling rates in the period 1900 through 1944. The rates then held fairly stable for about 20 years. Between 1964 and 1977 the suicide death rate increased by 38.6 percent in Michigan, reaching 14.0, the highest rate since 1938. The highest rate during this century for Michigan was 18.8 in 1931, while the lowest was the rate of 8.8 in 1900. For the nation high and low rates were observed in 1932 (17.4) and in 1957 (9.8). In 1989 the provisional rate for the United States was 12.6, 12.5 percent above the Michigan rate of 11.2.

Age-adjusted suicide death rates by race and sex for Michigan and the United States are presented in Table 2.61. For white females

in Michigan the age-adjusted rates for suicide remained quite stable from 1970 through 1977, and have since declined, while those for white males increased between 1970 and 1977, and held below the 1977 rate through 1989. The rates for other than white persons rose between 1970 and 1979 and have remained below the 1979 level through 1989. The rates for other than white persons were consistently less than those of their white counterparts during the twenty year period.

Age-adjusted suicide death rates for the nation were more stable. For white and other than white females the rates are slowly declining. The rates for white males peaked in 1977 and have been below that level since that year with the exception of 1986. The rates for other than white males increased by 23.3 percent between 1970 and 1979. Since 1979 the na-

Figure 2.47
Suicide Death Rates
Michigan and United States¹ Residents, 1900 - 1989



¹ National rates are from Death Registration States for 1900-1932 and the United States for 1933-1989. United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. United States rate for 1989 is provisional.

² Suicide death rates since 1900 are suitable for general comparison over time but detailed study (such as time series) requires special consideration. See Technical Notes.

Table 2.61
Age-Adjusted Suicide Death Rates¹, by Race and Sex
Michigan² and United States Residents, 1970-1989

Place	Year	All Races			White			Other Than White		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Mich.	1970	11.9	17.3	6.9	12.4	17.9	7.3	7.4	11.8	3.4
	1971	13.0	18.2	8.4	13.2	18.4	8.6	10.7	16.0	6.1
	1972	12.1	17.9	6.9	12.6	18.4	7.2	8.3	12.9	4.3
	1973	12.8	19.3	6.7	13.2	19.8	7.0	9.6	15.8	4.2
	1974	13.6	19.9	8.0	14.2	20.6	8.3	9.2	13.8	5.3
	1975	12.9	19.4	6.8	13.2	19.8	7.1	9.8	15.7	4.7
	1976	13.2	19.8	7.0	13.5	20.2	7.2	10.6	16.7	5.3
	1977	13.9	21.4	7.1	14.4	22.0	7.4	10.0	16.2	4.7
	1978	12.2	18.8	6.2	12.5	19.2	6.2	10.2	15.5	5.8
	1979	12.2	18.6	6.3	12.3	18.7	6.4	11.4	18.0	5.6
	1980	11.2	17.7	5.2	11.7	18.2	5.6	7.9	13.7	2.9
	1981	11.6	17.9	5.9	12.3	18.6	6.4	7.2	13.0	2.3
	1982	11.9	18.9	5.5	12.6	19.8	5.9	7.4	12.8	2.7
	1983	11.9	19.1	5.3	12.5	19.6	5.7	8.6	15.9	2.6
	1984	12.1	19.0	5.9	12.8	20.0	6.1	8.2	12.7	4.4
	1985	11.5	19.5	4.1	11.9	19.9	4.4	8.7	16.5	2.1
	1986	11.5	18.3	5.3	11.9	18.9	5.4	9.0	14.5	4.4
	1987	11.3	18.2	4.8	11.5	18.4	5.0	9.3	16.6	3.1
	1988	11.1	18.1	4.5	11.4	18.5	4.8	8.7	15.0	3.3
1989	10.6	17.9	3.8	10.9	18.2	4.0	8.5	15.0	2.8	
U.S.	1970	11.8	17.3	6.8	12.4	18.2	7.2	6.5	10.3	3.3
	1971	11.8	17.2	7.0	12.4	18.0	7.4	6.7	10.1	3.8
	1972	12.1	17.8	6.9	12.6	18.4	7.3	7.4	11.8	3.6
	1973	11.9	17.8	6.6	12.5	18.6	7.0	7.1	11.5	3.3
	1974	12.1	18.1	6.6	12.7	18.9	7.0	7.1	11.6	3.2
	1975	12.5	18.8	6.8	13.2	19.6	7.3	7.4	11.9	3.5
	1976	12.1	18.3	6.6	12.7	19.0	7.0	7.4	12.1	3.4
	1977	12.8	19.4	6.7	13.5	20.3	7.1	7.6	12.2	3.6
	1978	11.9	18.2	6.1	12.5	19.0	6.6	7.2	11.9	3.2
	1979	11.7	17.9	5.9	12.2	18.6	6.3	7.7	12.7	3.3
	1980	11.4	18.0	5.4	12.1	18.9	5.7	6.7	11.3	2.8
	1981	11.5	18.0	5.7	12.2	18.9	6.0	6.8	11.2	3.0
	1982	11.6	18.3	5.4	12.4	19.4	5.8	6.4	10.8	2.6
	1983	11.4	18.2	5.2	12.2	19.3	5.6	6.4	10.7	2.6
	1984	11.6	18.7	5.2	12.4	19.7	5.6	6.6	11.2	2.7
	1985	11.5	18.8	4.9	12.3	19.9	5.3	6.7	11.3	2.5
	1986	11.9	19.3	5.1	12.7	20.5	5.4	6.8	11.5	2.7
	1987	11.7	19.1	4.9	12.5	20.1	5.3	6.9	11.9	2.5
	1988	11.4	18.7	4.7	12.2	19.8	5.1	6.9	11.6	2.6
1989 ³	11.7	—	—	—	—	—	—	—	—	

¹ Based on age-specific death rates per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940; see Technical Notes.

² Michigan rates for 1981-1985 have been revised based upon revisions to population estimates; see Technical Notes.

³ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

tional rate for other than white males has decreased by 8.7 percent.

The age-adjusted suicide death rates in Michigan for the other than white population were significantly higher than those of the nation. Rates in Michigan for the white population groups were similar to those of the nation. The age-adjusted rate for the total population of Michigan was at or above the comparable national rate fifteen out of twenty years from 1970 through 1989.

Suicides in Michigan were predominantly the result of one of four types of self-inflicted injury. Self-inflicted injury by firearms caused 592 deaths in 1989. Hanging, strangulation and suffocation resulted in 188 deaths. There were 98 deaths due to poisoning by drugs, medicaments and biologicals. Self-inflicted poisoning by gases and vapors resulted in 93 deaths. Together these four types of suicide accounted for 93.1 percent of all suicide deaths to Michigan residents in 1988 (Table 2.62).

Table 2.62
Deaths Due to Suicide by Detailed Cause
Michigan Residents, 1989

282 List ¹ Number	Cause of Death	Number of Deaths	Percent
269	Suicide by All Other and Unspecified Firearms	580	55.6
267	Suicide by Hanging, Strangulation and Suffocation	188	18.0
264	Suicide by Drugs, Medicaments, and Biologicals	98	9.4
266	Suicide by Gases and Vapors	93	8.9
270	Suicide by All Other Means and Late Effects of Self-Inflicted Injury	64	6.1
268	Suicide by Handguns	12	1.2
265	Suicide by Other Solid or Liquid Substances	8	0.8
Total		1,043	100.0

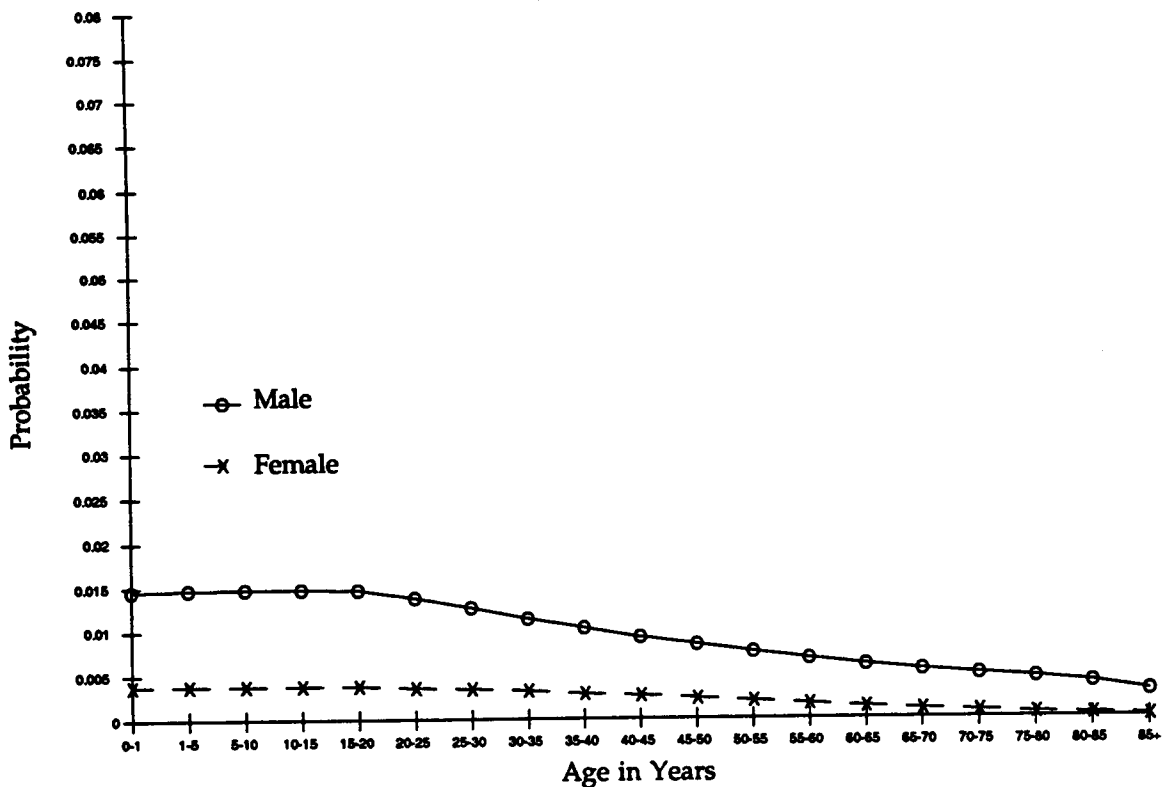
¹ List of 282 Selected Causes developed by the National Center for Health Statistics for tabulation of mortality data coded by the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Using the Michigan mortality experience of 1987 through 1989, the chance of a male eventually dying from suicide is 0.015 at birth. The risk for females is 0.004. These prob-

abilities hold relatively constant up to age 20 then taper off with advancing age (Figure 2.48).

Figure 2.48
Probability of Eventually Dying from Suicide by Age and Sex
Michigan Residents, 1987 - 1989



¹ Note: Should comparisons be desired between this graph and a similar graph contained herein that pertains to some other specified cause of death, differences in scale may be encountered.

THE PROBABILITY AT BIRTH OF EVENTUAL DEATH DUE TO A SPECIFIED CAUSE

While cause-specific death rates are useful in gauging the frequency of death due to certain causes and in making comparisons between areas or populations, they do not relate the risk that the condition imposes on the population with clarity. Mortality data can be used to develop this risk in probabilistic terms. Through the application of life expectancy techniques, a probability of death due to a given cause can be estimated.

Such probabilities represent the average risk of eventual death being caused by a specified condition under an assumption that the mortality across all ages that was observed in a time period will remain unchanged through

the remaining life of the population. These probabilities can be estimated for any given age attained. The following table relates the probability at birth of dying from the ten leading causes of death based upon Michigan mortality experience for the years 1987 through 1989.

The 1987 through 1989 data would indicate that 85.9 percent of all males and 83.2 percent of all females in Michigan will die from one of the ten leading causes if all things remain constant. Approximately four of every ten people will die from heart disease. Women face higher risks of death from heart disease, cerebrovascular disease, pneumonia and in-

DISEASE CATEGORY	PROBABILITY AT BIRTH OF EVENTUAL DEATH DUE TO CONDITION FOR:	
	Males	Female
Diseases of the Heart	.388	.412
Malignant Neoplasms	.229	.198
Cerebrovascular Diseases	.057	.091
Accidents and Adverse Effects	.045	.022
Chronic Obstructive Pulmonary Diseases and Allied Conditions	.045	.029
Pneumonia and Influenza	.036	.039
Diabetes Mellitus	.017	.025
Chronic Liver Disease and Cirrhosis	.015	.008
Homicide	.012	.004
Suicide	.015	.004
All Other Causes	.141	.168
Total	1.000	1.000

fluenza and diabetes mellitus than do males. At the same time, males are more likely to die from cancer, accidents, chronic obstructive pulmonary diseases and allied conditions, chronic liver disease and cirrhosis, homicide and suicide.

Related to the probability at birth of eventual death due to a given cause is the hypothetical gain in life expectancy that would result if a given cause of death were eliminated. Based on 1987-1989 mortality data, the average number of years of life gained by eliminating deaths due to a major cause is given in the table that follows.

Deaths in infancy from all causes are added for comparative purposes.

The largest gains in life expectancy would result from the elimination of heart disease and cancer, the two leading causes of death. Considering the number of deaths involved, relatively large gains in life expectancy would result from the elimination of infant mortality, accidents, homicide and suicide. Eliminating deaths in the younger age groups, where many of the deaths from these causes occur, has a greater impact on the potential number of years of life to be gained than eliminating deaths in the more advanced age groups.

DISEASE CATEGORY ELIMINATED	YEARS GAINED IN LIFE EXPECTANCY FOR:	
	Males	Female
Diseases of the Heart	4.25	3.08
Malignant Neoplasms	3.08	2.98
Cerebrovascular Diseases	0.48	0.59
Accidents and Adverse Effects	1.67	0.56
Chronic Obstructive Pulmonary Diseases and Allied Conditions	0.40	0.33
Pneumonia and Influenza	0.26	0.21
Diabetes Mellitus	0.20	0.26
Chronic Liver Disease and Cirrhosis	0.29	0.16
Homicide	0.49	0.16
Suicide	0.42	0.12
All Causes of Infant Mortality	0.72	1.00

INFANT DEATHS

Of the 78,566 deaths occurring to Michigan residents in 1989, 1,645 occurred to individuals less than one year of age. The number of infant deaths generally declined steadily from 1958 through 1987. In both 1988 and 1989 the numbers of infant deaths rose. Since 1970, when there were 3,492 such deaths, the frequency of infant deaths has declined by 52.9 percent (Table 2.63). Nationally, the provisional number of infant deaths in 1989 was 38,900. This was 47.9 percent below the number in 1970.

Table 2.63

Infant Deaths and Infant Death Rates
Michigan and United States Residents, 1970 - 1989

United States		Year	Michigan	
Number	Rate		Number	Rate
74,667	20.0	1970	3,492	20.3
67,981	19.1	1971	3,157	19.5
60,182	18.5	1972	2,801	19.1
55,581	17.7	1973	2,561	18.1
52,776	16.7	1974	2,387	17.4
50,525	16.1	1975	2,205	16.5
48,265	15.2	1976	1,978	15.1
46,975	14.1	1977	1,945	14.1
45,945	13.8	1978	1,931	13.9
45,665	13.1	1979	1,921	13.3
45,526	12.6	1980	1,851	12.8
43,305	11.9	1981	1,851	13.2
42,401	11.5	1982	1,672	12.1
40,627	11.2	1983	1,573	11.8
39,580	10.8	1984	1,595	11.7
40,030	10.6	1985	1,575	11.4
38,891	10.4	1986	1,565	11.4
38,408	10.1	1987	1,538	10.9
38,910	10.0	1988	1,542	11.0
38,900 ¹	9.7 ¹	1989	1,645	11.1

¹ Provisional data.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The rate of death for infants under the age of one year has dropped considerably since 1900. In that year there were 157.1 infant deaths for every 1,000 live births. This means that about 16 of every 100 infants did not survive their first year. This rate fell below 100 by 1914 (96.8), to less than 70 by 1927 (67.7), and to less than 50 by 1935 (47.7). During the 1940's the Michigan infant death rate declined from 40.6 in 1940 to 28.9 in 1949.

Relative declines in the infant death rate slowed considerably in the 1950's and 1960's. It was not until 1971 that the rate dropped below 20 to 19.5. The rate of decline between 1970 and 1980 compares favorably with the rate of decline observed before 1950. The infant death rate for Michigan rose in 1981 for the first such increase since 1970. This rate then declined each year between 1982 and 1985. The 1986 infant mortality rate was the same as the 1985 rate. In 1987, the infant mortality rate declined to 10.9. In 1988 and 1989 the rate rose to 11.0 and 11.1, respectively (Figure 2.49).

During the period 1915-1928, the rate for Michigan was above that for the United States 9 of 14 years. From 1929 through 1969, Michigan's infant death rate was consistently below the national statistic. From 1970 through 1975 the infant mortality rate in Michigan was slightly higher than the rate for the nation. From 1976 through 1980 the rates for the state and nation were similar. Since 1980 the rate for Michigan has been 5 to 14 percent above the national rate. The provisional rate for the United States in 1989 was 9.7

Table 2.64 shows the numbers of infant deaths and infant death rates by age at death for the period 1970-1989. The number of infants that died during the first week of life

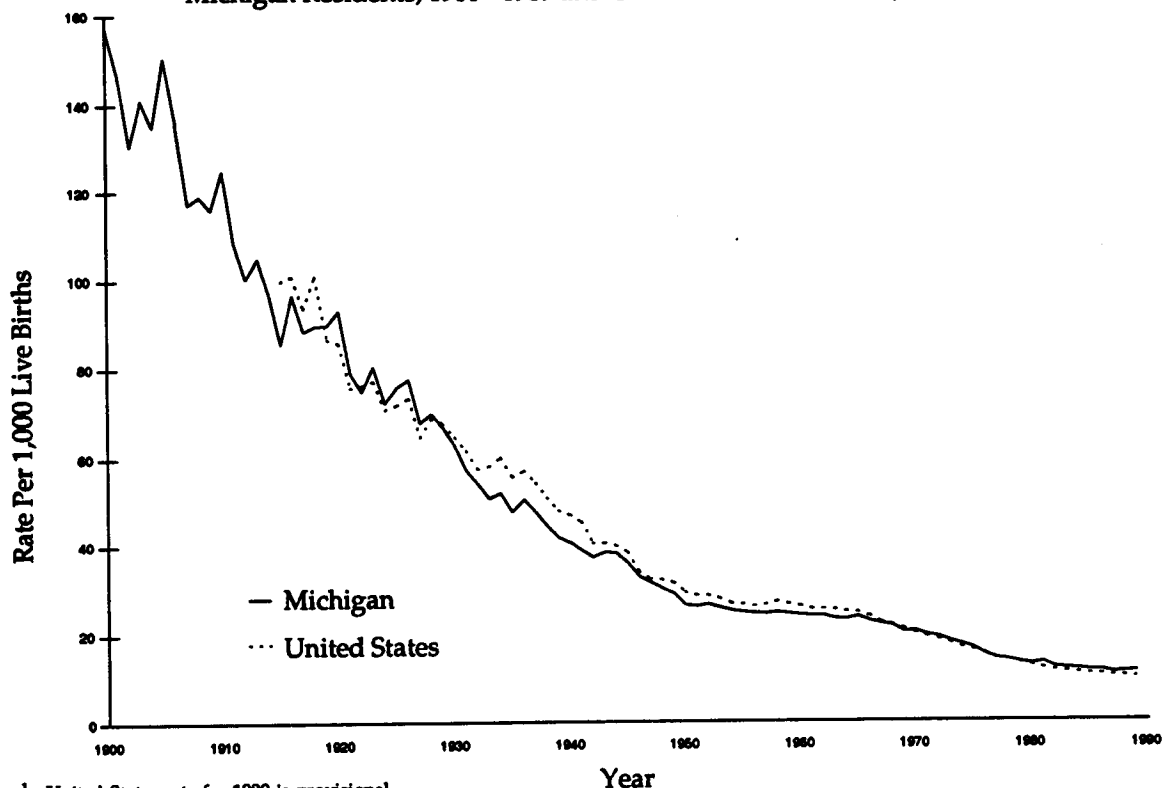
in 1989 (911) is greater than the number of deaths of infants aged 7-364 days (734). In 1989 65.0 percent of all infant deaths occurred within the first four weeks of life and 55.4 percent occurred in the first week. These percentages were 76.8 and 70.5 percent in 1970 and were 67.4 and 57.8 percent by 1979.

A review of Table 2.64 reveals that the 14.4 percent decline in the infant mortality rate since 1979 stems largely from reductions in the rate of death for those under 1 day, and between 1 and 6 days of age. There were 2.2 fewer infant deaths per 1,000 live births in 1989 than in 1979. Of these, there were 0.5 and 1.1 fewer infant deaths per 1,000 live births, respectively, for ages under 1 day and 1 to 6 days of life in 1989 than in 1979. They represented 72.1 percent of the reduction.

The death rate for infants during their first day of life declined 9.6 percent since 1979. The rate increased in the two years following 1979, and generally decreased since 1981. The death rate for ages 1-6 days has declined, generally steadily, by 44.0 percent between 1979 and 1989. The death rate for infants aged 7-27 days had a lesser decrease of 15.4 percent below the 1979 level. The death rate for infants aged 28-364 days has generally decreased between 1979 and 1989, but the rate for 1989 was greater than the 1988 rate. In 1989 the death rate for these infants was 3.9, 9.3 percent below the comparable rate for 1979.

Beginning with 1989 data, the National Center for Health Statistics will be presenting all racial information for live birth numbers and rates involving live births by race of the mother rather than the race of the infant. In

Figure 2.49
Infant Mortality Rates
 Michigan Residents, 1900 - 1989 and United States¹ Residents, 1915 - 1989



¹ United States rate for 1989 is provisional.

Table 2.64
Infant Deaths and Infant Death Rates by Age at Death
 Michigan Residents, 1970 - 1989

Year	Age at Death									
	Total Infant Deaths		Under 1 Day		1-6 Days		7-27 Days		28-364 Days	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1970	3,492	20.3	1,367	8.0	1,095	6.4	221	1.3	809	4.7
1971	3,157	19.5	1,191	7.3	1,025	6.3	196	1.2	745	4.6
1972	2,801	19.1	1,024	7.0	906	6.2	185	1.3	686	4.7
1973	2,561	18.1	1,131	8.0	579	4.1	192	1.4	659	4.7
1974	2,387	17.4	940	6.8	569	4.1	225	1.6	653	4.8
1975	2,205	16.5	856	6.4	461	3.4	246	1.8	642	4.8
1976	1,978	15.1	829	6.3	402	3.1	193	1.5	554	4.2
1977	1,945	14.1	794	5.7	374	2.7	199	1.4	578	4.2
1978	1,931	13.9	717	5.2	384	2.8	180	1.3	650	4.7
1979	1,921	13.3	754	5.2	356	2.5	185	1.3	626	4.3
1980	1,851	12.8	790	5.4	310	2.1	184	1.3	567	3.9
1981	1,851	13.2	815	5.8	296	2.1	170	1.2	570	4.1
1982	1,672	12.1	751	5.4	284	2.1	167	1.2	470	3.4
1983	1,573	11.8	672	5.1	238	1.8	157	1.2	506	3.8
1984	1,595	11.8	718	5.3	237	1.8	145	1.1	495	3.7
1985	1,575	11.4	697	5.1	217	1.6	157	1.1	504	3.7
1986	1,565	11.4	680	4.9	237	1.7	162	1.2	486	3.5
1987	1,538	11.0	660	4.7	217	1.5	152	1.1	509	3.6
1988	1,542	11.0	685	4.9	213	1.5	170	1.2	474	3.4
1989	1,645	11.1	703	4.7	208	1.4	159	1.1	575	3.9

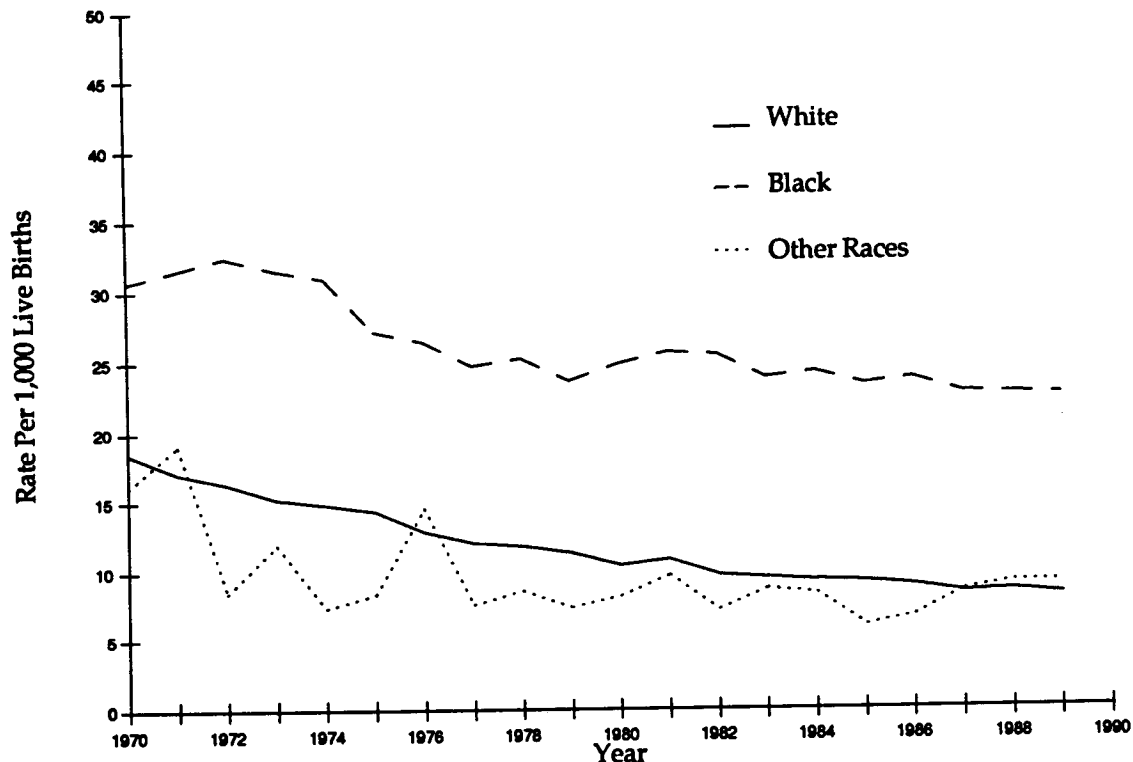
Source: Office of the State Registrar and Center for Health Statistics, MDPH

the future, Michigan vital statistics articles will be reporting live birth numbers and rates and infant death rates by race of mother for live births. The race of the infant and the race of the mother for live births are not necessarily identical since the vital statistics offices of many states, including Michigan, and the National Center make use of special algorithms for determining an infant's race from the race of both parents, if available. Race for infant deaths is based entirely on the race of the infant as obtained from the death record. This change in the reporting of live birth information and infant death rates has the potential of seriously effecting comparability

with data based on race of infant if the numbers for any racial categories are appreciably different using the two methods of assigning race. Data are published in this report both ways to assist the reader in seeing the impact of this change

Infant death rates since 1970 for white, black and other races are graphically displayed in Figure 2.50. The rates used in this graph were calculated using the race of the mother for live births. Historical infant death rates by race for 1970 through 1988 which were calculated by the previous method of enumerating live

Figure 2.50
Infant Death Rates by Race¹
 Michigan Residents, 1970 - 1989²



¹ Based on race of mother.

² Starting in 1989 live birth numbers used in the calculation of infant death rates were enumerated by race of mother, prior to 1989 race of infant was used.

births by the infant's race may be seen in the 1988 Michigan Health Statistics, Figure 2.50.

Black infant death rates were higher than rates for both of the other racial groups throughout the period. The infant death rate for other races was below the white infant death rate for all years in this period except 1971, 1976 and 1987 through 1989.

Although the rates for all three race groups have declined, those for the white and other races decreased by a relatively larger amount than those for the black race. As a result, the differential in infant mortality rate between black infants and white and other race infants has increased since 1970.

The infant mortality rate for infants of other races dropped 43.5 percent between 1970 and 1989. In the same period the rate for white infants dropped by 55.7 percent, while for black infants the decline was 26.5 percent. The rate for black infants of 30.6 in 1970 was 65.4 percent higher than that for white infants (18.5) and 90.1 percent higher than the rate for infants of other races (16.1). The infant death rate for white infants in 1970 was 14.9 percent higher than the corresponding rate for infants of other races.

In 1989 the rate for black infants of 22.5 was 2.7 times that for white infants (8.2) and 2.5 times that for infants of other races (9.1). The white infant death rate in 1989 was 9.9 percent less than the rate for infants of other races.

When the 1989 infant death rates are calculated using the older method for each race group, the rate for black infants of 21.9 is 2.6 times the rate for white infants (8.3) and 3.0 times the rate of 7.3 for infants of other races (Table 2.65).

The pattern of infant death rates by race from 1970 to 1989 is generally similar when the race of the infant is used in classifying the race of live births. The one notable difference is that white infant death rates for the years 1987 and 1988 were greater than the infant death rates for all other races when the older method is used in classifying the race of live births.

In Table 2.65 infant death rates are presented by both race of infant and race of mother for live births. The numbers of live births to mothers of all races other than white are fewer than the numbers of live births of infants of all races other than white. The infant death rates for all races other than white are higher when live births reported by

mother's race are used in calculating infant death rates. Rates are appreciably higher for American Indian (9.5 vs. 6.4), Chinese (11.6 vs. 9.9) and Filipino (9.8 vs. 8.7) when live births by mother's race are used to calculate the infant death rates. For the white race, live births are more numerous when reported by the race of the mother than when reported by the infant's race. This results in a lower white infant death rate when live births to white women are used in calculating the rate.

In Table 2.66 numbers of infant deaths are presented by ancestry of the infant death and live births are presented by the mother's ancestry. Disregarding individuals of unknown ancestry, live births to mothers of African ancestry have the highest infant death rate, 22.9 infant deaths per 1,000 live births. This is 2.2 times higher than the next highest rate, 10.4, occurring to live births whose mothers are of American Indian ancestry. The infant death rate of 5.2 among live births whose mothers are of Arabian Asian ancestry was the lowest reported.

Table 2.65
Comparison of Infant Death Rates by Race
of Mother vs Race of Infant
Michigan Residents, 1989

Race	Infant Deaths	Infant ¹		Mother ²	
		Live Births	Infant Death Rate	Live Births	Infant Death Rate
Total	1,645	148,164	11.1	148,164	11.1
White	946	113,724	8.3	115,186	8.2
Black	672	30,730	21.9	29,839	22.5
American Indian	8	1,248	6.4	844	9.5
Other Races	15	1,904	7.9	1,681	8.9
Chinese	3	304	9.9	259	11.6
Japanese	-	160	0.0	129	0.0
Filipino	2	231	8.7	205	9.8
Hawaiian	-	33	0.0	16	0.0
Other Non-White	-	70	0.0	48	0.0
Other Asian	10	1,106	9.0	1,024	9.8
Unknown	4	558	7.2	614	6.5

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1 Imputed race of infant based on mother's race and father's race, when available.

2 Based on mother's race on birth certificate.

Table 2.66
Infant Deaths, Live Births and
Infant Death Rates by Ancestry
Michigan Residents, 1989

Ancestry ¹	Infant Deaths	Live Births	Infant Death Rate
Total	1,645	148,164	11.1
African ²	659	28,838	22.9
American Indian	26	2,490	10.4
Arabian Asian	12	2,308	5.2
Southeastern Asian and Pacific Islander	14	1,352	10.4
European	622	72,859	8.5
Hispanic	36	4,156	8.7
Other ^{1,2}	195	27,252	7.2
Unknown	81	8,913	9.1

Source: Office of the State Registrar and Center for Health Statistics, MDPH

1 Ancestry of infant at death; ancestry of mother of the live births.

2 Individuals who indicated black race and American ancestry have been allocated to African ancestry.

Infant deaths of unknown ancestry accounted for 4.9 percent of the infant deaths. Among live births, 6.0 percent were reported with mother's ancestry as unknown.

Michigan resident infant deaths in 1989 are listed by cause of death classification and age at death in Table 2.67. Congenital anomalies caused the death of 277 infants and was the specific disease category most frequently reported. Sudden infant death syndrome was responsible for 254 infant deaths in 1989, while disorders relating to short gestation and

unspecified low birthweight was listed as the cause of 237 deaths.

Over half (53.9 percent) of all infant deaths were attributed to conditions originating in the perinatal period. This proportion was 85.8 percent for those infant deaths which occurred during the first day, 64.9 percent for deaths of infants at ages 1 through 6 days, and 53.5 percent for deaths of infants 7-27 days of age. This percentage was 8.8 percent for infants from 1-5 months and 18.8 percent for those 6-11 months of age.

Table 2.67
Infant Deaths by Age at Death and Underlying Cause
Michigan Residents, 1989

ICD - 9 CODE	Cause of Death	Age at Death					
		Total <1 Year	<1 Day	1-6 Days	7-27 Days	1-5 Months	6-11 Months
8, 9, 535 555-558 38	Certain gastrointestinal diseases	7	-	-	-	5	2
1-7, 10-37, 39-139 320-322 480-487	Septicemia	18	1	-	-	16	1
	Remainder of infectious and parasitic disease	13	-	-	1	9	3
	Meningitis	2	-	-	-	2	-
	Pneumonia and Influenza	17	-	-	2	12	3
740-759 761	Congenital anomalies	277	94	63	46	49	25
762	Newborn affected by maternal complications of pregnancy	88	88	-	-	-	-
765	Newborn affected by complications of placenta cord and membranes	25	22	1	2	-	-
767	Disorders relating to short gestation and unspecified low birthweight	237	230	5	1	-	1
768	Birth trauma	10	1	6	2	1	-
769	Intrauterine hypoxia and birth asphyxia	28	13	7	6	2	-
770	Respiratory distress syndrome	204	88	68	29	12	7
771	Other respiratory conditions of newborn	158	83	26	14	19	16
772	Infections specific to the perinatal period	28	7	3	15	2	1
	Neonatal hemorrhage	8	2	3	3	-	-
760, 763, 764, 766, 773-779 760-779	All other and ill-defined conditions originating in the perinatal period	101	69	16	13	3	-
798.0	Certain conditions originating in the perinatal period	887	603	135	85	39	25
E800-949 E960-969	Sudden infant death syndrome	254	1	3	11	218	21
	Accidents and adverse effects	48	-	-	3	27	18
	Homicide	10	1	1	-	7	1
Residual	All other causes	112	3	6	11	58	34
	Total	1,645	703	208	159	442	133

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The most frequent specific cause of death category during the first day of life was disorders relating to short gestation and unspecified low birthweight (32.7 percent). Congenital anomalies were responsible for 13.4 percent of the deaths. Newborn affected by maternal complications of pregnancy and respiratory distress syndrome were each the cause of 12.5 percent of the deaths to infants during the first day of life. Other respiratory conditions of the newborn caused 11.8 percent of the deaths under 1 day of age.

Respiratory distress syndrome and congenital anomalies were the leading causes of death for infants 1-6 days of age (32.7 percent and 30.3 percent, respectively). For infants who died at 1-3 weeks of age the most frequent causes were congenital anomalies (28.9 percent) and respiratory distress syndrome (18.2 percent).

Sudden infant death syndrome was reported as the cause of 49.3 percent of the deaths to infants from 1-5 months of age. The leading causes of death for infants from 6-11 months of age were congenital anomalies (18.8 percent) and sudden infant death syndrome (15.8 percent). The 18 deaths due to accidents to infants aged 6-11 months represent 13.5 percent of the total deaths in this age group, while accidental deaths represent only 2.9 percent of all infant deaths.

In Table 2.68 infant deaths and death rates by cause are shown for white, black and other race infants using race of mother for live births when calculating rates. The most frequent causes of death for white infants were congenital anomalies (213 deaths), sudden infant death syndrome (161 deaths), respiratory distress syndrome (116 deaths), disorders relating to short gestation and unspecified low birthweight (90 deaths) and other respiratory conditions of newborn (86 deaths). For black infants disorders relating to short gestation and unspecified low birthweight was the leading cause of death with 146 infant deaths. Other frequent causes were respiratory distress syndrome (87 deaths), sudden infant death syndrome (84 deaths) and other respiratory conditions of newborn (70 deaths). There were a total of 23 deaths for infants of other races, 8 of which (34.8 percent) were attributed to congenital anomalies, 7 attributed to sudden infant death syndrome and 5 attributed to certain conditions originating in the perinatal period.

Cause-specific infant death rates for black infants were higher than white infants for all categories with sufficient events to calculate rates for racial groups. The infant death rate due to congenital anomalies for other races was higher than for white and black infants.

Table 2.68
 Infant Deaths and Infant Death Rates by Race of Mother and Underlying Cause
 Michigan Residents, 1989

ICD - 9 Code	Cause of Death	Race of Mother							
		Total ¹		White		Black		All Other	
		Number	Rate ²	Number	Rate ²	Number	Rate ²	Number	Rate ²
8,9,535, 555-558 38	Certain gastrointestinal diseases	7	4.7	1	*	6	20.1	-	-
1-7,10-37, 39-139	Septicemia	18	12.1	12	10.4	6	20.1	-	-
320-322	Remainder of infectious and parasitic diseases	13	8.8	5	*	8	26.8	-	-
480-487	Meningitis	2	*	-	-	2	*	-	-
740-759	Pneumonia and Influenza	17	11.5	10	8.7	7	23.5	-	-
761	Congenital anomalies	277	187.0	213	184.9	56	187.7	8	316.8
762	Newborn affected by maternal complications of pregnancy	88	59.4	58	50.4	30	100.5	-	-
765	Newborn affected by complications of placenta, cord and membranes	25	16.9	14	12.2	11	36.9	-	-
767	Disorders relating to short gestation and unspecified low birthweight	237	160.0	90	78.1	146	489.3	-	-
768	Birth trauma	10	6.7	3	*	7	23.5	-	-
769	Intrauterine hypoxia and birth asphyxia	28	18.9	15	13.0	13	43.6	-	-
770	Respiratory distress syndrome	204	137.7	116	100.7	87	291.6	1	*
771	Other respiratory conditions of newborn	158	106.6	86	74.7	70	234.6	2	*
772	Infections specific to the perinatal period	28	18.9	13	11.3	15	50.3	-	-
760, 763, 764, 766, 773-779	Neonatal hemorrhage	8	5.4	4	*	4	*	-	-
760-779	All other and ill-defined conditions originating in the perinatal period	101	68.2	44	38.2	55	184.3	2	*
798.0	Certain conditions originating in the perinatal period	887	598.7	443	384.6	438	1,467.9	5	*
E800-949	Sudden infant death syndrome	254	171.4	161	139.8	84	281.5	7	277.2
E960-969	Accidents and adverse effects	48	32.4	29	25.2	18	60.3	-	-
Residual	Homicide	10	6.7	7	6.1	3	*	-	-
	All other causes	112	75.6	65	56.4	44	147.5	3	*
Total		1,645	1,110.3	946	821.3	672	2,252.1	23	910.9

¹ Records with race not stated are included only in total columns.

² Rates per 100,000 live births.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

When live births, counted by race of infant, are used to calculate infant death rates, cause specific white infant mortality rates go up and black rates are lower (Table 2.69). Using the old definition of infant mortality one conclusion changes: congenital anomalies for black infants is lower than the rate for white infants (182.2 vs. 187.3).

The infant death rate from all causes for males was 14.2 percent greater than that for

females (Table 2.70). The death rates for males, due to respiratory distress syndrome and sudden infant death syndrome were 55.1 percent and 16.3 percent greater, respectively, than rates for females. For those rates with sufficient data available to be calculable, the largest relative differential in rates by sex were for deaths due to pneumonia and influenza where the rate for males was 74.7 percent greater than that for females (Table 2.70).

Table 2.69
Infant Deaths and Infant Death Rates by Race of Infant and Underlying Cause
 Michigan Residents, 1989

ICD - 9 Code	Cause of Death	Race of Infant							
		Total ¹		White		Black		All Other	
		Number	Rate ²	Number	Rate ²	Number	Rate ²	Number	Rate ²
8, 9, 535, 555-558	Certain gastrointestinal diseases	7	4.7	1	*	6	19.5	-	-
38	Septicemia	18	12.1	12	10.6	6	19.5	-	-
1-7, 10-37, 39-139	Remainder of infectious and parasitic diseases	13	8.8	5	*	8	26.0	-	-
320-322	Meningitis	2	*	-	-	2	*	-	-
480-487	Pneumonia and Influenza	17	11.5	10	8.8	7	22.8	-	-
740-759	Congenital anomalies	277	187.0	213	187.3	56	182.2	8	253.8
761	Newborn affected by maternal complications of pregnancy	88	59.4	58	51.0	30	97.6	-	-
762	Newborn affected by complications of placenta, cord and membranes	25	16.9	14	12.3	11	35.8	-	-
765	Disorders relating to short gestation and unspecified low birthweight	237	160.0	90	79.1	146	475.1	-	-
767	Birth trauma	10	6.7	3	*	7	22.8	-	-
768	Intrauterine hypoxia and birth asphyxia	28	18.9	15	13.2	13	42.3	-	-
769	Respiratory distress syndrome	204	137.7	116	102.0	87	283.1	1	*
770	Other respiratory conditions of newborn	158	106.6	86	75.6	70	227.8	2	*
771	Infections specific to the perinatal period	28	18.9	13	11.4	15	48.8	-	-
772	Neonatal hemorrhage	8	5.4	4	*	4	*	-	-
760, 763, 764, 766, 773-779	All other and ill-defined conditions originating in the perinatal period	101	68.2	44	38.7	55	179.0	2	*
760-779	Certain conditions originating in the perinatal period	887	598.7	443	389.5	438	1,425.3	5	*
798.0	Sudden infant death syndrome	254	171.4	161	141.6	84	273.3	7	222.1
E800-949	Accidents and adverse effects	48	32.4	29	25.5	18	58.6	-	-
E960-969	Homicide	10	6.7	7	6.2	3	*	-	-
Residual	All other causes	112	75.6	65	57.2	44	143.2	3	*
Total		1,645	1,110.3	946	831.8	672	2,186.8	23	729.7

¹ Records with race not stated are included only in total columns.

² Rates per 100,000 live births.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

In this section infant mortality rates are present for deaths among Michigan resident infants born in 1988. These data are from a file of merged live birth and infant death information. Note that this matched file is approximately 100 percent complete. Since this is based on 1988 births mortality rates by race are calculated by the old method. When infant mortality data are published for infants born in 1989, the new method of calculating race specific mortality rates will be used.

The rate for black infants (23.4) was 2.7 times that for white infants (8.7). The rate for American Indians (13.1) was 50.6 percent higher than the white infant death rate. The rate for other races (5.6) was 35.6 percent less than the white infant death rate (Table 2.71).

The death rate for infants aged less than seven days (hebdomadal deaths) showed similar variations by race for those races with sufficient data to calculate rates (Table 2.72).

Table 2.70
Infant Deaths and Infant Death Rates by Sex of Infant and Underlying Cause
 Michigan Residents, 1989

ICD - 9 CODE	Cause of Death	Sex of Infant					
		Total ¹		Male		Female	
		Number	Rate ²	Number	Rate ²	Number	Rate ²
8, 9, 535, 555-558 38	Certain gastrointestinal diseases	7	4.7	4	*	3	*
1-7, 10-37, 39-139	Septicemia	18	12.1	10	13.1	8	11.1
320-322	Remainder of infectious and parasitic diseases	13	8.8	6	7.9	7	9.7
480-487	Meningitis	2	*	2	*	-	-
740-759	Pneumonia and Influenza	17	11.5	11	14.5	6	8.3
761	Congenital anomalies	277	187.0	140	184.0	134	185.9
762	Newborn affected by maternal complications of pregnancy	88	59.4	45	59.1	43	59.7
765	Newborn affected by complications of placenta, cord and membranes	25	16.9	16	21.0	9	12.5
767	Disorders relating to short gestation and unspecified low birthweight	237	160.0	123	161.6	113	156.8
768	Birth trauma	10	6.7	6	7.9	4	*
769	Intrauterine hypoxia and birth asphyxia	28	18.9	11	14.5	17	23.6
770	Respiratory distress syndrome	204	137.7	126	165.6	77	106.8
771	Other respiratory conditions of newborn	158	106.6	87	114.3	71	98.5
772	Infections specific to the perinatal period	28	18.9	15	19.7	13	18.0
760, 763, 764, 766, 773-779	Neonatal hemorrhage	8	5.4	2	*	6	8.3
760-779	All other and ill-defined conditions originating in the perinatal period	101	68.2	52	68.3	48	66.6
798.0	Certain conditions originating in the perinatal period	887	598.7	483	634.8	401	556.4
E800-949	Sudden infant death syndrome	254	171.4	140	184.0	114	158.2
E960-969	Accidents and adverse effects	48	32.4	27	35.5	21	29.1
Residual	Homicide	10	6.7	4	*	6	8.3
	All other causes	112	75.6	69	90.7	43	59.7
Total		1,645	1,110.3	896	1,177.5	743	1,031.0

¹ Records with sex not stated are included only in total columns.

² Rates per 100,000 live births.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The rate for black infants was 3.2 times that for white infants and the rate for other races was 17.0 percent less than for white infants.

Data from the matched file on infant mortality rates by age of mother and race of child are presented in Table 2.73. Infant deaths display a parabolic relationship with mother's age. The rates were highest for infants born to mothers under age 15. The infant mortality rate of 37.7 for mothers under 15 years old was 4.1 higher than the lowest rate of 9.2 for mothers aged 25-29 years. The infant mortality rate for mothers 40 or over was nearly twice as high as the lowest age-specific rate.

Rates for deaths of black and white infants generally followed the parabolic relationship with mother's age as described above. For black infants, the lowest rate was associated with mothers 20 to 24 years of age. Rates for black infants were significantly above those for the white group in all categories with a sufficient number of events to calculate rates. The smallest differential was for mothers 15-19 years of age, where the death rate for black infants was 79.2 percent greater than the rate for white infants.

Table 2.74 displays the variation in infant death rates according to the number of the

mother's prenatal visits. The infant death rate for mothers who had no prenatal care was 72.6, 13.4 times as high as the low rate of 5.4 for mothers who had 15-19 prenatal visits. The rate associated with mothers who had 1-4 visits (84.6) was 15.7 times the low rate, while the rate associated with mothers who had 5-9 visits was 3.6 times as high as the low rate. The infant death rate for mothers with 20 or more prenatal visits was 29.6 percent greater than the low rate, reflecting the likelihood that a high number of prenatal visits was connected with a problem pregnancy.

Infant death rates increased when the mother received less adequate prenatal care as measured by the Kessner Index (Table 2.75). The infant death rate was 3.2 times greater for mothers with inadequate care (27.8 deaths per 1,000 live births) than for mothers with adequate care (8.8 deaths per 1,000 live births) and 1.9 times greater for mothers with intermediate care (16.3 deaths per 1,000 live births). The pattern was similar for both white and black infants.

When the mother received adequate care based on the number of visits, the month prenatal care began and the length of gestation, the infant death rate for black infants (18.4) was 2.6 times greater than for white

Table 2.71
Infant Deaths, Live Births and Infant Death Rates² by Race of Infant
Michigan Resident Infants Born in 1988

Race	Infant Deaths	Live Births	Infant Death Rate
All Races	1,599	139,635	11.5
White	964	110,982	8.7
Black	609	26,034	23.4
American Indian	10	766	13.1
Other Races	10	1,790	5.6
Unknown	6	63	95.2

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.72
Hebdomadal Deaths¹ and Death Rates² by Race of Infant
Michigan Resident Infants Born in 1988

Race	Hebdomadal Deaths	Hebdomadal Death Rate
All Races	926	6.6
White	519	4.7
Black	393	15.1
American Indian	3	*
Other Races	7	3.9
Unknown	4	*

¹ Deaths to infants less than seven days old.

² Per 1,000 live births.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.73
Infant Deaths, Live Births and Infant Death Rates by Age of Mother and Race¹ of Infant
Michigan Resident Infants Born in 1988

Age of Mother	All Infants			White Infants			Black Infants			All Other Infants		
	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate
All Ages	1,599	139,635	11.5	964	110,982	8.7	609	26,034	23.4	20	2,556	7.8
Under 15	14	371	37.7	5	103	*	9	264	34.1	-	3	-
15 - 19	288	17,003	16.9	136	10,470	13.0	147	6,304	23.3	4	216	*
20 - 24	429	37,529	11.4	255	28,793	8.9	171	8,154	21.0	3	566	*
25 - 29	421	45,924	9.2	278	38,887	7.1	135	6,183	21.8	5	836	*
30 - 39	416	37,022	11.2	268	31,230	8.6	139	4,900	28.4	7	878	8.0
40 or More	21	1,148	18.3	16	903	17.7	4	192	*	1	53	*
Not Stated	10	638	15.7	6	596	10.1	4	37	*	-	4	-

¹ Race not stated included in total columns only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.74
Infant Deaths, Live Births and Infant Death Rates by Prenatal Visits and Race¹ of Infant
 Michigan Resident Infants Born in 1988

Number of Visits	All Infants			White Infants			Black Infants			All Other Infants		
	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate
Total	1,599	139,635	11.5	964	110,982	8.7	609	26,034	23.4	20	2,556	7.8
No Care	120	1,652	72.6	34	701	48.5	85	933	91.1	1	15	*
1 - 4	280	3,311	84.6	136	1,955	69.6	140	1,259	111.2	2	93	*
5 - 9	454	23,600	19.2	303	18,156	16.7	143	4,886	29.3	8	550	14.5
10 - 14	527	85,413	6.2	346	69,938	4.9	174	13,976	12.4	6	1,469	4.1
15 - 19	99	18,409	5.4	69	14,341	4.8	28	3,769	7.4	2	294	*
20 or More	31	4,446	7.0	26	3,588	7.2	5	779	*	-	78	-
Unknown	88	2,804	31.4	50	2,303	21.7	34	432	78.7	1	57	*

¹ Race not stated included in total columns only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.75
Infant Deaths, Live Births and Infant Death Rates by Level of Prenatal Care and
Race¹ of Infant
 Michigan Resident Infants Born in 1988

Level of Care (Kessner Index ²)	All Infants			White Infants			Black Infants			All Other Infants		
	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate
Total	1,599	139,635	11.5	964	110,982	8.7	609	26,034	23.4	20	2,556	7.8
Adequate	890	100,969	8.8	592	83,548	7.1	288	15,670	18.4	10	1,720	5.8
Intermediate	435	26,697	16.3	256	19,290	13.3	167	6,824	24.5	6	574	10.5
Inadequate	242	8,702	27.8	102	5,655	18.0	137	2,844	48.2	3	194	*
Unknown	32	3,267	9.8	14	2,489	5.6	17	696	24.4	1	68	*

¹ Race not stated included in total columns only.

² The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

Source: Office of the State Registrar and Center for Health Statistics, MDPH

infants (7.1 deaths per 1,000 live births) and 3.2 times greater than for infants of other races. For mothers with adequate care, the infant death rate for white infants was 22.4 percent greater than the rate for infants of other races.

Mothers with fewer than ten prenatal visits (Table 2.74) had 20.5 percent of all live births but 53.4 percent of all infant deaths. Mothers who had ten or more prenatal visits had 77.5 percent of the live births and 41.1 percent of the infant deaths. The infant death rate for

mothers who had fewer than ten prenatal visits was 29.9. This was 4.9 times the rate of 6.1 for mothers who had ten or more prenatal visits.

While the overall rate for black infants was 2.7 times that for white infants, for mothers who had 15-19 prenatal visits the rate for black infants was close to the rate for white infants (54.2 percent greater). For mothers with fewer than ten prenatal visits, the infant mortality rate for white infants was 22.7 and that for black infants 52.0. For mothers with

ten or more prenatal visits, the rate for white infants was 5.0 and for black infants 11.2.

The rate for black infants was, thus, 129.1 percent greater when the mother had fewer than ten prenatal visits and 124.0 percent greater when the mother had ten or more visits. Both of these racial differentials were less than the overall race differential of 169.0 percent. This seemingly paradoxical result is explained by the differing distributions of the white and the black births. The overall infant mortality rate for each race is a weighted sum of the infant mortality rates for the different prenatal care categories. The weight for each prenatal care category is the ratio of the number of live births in that category to the total number of live births. Since a greater proportion of the black live births are to mothers in the categories with fewer prenatal visits, the higher infant mortality rates in the categories with fewer prenatal visits are more heavily weighted for the black population.

When deaths under one week are added to fetal deaths, the total is called perinatal deaths. By placing a ceiling of six days for the infant component of perinatal deaths, most postnatal accidental and environmental causes of death are eliminated. For total

births in 1988, Michigan resident perinatal deaths numbered 1,687 and the perinatal death rate was 12.0 (Table 2.76). This rate was 12.1 for 1987 total births and 26.0 for 1970 total births.

As with infant death rates, perinatal death rates vary considerably with race, age of mother, and number of prenatal visits. Tables 2.76 and 2.77 show perinatal deaths and rates by age of mother, the number of the mother's prenatal visits, and the race of the fetus or infant for fetal deaths and live births occurring in 1988. The data for hebdomadal deaths are drawn from a merged file of birth and death data.

Table 2.76 displays the increased risk of death to fetuses and infants of mothers under 20 years of age or 40 or greater years of age. Minimum risk in 1988 was associated with mothers 25-29 years of age.

The overall perinatal mortality rate for black fetuses and infants was over 2.7 times the rate for white fetuses and infants. The highest perinatal death rate for both the black and white groups was associated with mothers 40 or more years of age. The minimum risk was associated with mothers 25-29 years of age for

Table 2.76
Perinatal Deaths, Total Births and Perinatal Death Rates by Age of Mother and Race¹ of Infant or Fetus
Births to Michigan Residents in 1988

Age of Mother	All Infants			White Infants			Black Infants			All Other Infants		
	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate
All Ages	1,687	140,396	12.0	1,006	111,469	9.0	649	26,290	24.7	19	2,565	7.4
Under 15	10	375	26.7	2	103	*	7	267	26.2	-	3	-
15 - 19	270	17,109	15.8	128	10,523	12.2	134	6,352	21.1	3	217	*
20 - 24	432	37,740	11.4	244	28,926	8.4	185	8,229	22.5	1	567	*
25 - 29	450	46,131	9.8	298	39,034	7.6	143	6,239	22.9	7	840	8.3
30 - 39	486	37,234	13.1	315	31,378	10.0	162	4,961	32.7	8	881	9.1
40 or More	22	1,158	19.0	14	907	15.4	8	198	40.4	-	53	-
Not Stated	17	649	26.2	5	598	*	10	44	227.3	-	4	-

¹ Race not stated included in total columns only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

white fetuses and infants and with mothers 15-19 years of age for black fetuses and infants. The overall perinatal mortality rate for fetuses and infants of races other than black and white was 17.8 percent less than the white infant and fetus rate, and 70.0 percent less than the rate for black fetuses and infants.

The perinatal death rate was over thirty times higher for fetuses and infants whose mothers had less than 5 prenatal visits than for those whose mothers had 15-19 visits (Table 2.77). The rate of death associated with 5-9 prenatal visits was 6 times higher than the rate for the lowest risk category (15-19 visits).

For both white and black fetuses and infants the highest mortality rates were associated with mothers who received less than 5 prenatal visits. The perinatal death rates were higher for black fetuses and infants than for white fetuses and infants for every category of the number of prenatal care visits where sufficient data were available to calculate rates. The highest differential was 111.1 percent when the mother had 10-14 visits. The differential was least for the 15-19 visits category where the black perinatal mortality rate was 5.7 percent more than the white rate.

The perinatal death rates increased for mothers with less than adequate prenatal care. The death rate was 4.5 times higher for mothers with inadequate care than for mothers with adequate care (36.1 vs. 8.1 deaths per 1,000 live births and fetal deaths, respectively). The perinatal death rate of black fetuses and infants of mothers with adequate care was 2.2 times as high as the rate for white fetuses and infants. The rate for black fetuses and infants of mothers with inadequate care was 3.1 times the rate for white fetuses and infants of mothers with inadequate care and 2.1 times higher than the rate for fetuses and infants of races other than black or white with inadequate prenatal care (Table 2.78).

The median birth weight of infants born in 1988 and dying prior to 1 year of age was 1,291 grams (Table 2.79). The median birth weight of all Michigan resident live births in 1988 was 3,388 grams. For all maternal age groups, the median birth weight for infant deaths was well below the overall median birth weight for liveborn infants in 1988.

Infant death rates by race, birth weight and age at death are displayed in Table 2.80 for

Table 2.77
Perinatal Deaths, Total Births and Perinatal Death Rates by Prenatal Visits and Race¹ of Infant or Fetus
Births to Michigan Residents in 1988

Number of Visits	All Infants			White Infants			Black Infants			All Other Infants		
	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate
Total	1,687	140,396	12.0	1,006	111,469	9.0	649	26,290	24.7	19	2,565	7.4
No Care	190	1,755	108.3	53	734	72.2	133	1,000	133.0	3	17	•
1 - 4	362	3,455	104.8	197	2,045	96.3	160	1,311	122.0	3	94	•
5 - 9	500	23,823	21.0	361	18,338	19.7	129	4,922	26.2	9	554	16.2
10 - 14	359	85,555	4.2	252	70,057	3.6	106	13,998	7.6	-	1,469	-
15 - 19	65	18,430	3.5	50	14,361	3.5	14	3,770	3.7	1	294	•
20 or More	21	4,449	4.7	18	3,591	5.0	3	779	•	-	78	-
Unknown	190	2,929	64.9	75	2,343	32.0	104	510	203.9	3	59	•

¹ Race not stated included in total columns only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

infants born in 1988. While the overall infant death rate for black infants was 2.7 times that of white infants, the rate for black infants was only 12.3 percent higher than for white infants born weighing 1,500 grams or less. The rate for white infants weighing 1,501-2,499 grams was 4.3 percent higher than the comparable

rate for black infants. For infants weighing 2,500 grams or more the rate for black infants exceeded by 40.5 percent that for white infants. A large part of the difference between infant death rates for white and black infants was due to the fact that a greater proportion of the black infants were born at weights

Table 2.78
Perinatal Deaths, Total Births and Perinatal Death Rates by Level of Prenatal Care and Race¹ of Infant or Fetus
Births to Michigan Residents in 1988

Level of Care (Kessner Index ²)	All Infants			White Infants			Black Infants			All Other Infants		
	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate	Perinatal Deaths	Total Births	Perinatal Death Rate
Total	1,687	140,396	12.0	1,006	111,469	9.0	649	26,290	24.7	19	2,565	7.4
Adequate	820	101,286	8.1	581	83,809	6.9	235	15,724	14.9	3	1,721	*
Intermediate	394	26,853	14.7	240	19,404	12.4	141	6,861	20.6	8	578	13.8
Inadequate	320	8,867	36.1	121	5,716	21.2	192	2,944	65.2	6	197	30.5
Unknown	153	3,390	45.1	64	2,540	25.2	81	761	106.4	2	69	*

¹ Race not stated included in total columns only.

² The Kessner Index is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e., for shorter pregnancies, fewer prenatal visits constitute adequate care).

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.79
Infant Deaths by Birth Weight and Mother's Age¹
Michigan Resident Infants Born in 1988

Birth Weight in Grams	Mother's Age						
	Total	Under 15	15-19	20-24	25-29	30-39	40 or More
Total	1,599	14	288	429	421	416	21
500 or Less	335	2	61	89	79	97	5
501 - 1,000	389	5	77	99	92	112	2
1,001 - 1,500	110	4	26	23	26	30	-
1,501 - 2,000	109	-	19	27	22	37	3
2,001 - 2,499	128	-	19	35	37	32	4
2,500 - 3,000	155	1	25	49	43	33	3
3,001 - 3,500	195	1	31	68	61	32	1
3,501 - 4,000	119	1	21	29	41	24	3
4,001 - 4,500	30	-	5	6	8	11	-
4,501 or More	13	-	-	1	7	5	-
Not Stated	16	-	4	3	5	3	-
Median Weight	1,291	946	1,106	1,587	1,687	992	2,013

¹ Age not stated included in total column only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.80
**Live Births by Birth Weight and Race of Infant and Infant Deaths and
 Infant Death Rates by Birth Weight, Age at Death, and Race of Infant**
 Michigan Resident Infants Born in 1988

Birth Weight	Race of Infant	Live Births	Age at Death					
			Under 1 Year		Under 28 Days		28 - 364 Days	
			Number	Rate	Number	Rate	Number	Rate
Total	All Races	139,635	1,599	11.5	1,093	7.8	504	3.6
	White	110,982	964	8.7	632	5.7	331	3.0
	Black	26,034	609	23.4	443	17.0	166	6.4
	All Other ¹	2,556	20	7.8	13	5.1	7	2.7
Less Than 1,501 Grams	All Races	2,032	834	410.4	745	366.6	88	43.3
	White	1,069	415	388.2	369	345.2	46	43.0
	Black	936	408	435.9	366	391.0	42	44.9
	All Other ¹	23	7	304.3	7	304.3	-	-
1,501-2,499 Grams	All Races	8,205	237	28.9	142	17.3	94	11.5
	White	5,295	153	28.9	101	19.1	51	9.6
	Black	2,782	77	27.7	37	13.3	40	14.4
	All Other ¹	124	6	48.4	3	*	3	*
2,500 Grams Or Greater	All Races	129,367	512	4.0	192	1.5	320	2.5
	White	104,600	388	3.7	155	1.5	233	2.2
	Black	22,309	116	5.2	33	1.5	83	3.7
	All Other ¹	2,407	7	2.9	3	*	4	*
Unknown Birthweight	All Races	31	16	516.1	14	451.6	2	*
	White	18	8	444.4	7	388.9	1	*
	Black	7	8	*	7	1,000.0	1	*
	All Other ¹	2	-	-	-	-	-	-

¹ Race not stated included in total rows only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

below 2,500 grams (14.3 percent for black infants compared to 5.7 percent for white infants).

Differentials in death rates by race for deaths under 28 days (neonatal deaths) and from 28-364 days (postneonatal deaths) departed somewhat from the pattern noted for all infant deaths. For infants weighing less than 1,501 grams, the neonatal rate for black infants was 13.3 percent greater than for white infants. The postneonatal rate for black infants, however, was 4.4 percent higher than the comparable rate for white infants. The

neonatal rate for white infants weighing 1501-2,499 grams was 43.6 percent greater than the comparable rate for black infants while the postneonatal death rate for black infants in this birth weight category exceeded the comparable rate for white infants by 50.0 percent. For infants weighing 2,500 grams or more at birth, the neonatal rates were similar for black and white infants. The postneonatal black infant death rate was greater by 68.2 percent than the white postneonatal infant death rate for infants weighing 2,500 grams or more at birth.

COMMUNICABLE DISEASE DEATHS

Although comprising a smaller proportion of deaths than they have in the past, communicable disease deaths continue to be a public health concern. In 1989, deaths from all infectious and parasitic diseases numbered 1,168. As can be observed from Table 2.81, over 44.4 percent of these deaths were caused by septicemia (519 deaths). There were 329 deaths (28.2 percent) attributable to HTLV-III/LAV infection ("AIDS"). Mycoses and tuberculosis caused 84 and 44 deaths, respectively. When deaths attributed to late effects of tuberculosis are included, the number of deaths from tuberculosis rises to 48. The number of AIDS deaths in 1989 was 52.3 percent higher than the 216 deaths reported in 1988.

The distribution of infectious and parasitic disease deaths by age, race, and sex for 1989 is given in Table 2.82, and the corresponding death rates are shown in Table 2.83. Note that deaths to black persons accounted for 19.0 percent of all infectious and parasitic disease deaths but only 15.2 percent of deaths from all causes. The death rates were highest for persons aged 65 years and over (51.4 deaths per 100,000 population) and for infants under 1 year (24.0). Rates for black males were highest, followed by those for black females, white males and white females, respectively.

Deaths due to such diseases as diphtheria, scarlet fever, streptococcal sore throat, small pox, typhoid fever, measles, poliomyelitis and others have been virtually eliminated not only in Michigan, but across the nation. Table 4.7 illustrates trends in deaths from the major communicable diseases.

Table 2.81
Deaths from Selected Infectious and Parasitic Diseases
Michigan Residents, 1989

ICD List ¹ Number	Cause of Death	Frequency
038	Septicemia	519
042-044	HTLV-III/LAV Infection (AIDS)	329
110-118	Mycoses	84
010-018	Tuberculosis	44
070	Viral Hepatitis	27
135	Sarcoidosis	22
136.3	Pneumocystosis	23
046	Slow Virus Infection of Central Nervous System	7
040.0	Gas Gangrene	5
036	Meningococcal Infection	7
054	Herpes Simplex	5
053	Herpes Zoster	3
137	Late Effects of Tuberculosis	4
052	Chickenpox	3
Residual 000-139	All Other Infectious and Parasitic Diseases	86
Total		1,168

¹ Detailed list of the 9th revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

INJURY AT WORK

There were 148 deaths reported as resulting from injuries at work in 1989, 22 less than in 1988 (Table 2.84). These include all cases in which the underlying cause of death was external and the injury was reported to have occurred at work, whether or not the injury was work-related.

Table 2.84 gives the frequency of deaths due to injuries at work by place of occurrence. The most common sites were industrial places and premises with 50 deaths. Injuries on streets and highways caused 38 deaths followed by injuries in public buildings with 24 deaths. There were 7 deaths from injuries taking place on farms and 6 deaths from injuries taking place in the home.

Table 2.82
Deaths Due to Infectious and Parasitic Diseases by Age, Race and Sex
Michigan Residents, 1989

Age	Total	Male			Female		
		White	Black	Other Races	White	Black	Other Races
All Ages	1,168	476	222	3	323	141	2
Under 1 Year	34	10	9	-	7	8	-
1 - 19 Years	14	7	3	-	1	3	-
20 - 44 Years	356	158	135	1	21	41	-
45 - 64 Years	198	94	39	1	35	27	2
65 or Over	566	207	36	1	259	62	-

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.83
Infectious and Parasitic Disease Death Rates by Age, Race and Sex
Michigan Residents, 1989

Age	Total	Male			Female		
		White	Black	Other Races	White	Black	Other Races
All Ages	12.6	12.3	38.4	*	8.0	21.7	*
Under 1 Year	24.0	17.4	69.1	*	12.8	62.9	*
1 - 19 Years	0.5	0.9	*	*	*	*	*
20 - 44 Years	9.8	8.5	60.4	*	1.4	15.7	*
45 - 64 Years	11.1	12.3	45.8	*	4.3	25.4	*
65 or Over	51.4	51.0	85.3	*	44.2	102.8	*

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 2.84
Deaths Due to Injury at Work
by Place of Injury
Michigan Residents, 1989

Place	Number of Deaths
Industrial Place and Premises	50
Street and Highway	38
Public Building	24
Farm	7
Home	6
Mine and Quarry	3
Resident Institution	3
Place for Recreation and Sport	1
Other Specified Places	14
Place Not Specified	2
Total	148

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The most frequent cause of death associated with injuries at work was motor vehicle traffic accidents which resulted in 27 deaths or 18.2 percent of all such deaths (Table 2.85). The second most common causes were homicide and legal intervention and accidents caused by machinery, each accounting for 22 deaths and 14.9 percent of the total. Accidental falls accounted for 19 deaths.

Table 2.85
Deaths Due to Injury at Work by Cause
of Death
Michigan Residents, 1989

ICD List ¹ Number	Cause of Death	Number of Deaths	%
E810-E819	Motor Vehicle Traffic Accidents	27	18.2
E960-E978	Homicide and Legal Intervention	22	14.9
E919	Accidents Caused by Machinery	22	14.9
E880-E888	Accidental Falls	19	12.8
E925	Accidents Caused by Electric Current	10	6.8
E860-E869	Accidental Poisoning Caused by Gases & Vapors	8	5.4
E840-E845	Air and Space Transport Accidents	7	4.7
E928	Other & Unspecified Environmental & Accidental Causes	7	4.7
E950-E959	Suicide	7	4.7
E923	Accidents Caused by Explosive Material	5	3.4
E913	Accidental Mechanical Suffocation	3	2.0
E916	Struck Accidentally by Falling Object	2	1.4
E820-E825	Motor Vehicle Nontraffic Accidents	2	1.4
Residual			
E800-E949	All Other Accidents	7	4.7
Total		148	100.0

¹ Detailed List of the 9th Revision of the International Classification of Diseases, WHO.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

LIFE EXPECTANCY

The life expectancy of a Michigan resident at birth was 74.7 years, based on 1989 mortality and population data. Females demonstrated a significantly greater longevity than males. In 1989 the life expectancy at birth was 71.6 years for males and 77.7 years for females. This results from the higher mortality rates of males at all ages.

Life expectancies by sex in selected years for Michigan and United States residents are presented in Table 2.86. It can be seen that longevity has increased greatly in Michigan since 1901, by 18.2 years for males and by 22.6 years for females. Females born in Michigan

Table 2.86
Life Expectancy at Birth by Sex
Michigan and United States Residents
Selected Years, 1901 - 1989³

United States		Year	Michigan	
Male	Female		Male	Female
47.6	50.6	1901	53.4	55.1
48.4	51.8	1910	53.9	56.2
53.6	54.6	1920	55.1 ¹	56.0 ¹
58.1	61.6	1930	59.8 ¹	62.8 ¹
60.8	65.2	1940	63.4 ¹	67.4 ¹
65.6	71.1	1950	65.7	71.2
66.6	73.1	1960	67.1	73.3
67.1	74.7	1970	67.2	74.6
67.4	75.0	1971	67.3	74.9
67.4	75.1	1972	67.3	74.9
67.6	75.3	1973	67.4	75.0
68.2	75.9	1974	68.0	75.3
68.8	76.6	1975	68.5	75.7
69.1	76.8	1976	69.0	75.9
69.5	77.2	1977	69.3	76.3
69.6	77.3	1978	69.5	76.4
70.0	77.8	1979	70.0	76.8
70.0	77.4	1980	70.0	76.9
70.4	77.8	1981	70.3	77.1
70.9	78.1	1982	70.6	77.4
71.0	78.1	1983	70.7	77.4
71.2	78.2	1984	70.8	77.2
71.2	78.2	1985	70.6	77.4
71.3	78.3	1986	70.7	77.4
71.5	78.4	1987	71.1	77.4
71.4	78.3	1988	71.3	77.6
71.8 ²	78.5 ²	1989	71.6	77.7

¹ Michigan data for years 1920, 1930 and 1940 are for white persons only.

² Provisional data.

³ Data for 1981-1985 have been revised.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

in 1901 could expect to live 1.7 years longer than their male counterparts. By 1950 the differential in life expectancy between the sexes was 5.5 years. This disparity increased to 7.6 years by 1971, remained constant through 1973, and by 1989 had declined to 6.1 years. Between 1979 and 1989 life expectancy increased by 1.6 years for males and 0.9 years for females.

The life expectancy of Michigan residents was well above that for the nation in 1901, but this differential had virtually disappeared by 1950. From 1971 to 1979 both males and females in Michigan had a slightly lower life expectancy than males and females in the nation. In 1980 the life expectancy of males in Michigan was equal to that for males nationwide, at 70.0 years, while longevity for females residing in this state was 0.5 years below the average for the country.

Between 1981 and 1989 both males and females in Michigan again had lower life expectancy than both sex groups in the nation. By 1989 the life expectancies of males and females in Michigan were 0.2 and 0.8 years,

respectively, below the national provisional life expectancy. Note that females have consistently demonstrated greater longevity than males both in Michigan and in the United States.

White persons displayed a life expectancy 8.3 years greater than persons of all other races in 1989. The life expectancy of white males was 9.9 years greater than all other males in 1989 compared to a differential of 5.8 years in 1950 (Table 2.87). In 1970 the differential was 7.2 years, due in part to an actual reduction in life expectancy for all other males between 1960 and 1970. Life expectancy for males of all other races increased from 61.0 in 1970 to 65.3 years in 1982 and 1983 and

Table 2.87
Life Expectancy at Birth by Sex and Race
Michigan Residents, Selected Years, 1950 - 1989¹

Population Subgroup	Year												
	1950	1960	1970	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total Population	68.3	70.0	70.8	73.4	73.7	74.0	74.1	74.1	74.0	74.1	74.2	74.5	74.7
Total Male	65.7	67.1	67.2	70.0	70.3	70.6	70.7	70.8	70.6	70.7	71.1	71.3	71.6
Total Female	71.2	73.3	74.6	76.9	77.1	77.4	77.4	77.2	77.4	77.4	77.4	77.6	77.7
Total White	68.8	70.5	71.6	74.3	74.4	74.8	74.9	75.0	74.9	75.1	75.3	75.6	75.9
White Male	66.2	67.5	68.2	71.0	71.1	71.5	71.6	71.8	71.7	71.9	72.4	72.6	73.1
White Female	71.9	74.0	75.3	77.6	77.7	78.0	78.1	78.0	78.1	78.2	78.2	78.5	78.8
Total All Other	61.8	65.6	65.0	68.5	69.3	69.6	69.5	68.9	68.6	68.2	68.5	68.4	67.6
All Other Male	60.4	63.6	61.0	64.3	65.2	65.3	65.3	64.7	64.0	63.8	64.0	64.2	63.2
All Other Female	63.4	67.7	69.4	72.7	73.4	73.8	73.7	73.0	73.2	72.7	73.0	72.5	71.9

¹ Data for 1981-1985 have been revised.

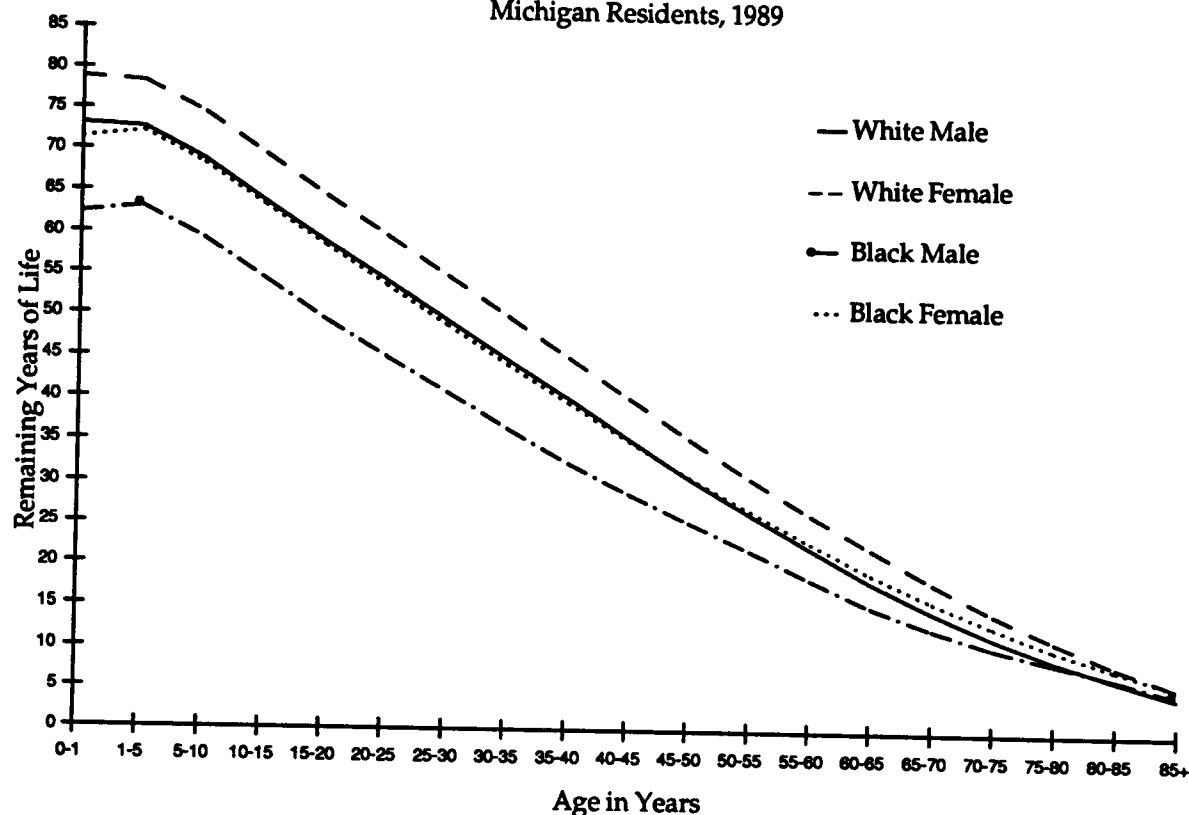
decreased to 63.2 in 1989, while the life expectancy for white males rose from 68.2 in 1970 to 73.1 years in 1989. This is a reflection of the decline in mortality rates for several leading causes of death for these groups prior to 1981.

The differential by race for female life expectancies has generally declined over the 1950-1989 period. In 1950, Michigan resident white females had an average longevity 8.5 years greater than females of all other races. This disparity declined to 4.9 years by 1980 and increased to 6.9 years by 1989. Life expectancy generally increased for white females between 1950 and 1989, but it peaked for all other females in 1982 and has generally declined since then.

During the period 1980 through 1989, the life expectancy of white males and females increased by 3.0 and 1.5 percent, respectively; while the life expectancy of other than white males and females decreased by 1.7 and 1.1 percent.

The expected number of years of life remaining are presented graphically by age, race, and sex in Figure 2.51. The number of years of life remaining for females was greater than that for males throughout life. The average number of years remaining for white males and females surpassed or equaled that of their black counterparts for all age groups. However, black persons displayed similar life expectancies with their white counterparts in age intervals over 69 years.

Figure 2.51
Remaining Years of Life by Age, Sex and Race
Michigan Residents, 1989



PLACE OF OCCURRENCE

There were 1,976 Michigan resident deaths in 1989 that occurred outside the state. This represents 2.5 percent of all resident deaths. Of the 1,976 deaths among Michigan residents 584 (29.6 percent) occurred in the state of Florida, more than in any other state. The state with the second highest number of Michigan resident deaths was Ohio with 20.7 percent (409 deaths). The border areas of Illinois, Indiana, Ohio and Canada accounted for 40.0 percent of all resident deaths outside Michigan. In addition to the above-mentioned areas, over 50 Michigan resident deaths occurred in Texas, Arizona and Minnesota. Michigan resident deaths occurred in 46 of the 50 states in 1989, the District of Columbia, and Canada (Table 2.88).

Of the 1,117 non-residents that died in Michigan in 1989, 46.1 percent were from the border areas while 24.5 percent were Floridians. Overall, non-residents who died in Michigan were residents of 44 states, the District of Columbia, Canada and at least six foreign countries.

YEARS OF POTENTIAL LIFE LOST

Another measure of the impact that causes of death have on a population, the years of potential life lost below age 65, is used by the National Centers for Disease Control. The years of potential life lost is calculated as the number of years between the age at death and 65 years of age for persons dying before their 65th year.

Table 2.89 includes the years of potential life lost to the Michigan population in 1989 for the ten leading causes of death and selected other causes, as well as the rankings of these causes based on years of potential life lost for Michigan in 1988 and 1989 and the United States in 1988, the most recent year for which

Table 2.88
Michigan Resident Deaths
Occurring Outside Michigan by Place of Occurrence and Occurring in Michigan to Non-Michigan Residents by Place of Residence, 1989

Geographic Area	Residents Occurring Outside Michigan		Non-Residents Occurring In Michigan	
	Number	Percent	Number	Percent
Total	1,976	100.0	1,117	100.0
Florida	584	29.6	274	24.5
Ohio	409	20.7	160	14.3
Indiana	301	15.2	83	7.4
Texas	83	4.2	25	2.2
Arizona	79	4.0	14	1.3
Illinois	78	3.9	97	8.7
Minnesota	59	3.0	13	1.2
California	46	2.3	24	2.1
Tennessee	37	1.9	19	1.7
Georgia	26	1.3	16	1.4
New York	25	1.3	29	2.6
Pennsylvania	25	1.3	18	1.6
Canada	3	0.2	27	2.4
Wisconsin	—	—	148	13.2
Other Areas	221	11.2	170	15.2

Source: Office of the State Registrar and Center for Health Statistics, MDPH

ranking was available. Accidents, with 76,145 total years lost in Michigan, was the leading cause of years of potential life lost in both Michigan and the United States. Homicide and suicide, combined, ranked third in Michigan and fourth in the United States. Three causes, congenital anomalies, prematurity and sudden infant death syndrome (SIDS), associated with infancy, ranked as the fifth, sixth and seventh leading causes of potential life lost, respectively, in Michigan.

Rankings of the leading causes of potential life lost were reasonably similar for Michigan and the United States with the exception of AIDS. For Michigan, AIDS was the 12th leading cause of years of potential life lost in 1988. In 1989, AIDS was ranked 10th in Michigan. For the United States, AIDS ranked sixth as a cause of years of potential life lost in 1988.

Besides the difference in ranking noted for AIDS, other changes occurred in the Michigan rankings of leading causes of years of potential life lost between 1988 and 1989. Between 1988 and 1989 prematurity and congenital anomalies exchanged rankings. Diabetes mellitus which was 12th in 1987 and 10th in 1988 returned to the 12th ranking in 1989.

For causes of death listed in Table 2.89, Michigan males lost more potential years of life than Michigan females for all causes of death except malignant neoplasms (cancer) and cerebrovascular disease. The ranking of

the leading causes of years of potential life lost was different from the ranking of numbers of deaths presented in Table 2.89. Diseases of the heart was the leading cause of death but was the fourth leading cause of years of potential life lost. Accidents and adverse effects, which was the fourth leading cause of death, was the leading cause of years of potential life lost. Chronic obstructive pulmonary disease, diabetes mellitus, pneumonia and influenza, and atherosclerosis, which were among the ten leading causes of death, were not among the ten leading causes of years of potential life lost.

Table 2.89
Years of Potential Life Lost Below Age 65
Due to the Ten Leading Causes of Death and Selected Other Causes
Michigan Residents, 1989

1989 Rank	Cause of Death	Years of Potential Life Lost			1988 Rank	
		Total ¹	Male	Female	Mich.	U.S. ²
1	Accidents and Adverse Effects	76,145	52,757	23,388	1	1
2	Malignant Neoplasms	69,939	34,881	35,038	2	2
3	Homicide/Suicide	59,842	48,433	11,409	3	4
4	Diseases of the Heart	56,967	40,151	16,811	4	3
5	Prematurity ³	28,621	16,180	12,312	6	7
6	Congenital Anomalies	23,172	11,611	11,367	5	5
7	Sudden Infant Death Syndrome	16,497	9,030	7,467	7	8
8	Chronic Liver Disease and Cirrhosis	11,365	8,300	3,065	8	10
9	Cerebrovascular Diseases	10,138	5,054	5,084	9	9
10	HTLV-III/LAV Infection (AIDS)	8,846	8,097	749	12	6
11	Pneumonia and Influenza	6,862	3,825	3,037	11	11
12	Diabetes Mellitus	6,779	3,765	3,014	10	12
13	Chronic Obstructive Pulmonary Diseases and Allied Conditions	5,268	2,759	2,509	13	13
14	Atherosclerosis	295	230	65	14	4
	All Other	87,176	50,488	36,598		

¹ Total includes data for individuals with sex unspecified.

² U.S. rankings based on a 10 percent sample of provisional data.

³ Codes 765 and 769, detailed list of the 9th revision of the *International Classification of Diseases*, WHO.

⁴ Not reported by CDC.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

MARRIAGE & DIVORCE

SECTION III



MARRIAGE AND DIVORCE

AN OVERVIEW, 1989

Total Marriages	76,210
Total Divorces and Annulments	40,276
Marriage Rate ¹	16.4
Divorce Rate ¹	8.7
Median Age of the Bride	26
Median Age of the Groom	28

¹ Number of persons married or divorced per 1,000 population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

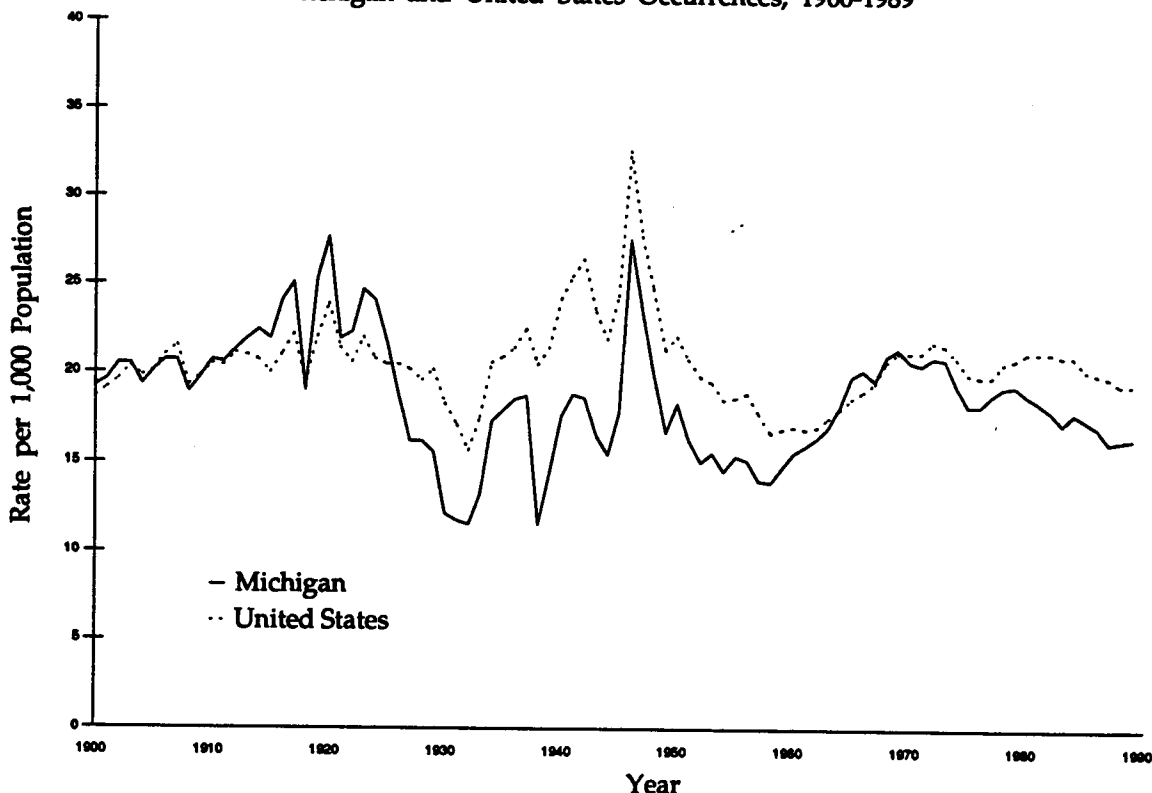
The number of marriages and divorces occurring in Michigan has increased considerably since 1900. While the frequency of

marriage has generally followed the growth of Michigan's population, the rate of persons dissolving their marriages has increased over fourfold since 1900.

The smallest number of marriages in the years 1900 to 1989 was 23,295 in 1900, while the largest number was 94,486 in 1973 (Table 3.1). The number in 1989 was 76,210. The marriage rate was 16.4 per 1,000 population (Figure 3.1).

The number of divorces and annulments increased from a low of 2,435 in 1900 to a high of 45,047 in 1980. In 1989 the number of divorces and annulments was 40,276. The divorce rate was 8.7 per 1,000 populations.

Figure 3.1
Marriage Rates
 Michigan and United States Occurrences, 1900-1989¹



¹ United States rates for 1987 and 1988 are provisional.

Table 3.1
Marriages and Marriage Rates¹
Michigan and United States Occurrences
 Selected Years, 1900 - 1989

United States		Year	Michigan	
Number	Rate		Number	Rate
709,000	18.6	1900	23,295	19.2
948,000	20.5	1910	29,039	20.7
1,274,476	23.9	1920	50,805	27.7
1,126,856	18.3	1930	29,482	12.2
1,595,879	24.2	1940	46,342	17.6
1,667,231	22.1	1950	58,180	18.3
1,523,000	17.0	1960	61,090	15.6
1,548,000	16.9	1961	63,320	16.0
1,577,000	17.0	1962	65,002	16.4
1,654,000	17.5	1963	68,160	17.0
1,725,000	18.0	1964	73,911	18.2
1,800,000	18.6	1965	81,247	19.8
1,857,000	19.0	1966	83,903	20.2
1,927,000	19.5	1967	84,363	19.6
2,069,000	20.7	1968	90,984	21.0
2,145,000	21.2	1969	93,392	21.4
2,158,802	21.2	1970	91,933	20.7
2,190,481	21.2	1971	92,134	20.5
2,282,154	21.8	1972	94,447	20.9
2,284,108	21.6	1973	94,486	20.8
2,229,667	20.9	1974	88,023	19.3
2,152,662	20.0	1975	82,856	18.2
2,154,807	19.8	1976	82,753	18.2
2,178,367	19.8	1977	86,088	18.8
2,282,272	20.6	1978 ²	88,333	19.2
2,331,337	20.8	1979	89,450	19.3
2,390,252	21.2	1980	86,898	18.8
2,422,145	21.2	1981	85,252	18.4
2,456,278	21.2	1982	82,633	17.9
2,445,604	21.0	1983	78,910	17.2
2,477,192	21.0	1984	80,810	17.8
2,412,625	20.2	1985	79,022	17.4
2,407,099	20.0	1986	77,815	17.0
2,403,378	19.8	1987	74,418	16.2
2,389,000Pr.	19.4Pr.	1988	75,386	16.3
2,404,000Pr.	19.4Pr.	1989	76,210	16.4

¹ Number of persons married per 1,000 population.

² Beginning with 1978, marriage data for the United States include nonlicensed marriages registered in California. If nonlicensed marriages were included in the 1977 total, the marriage rate would increase from 19.8 to 20.1.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

MARRIAGES

Since 1900 there have been noticeable changes in the marriage rates both nationally and in Michigan (Figure 3.1). The marriage rates observed for the state have generally followed the pattern of rising and falling rates observed nationally. Strong historic shifts in rates have been related most notably to the factors of war and the economy. The highest rates observed during this century were for the years immediately following the end of the two World Wars (27.7 in 1920 and 27.6 in 1946). The lowest rates occurred during the Great Depression of the 1930's.

The number of persons married each year per 1,000 population was higher in Michigan than in the country for 19 of the 26 years from 1900 through 1925. Since 1926, Michigan's marriage rate has been lower than the national rate, except during 1964 through 1969.

The gap between the marriage rate for Michigan and that for the nation has increased in recent years. In 1977 the United States rate (including nonlicensed marriages registered in California) was 6.9 percent above that of Michigan. By 1980, this percent increased to 12.8 and in 1989 the provisional rate for the nation was 18.3 percent above Michigan's rate.

The marriage rate for Michigan in 1989 was 16.4, 0.6 percent higher than the 1988 rate of 16.3. The provisional rate for the nation in 1989 was 19.4.

RESIDENCE OF COUPLES MARRYING IN MICHIGAN

When presenting statistics of births, deaths and fetal deaths it is possible to provide total resident figures due to an interstate agreement for exchange of nonresident event information. Thus, should a Michigan resident give birth in some other state, the state will forward the information to Michigan. No such agreement exists for marriages. This is an important consideration when analyzing marriage statistics. The marriage data presented are drawn from all marriages performed in the state regardless of the couple's residence.

Table 3.2 indicates that, in general, most of the couples marrying in Michigan are residents of the state. For marriages occurring in Michigan in 1989, 95.4 percent of the brides were residents of Michigan, while 93.1 percent of the grooms were residents of the state.

Table 3.2
Marriages by Residence Status of Bride and Groom
Michigan Occurrences, 1979 and 1989

Residence Status	1979		1989	
	Number	Percent	Number	Percent
Both Bride and Groom Residents	84,171	94.1	70,317	92.3
Bride Resident, Groom Non-Resident	2,892	3.2	2,395	3.1
Groom Resident, Bride Non-Resident	643	0.7	575	0.8
Both Bride and Groom Non-Resident	1,739	1.9	2,921	3.8
Residence Status Not Stated	5	0.0	2	0.0
Total	89,450	100.0	76,210	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

These figures are slightly lower than those for marriages occurring in Michigan in 1979. Over the decade the proportion of marriages where both the bride and groom are not residents has increased slightly. These data indicate that the general characteristics of marriages occurring in Michigan should be representative of marriage patterns for Michigan residents.

There were a total of 3,496 non-resident brides married in Michigan in 1989. The figure for grooms was considerably greater than that of brides, numbering 5,316. Table 3.3 shows the most frequent residences of non-resident brides and grooms married in Michigan. The nearby states of Illinois, In-

diana, Ohio and Wisconsin were the states of residence for 35.0 percent of all non-resident grooms and 38.3 percent of non-resident brides. About twenty-five percent of the non-resident brides and grooms were from California, Florida, New York and Texas.

MONTH OF MARRIAGE

The number of marriages occurring in Michigan varies with the seasons (Table 3.4). The most popular months for marriages in 1989 were June and September, with 9,146 and 9,548 marriage ceremonies being performed during these months respectively. About 2 out of every 3 marriages occurred in the six

Table 3.3
Place of Residence of Non-Resident
Brides and Grooms
Marriages Occurring in Michigan, 1989

Geographic Area	Non-Resident Bride	Non-Resident Groom
Arizona	80	118
California	336	518
Colorado	79	115
Florida	263	357
Georgia	99	139
Illinois	515	693
Indiana	253	374
Minnesota	66	96
New York	119	199
North Carolina	51	99
Ohio	320	482
Texas	177	247
Virginia	85	141
Wisconsin	252	311
Other U.S. Places	662	1,181
Foreign Countries	139	248
Total	3,496	5,318

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 3.4
Marriages by Month
Michigan Occurrences, 1989

Month	Number	Percent
January	2,480	3.3
February	3,410	4.5
March	3,658	4.8
April	6,060	8.0
May	7,705	10.1
June	9,146	12.0
July	8,005	10.5
August	8,896	11.7
September	9,548	12.5
October	7,164	9.4
November	4,836	6.3
December	5,302	7.0
January - December	76,210	100.0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

months between May and October. Fewer marriages occurred during the winter months. The lowest figure was for January, with 26.0 percent of the number which occurred in September (Table 3.4).

AGE AT MARRIAGE

Examination of the data in Table 3.5 reveals that females generally marry at a younger age than do males. The number of females who marry before the age of 20 was 2.6 times the corresponding number of males in 1989. Between ages 20 and 24, 24.5 percent more brides than grooms married. Among persons 25 and over, males married more frequently than females. The median age of brides (26 years) marrying in Michigan was two years

lower than the median age for grooms (28 years).

Since 1979, there have been significant declines in the marriage rates for persons of both sexes under the age of 25 years. The largest decline observed was for males under the age of 20 years for whom the marriage rate has dipped 53.6 percent. The comparable decline for females was 49.6 percent. The marriage rate declined by 40.3 percent and 23.2 percent respectively for males and females between the ages of 20 and 24. For males between the ages of 25 and 34 the rate of marriage has decreased by 14.7 percent since 1979. For females within the same age category, the rate of marriage has increased 12.2 percent. For individuals between 35 and 44 years of age, the marriage rate for males

Table 3.5
Number of Marriages and Marriage Rates¹ by Age and Sex
Michigan Occurrences, 1979 and 1989

Age in Years	Males			Females		
	Rate 1979	Number of Marriages 1989	Rate 1989	Rate 1979	Number of Marriages 1989	Rate 1989
Under 20 ²	16.8	2,843	7.8	42.5	7,501	21.4
20 - 24	90.1	20,247	53.8	88.2	25,214	67.7
25 - 34	51.6	33,679	44.0	32.9	28,782	36.9
35 - 44	16.1	11,548	17.7	13.7	9,644	14.2
45 or Over	6.2	7,893	6.0	3.7	5,069	3.2
Not Stated	000	—	000	000	—	000
Total	19.8	76,210	16.9	19.1	76,210	16.0
Median Age at Last Birthday	28			26		

¹ Number of persons married per 1,000 population.

² 15 - 19 population used to obtain rate.

and females increased. The rates for persons 45 and over were about the same for males and somewhat lower for females.

FIRST MARRIAGES

First marriages are an interesting component of all marriages in that they constitute an event that can never be duplicated. The frequency of first marriages can not be directly affected by rates of divorce or deaths to married persons and as such reflects the propensity of the population as a whole to enter into marital agreements.

There has been a general decline in both the number and rate of first marriages between 1979 and 1989. The number of first marriages dropped 17.4 percent for women and 15.3 percent for men. The rate of first marriages dropped by 19.1 percent for women and 15.3 percent for men (Tables 3.6).

Changes in the frequency of first marriages have varied in different age groups. The

greatest decline in first marriages occurred in the under 20 age group for both brides and grooms, between 1979 and 1989. The number of first marriages in the under 20 age group dropped by 62.0 percent for brides and by 64.1 percent for grooms between 1979 and 1989 while the corresponding rate of first marriages dropped 49.4 percent for brides and 53.6 percent for grooms. The number and rate of first marriages also declined for brides and declined substantially for grooms in the 20-24 year age group.

There were significant increases in the number and rate of first marriages of both brides and grooms between ages 25 and 44. Between 1979 and 1989 the number of first marriages increased by 31.1 percent, 99.0 percent, 138.6 percent and 63.3 percent for grooms aged 25-29, 30-34, 35-39 and 40-44 years, respectively. For brides the comparable figures were 70.4 percent, 165.5 percent, 197.3 percent and 90.4 percent. Since 1979 the number of first marriages has increased slightly for persons aged 45 to 49 and declined for persons aged 50 or over.

Table 3.6
Number of First Marriages and Rates by Age of Bride and Groom
Michigan Occurrences 1979 and 1989

Ages	1979				1989			
	Bride		Groom		Bride		Groom	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Ages . . .	61,281	13.1	59,356	13.1	50,612	10.6	50,261	11.1
15 - 19	19,531	41.9	7,906	16.8	7,429	21.2	2,840	7.8
20 - 24	31,260	78.0	32,501	84.7	23,482	63.1	19,563	51.9
25 - 29	8,059	24.2	13,924	35.5	13,735	35.1	18,255	47.3
30 - 34	1,595	4.6	3,360	10.2	4,235	10.9	6,685	17.6
35 - 39	402	1.4	837	2.5	1,195	3.3	1,997	5.7
40 - 44	166	0.9	332	1.5	316	1.0	542	1.8
45 - 49	110	0.5	160	0.7	112	0.4	165	0.7
50 or Over . .	156	0.1	335	0.3	108	0.1	214	0.2
Not Stated . .	2	*	1	*	-	-	-	-

Source: Office of the State Registrar and Center for Health Statistics, MDPH

MEDIAN AGE AT FIRST MARRIAGE

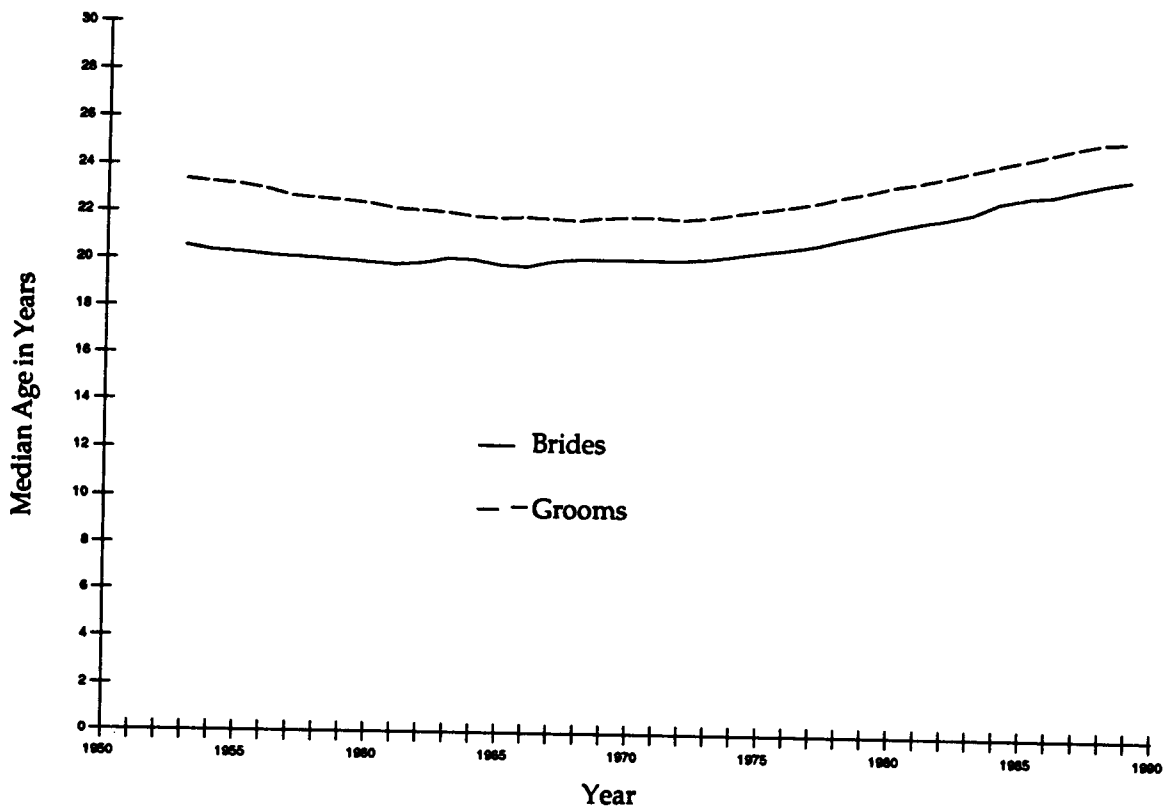
The median age at first marriage declined for both brides and grooms between 1953 and the mid-1960's (Figure 3.2). The initial decline was greater for males than for females.

Grooms were 34 months older than brides at the median in 1953, 23 months older in 1963 and 20 months older in 1968. During the past fifteen years, the median age at first marriage has increased by about the same amount for both males and females. Grooms were 19

months older than brides at the median in 1989.

The median age at first marriage in 1989 was 23 years 10 months for brides and 25 years 5 months for grooms. The 1989 figure for brides is the highest median age at first marriage for brides recorded during the period 1953-1989. The 1989 figure for grooms equals the highest median age at first marriage for grooms, set in 1988, recorded in the period 1953-1989.

Figure 3.2
Median Age at First Marriage by Sex
Michigan Occurrences, 1953 - 1989



REMARRIAGES

The proportion of all marriages which were remarriages is displayed graphically in Figure 3.3 for the period 1960-1989. Between 1960 and 1965, the proportion of remarriages dropped. Since 1965, this proportion has increased. The increase in the period 1972 through 1975 was especially marked for both sexes. Between 1979 and 1989 the percent of all marriages that were remarriages increased from 31.5 to 33.5 for brides and from 33.6 to 34.0 for grooms (Tables 3.7 and 3.8).

The number of remarriages among females decreased by 9.2 percent between 1979 and 1989, while the number of brides who had been married at least three times previously increased by 11.8 percent. Total remarriages for grooms decreased by 13.8 percent and numbers of third or higher order marriages were about the same in 1979 and 1989.

As remarriages can only occur when a prior marriage has been terminated by a divorce, an annulment or the death of a spouse, it is apparent that persons remarrying will be generally older. Tables 3.7 and 3.8 demonstrate that the order of marriage has a strong positive relationship with the age of both brides and grooms. Note, however, the upward shift between 1979 and 1989 in the age distribution for first and higher order marriages for both brides and grooms.

The median age of brides at marriage for first marriages increased by two years during this period. For second, third or higher order marriages, the median age of brides at marriage increased by three years.

For grooms the median age increased two years for first marriages, three years for

Figure 3.3
Percent of All Marriages that are Remarriages
Michigan Occurrences, 1960 - 1989

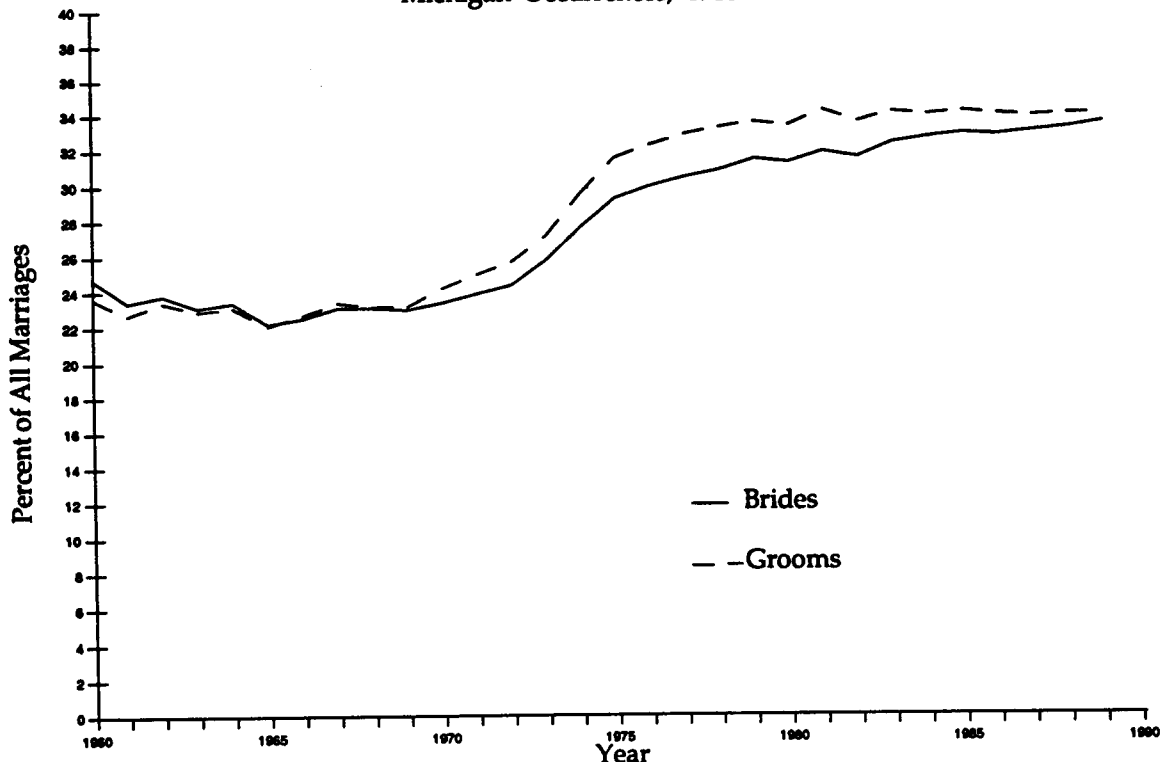


Table 3.7
 Number of Marriages of Brides by Age and Order of Marriage
 Michigan Occurrences, 1979 and 1989

Ages	1979					1989				
	All Marriages	First Marriages	Percent First Marriages	Second Marriages	Third or More Marriages	All Marriages	First Marriages	Percent First Marriage	Second Marriage	Third or More Marriages
All Ages	89,450	61,281	68.5	22,278	5,870	76,210	50,612	66.4	19,502	6,052
Under 20	19,787	19,531	98.7	238	7	7,501	7,429	99.0	66	-
20-24	35,349	31,260	88.4	3,876	210	25,214	23,482	93.1	1,661	59
25-29	15,165	8,059	53.1	6,274	830	18,740	13,735	73.3	4,539	449
30-34	7,254	1,595	22.0	4,434	1,223	10,042	4,235	42.2	4,672	1,131
35-39	3,970	402	10.1	2,504	1,064	5,987	1,195	20.0	3,333	1,457
40-44	2,493	166	6.7	1,522	804	3,657	316	8.6	2,161	1,179
45 or More	5,430	266	4.9	3,430	1,732	5,069	220	4.3	3,070	1,777
Not Stated	2	2	100.0	-	-	-	-	-	-	-
Median Age at Last Birthday	23	21	-	30	36	26	23	-	33	39

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 3.8
 Number of Marriages of Grooms by Age and Order of Marriage
 Michigan Occurrences, 1979 and 1989

Ages	1979					1989				
	All Marriages	First Marriages	Percent First Marriages	Second Marriages	Third or More Marriages	All Marriages	First Marriages	Percent First Marriage	Second Marriage	Third or More Marriages
All Ages	89,450	59,356	66.4	23,727	6,345	76,210	50,261	66.0	19,553	6,355
Under 20	7,941	7,906	99.6	25	-	2,843	2,840	99.9	3	-
20-24	34,544	32,501	94.1	1,992	48	20,247	19,563	96.6	662	6
25-29	20,165	13,924	69.1	5,725	516	21,634	18,255	84.4	3,168	195
30-34	9,908	3,360	33.9	5,357	1,188	12,045	6,685	55.5	4,624	730
35-39	5,361	837	15.6	3,362	1,161	6,987	1,997	28.6	3,794	1,195
40-44	3,459	332	9.6	2,136	989	4,561	542	11.9	2,634	1,384
45 or Over	8,069	495	6.1	5,128	2,443	7,893	379	4.8	4,668	2,845
Not Stated	3	1	33.3	2	-	-	-	-	-	-
Median Age at Last Birthday	25	23	-	33	41	28	25	-	36	43

Source: Office of the State Registrar and Center for Health Statistics, MDPH

second marriages, and two years for third and higher order marriages.

Changes in the frequency of remarriages have varied substantially in different age groups. Among persons under age 25 the number of remarriages declined between 1979 and 1989 by 58.8 percent for females and 67.5 percent for males. The number of brides between ages 25 and 29 who had previously been married decreased by 29.8 percent between 1979 and 1989, while that of grooms declined 46.1 percent.

The trends between 1979 and 1989 of delaying first marriages by two years and remarriages by three years combined with increased rates of first marriages after 24 years of age have resulted in the percent of marriages which are first marriages being higher in all age groups up to 45 years of age (Tables 3.7 and 3.8).

The most frequent age interval for remarriage among males was 30-34 years of age in 1979 and 1989. Among females in 1979 the most frequent age interval for remarriage was 25-29 years of age. It was 30-34 years of age in 1989.

DIVORCES AND ANNULMENTS

The number of reported divorces and annulments reached a record high in 1980, in Michigan and in 1981 in the nation (Table 3.9). Between 1980 and 1984, the Michigan frequency declined. The number then increased to 40,276 in 1989. The 1989 frequency was 10.6 percent below the 1980 frequency and 0.4 percent greater than the 1988 frequency. Nationally, the provisional number of divorces in 1989 was 4.1 percent below the record high figure set in 1981.

The number of divorces and annulments reported for Michigan in 1989 was 2.4 times the number for 1960. Between 1960 and 1970 the number of divorces and annulments increased by 79.7 percent. Between 1970 and 1975 the number of divorces and annulments increased by 36.2 percent, and from 1975 to 1980 the increase was 10.5 percent. During the latter period the first annual declines since 1963 occurred. The number of divorces and annulments declined steadily between 1980 and 1984, then increased again each year from 1985 through 1989.

The number of persons divorced in Michigan per thousand population generally increased from 2.0 in 1900 to the then century high of 5.1 in 1929, then declined between 1930 and 1933 to 3.1 (Figure 3.4). Between 1934 and 1946 the rate generally increased, peaking at 10.2 in 1946. The rate of divorces and annulments decreased to 3.6 in 1958, increased to a high of 9.8 in 1978, decreased to 8.3 in 1983 and increased to 8.7 in 1986, remaining at 8.7 through 1989.

The national rates generally followed the same pattern, reaching a provisional rate of 9.4 in 1989. Michigan's divorce rate was higher than that for the United States each year from 1900 through 1947. In the following 42 years the Michigan divorce rate has been

Table 3.9
**Number of Divorces and Annulments
 Divorce and Annulment Rates¹
 Michigan and United States Occurrences
 Selected Years, 1900 - 1989**

United States		Year	Michigan	
Number	Rate		Number	Rate
56,000	1.5	1900	2,435	2.0
83,000	1.8	1910	3,716	2.6
170,505	3.2	1920	8,679	4.7
195,961	3.2	1930	10,639	4.4
264,000	4.0	1940	12,054	4.6
385,144	5.1	1950	15,979	5.0
393,000	4.4	1960	16,656	4.3
414,000	4.5	1961	16,219	4.1
413,000	4.4	1962	17,500	4.4
428,000	4.5	1963	17,479	4.4
450,000	4.7	1964	19,400	4.8
479,000	4.9	1965	20,305	5.0
499,000	5.1	1966	21,727	5.2
523,000	5.3	1967	23,620	5.5
584,000	5.8	1968	25,400	5.9
639,000	6.3	1969	28,347	6.5
708,000	7.0	1970	29,934	6.7
773,000	7.5	1971	31,790	7.1
845,000	8.1	1972	35,505	7.9
915,000	8.7	1973	37,128	8.2
977,000	9.2	1974	39,940 ²	8.8 ²
1,036,000	9.6	1975	40,782	9.0
1,083,000	10.0	1976	43,101	9.5
1,091,000	9.9	1977	43,036	9.4
1,130,000	10.2	1978	45,029	9.8
1,181,000	10.5	1979	44,242	9.6
1,189,000	10.5	1980	45,047	9.7
1,213,000	10.6	1981	43,167	9.3
1,170,000	10.0	1982	39,739	8.6
1,158,000	9.8	1983	37,991	8.3
1,169,000	10.0	1984	37,563	8.3
1,190,000	10.0	1985	38,775	8.5
1,178,000	9.8	1986	39,553	8.7
1,166,000	9.6	1987	39,857	8.7
1,183,000Pr.	9.6Pr.	1988	40,103	8.7
1,163,000Pr.	9.4Pr.	1989	40,276	8.7

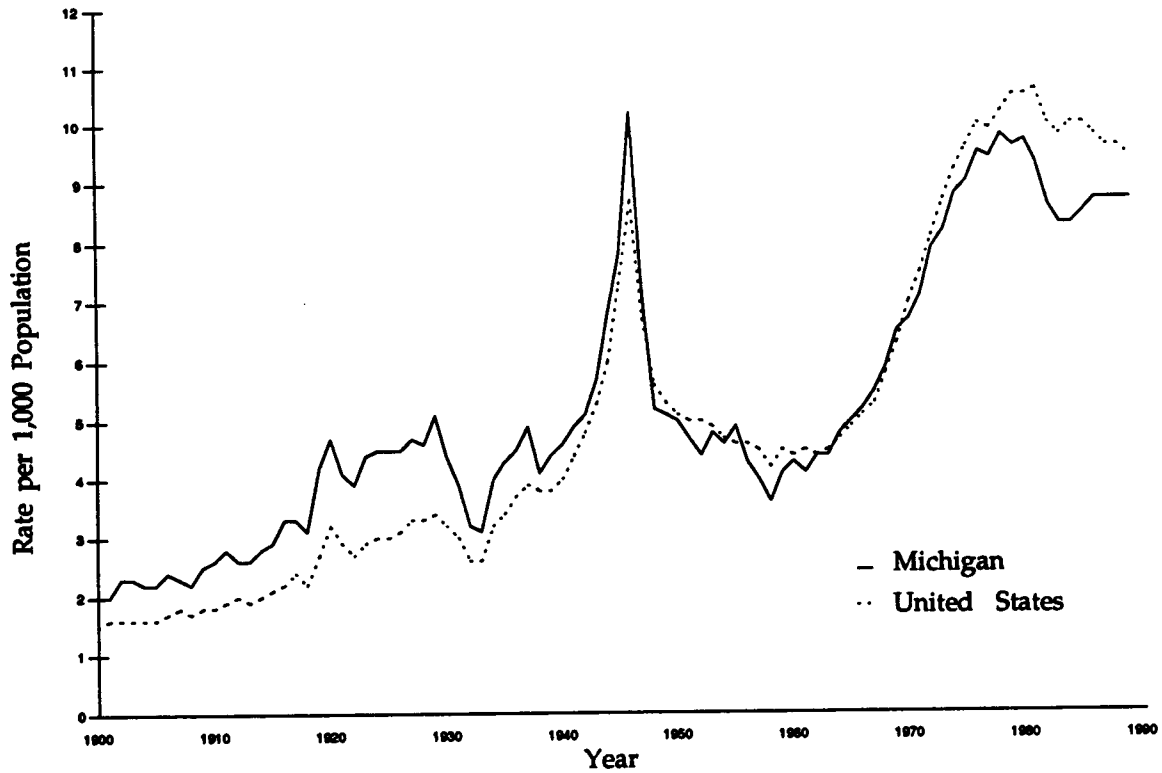
¹ Number of persons whose marriages ended in divorce or annulment per 1,000 population.

² Estimate.

at or below the national rate 35 times, including each of the past 20 years. The lowest national rate was 1.5 in 1900. The highest

national divorce rate during this century was recorded in 1981 (10.6).

Figure 3.4
 Divorce Rates
 Michigan and United States Occurrences, 1900-1989¹



¹ United States rates for 1987 and 1988 are provisional.

The number of children under 18 of couples dissolving marriages in 1989 was at least 39,897 (Table 3.10). This is 15.1 percent below the number in 1979. The number of children affected by divorce has, however, increased as a proportion of all children. This ratio increased from 6.5 per 1,000 Michigan children in 1960 to 12.5 in 1970 and to 18.2 by 1981 (Table 3.11). It declined to 14.8 in 1984 and increased to 15.2 in 1989.

The average number of children per divorce has, nonetheless, dropped from a high of 1.37 children in 1971 to a low of 0.99 in 1989. The decline primarily reflects a decline in the proportion of divorces involving three or more children. It should be noted that Michigan live birth data indicate that there has been a slight increase in the relative proportion of women having third or higher order live births over the past decade. Data for the United States indicate a similar pattern.

Table 3.10
Divorces and Annulments by Children Under 18 Present
Michigan Occurrences, 1979 and 1989

Number of Children	Divorces and Annulments				Estimated Total Children (Minimum) ¹	
	Number		Percent		1979	1989
	1979	1989	1979	1989		
Zero	16,720	16,994	37.9	42.2	—	—
One	10,619	9,704	24.1	24.1	10,619	9,704
Two	9,280	8,818	21.0	21.9	18,560	17,636
Three	3,607	2,910	8.2	7.2	10,821	8,730
Four	1,148	684	2.6	1.7	4,592	2,736
Five or More	452	204	1.0	0.5	2,427	1,091
Not Stated	2,283	962	5.2	2.4	—	—
Total	44,109	40,276	100.0	100.0	47,019	39,897

¹ Total children for marriages involving 6 or more children under 18 is not available.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 3.11
Estimated Number of Children Involved in Divorces and Annulments
Average Number of Children Per Decree, and
Rate Per 1,000 Children Under 18 Years of Age
Michigan and United States, Selected Years 1960 - 1989

Michigan			Year	United States		
Estimated Number of Children Involved	Average Number of Children Per Decree	Rate Per 1,000 Under 18 Years of Age		Estimated Number of Children Involved	Average Number of Children Per Decree	Rate Per 1,000 Under 18 Years of Age
19,209	1.15	6.5	1960	463,000	1.18	7.2
40,596	1.36	12.5	1970	870,000	1.22	12.5
43,430	1.37	13.4	1971	946,000	1.22	13.6
46,538	1.31	14.4	1972	1,021,000	1.20	14.7
48,153	1.18	15.8	1975	1,123,000	1.08	16.7
49,555	1.15	16.6	1976	1,117,000	1.03	16.9
47,569	1.11	16.3	1977	1,095,000	1.00	16.7
48,510	1.08	17.0	1978	1,147,000	1.01	17.7
47,019	1.07	16.8	1979	1,181,000	1.00	18.4
46,603	1.04	16.9	1980	1,174,000	0.98	17.3
45,461	1.05	18.2	1981	1,180,000	0.97	18.7
41,156	1.04	16.9	1982	1,108,000	0.94	17.6
38,712	1.02	16.2	1983	1,091,000	0.94	17.4
37,629	1.00	14.8	1984	1,081,000	0.92	17.2
38,673	1.00	15.3	1985	1,091,000	0.92	17.3
39,378	1.00	15.7	1986	1,064,000	0.90	16.8
39,321	1.00	14.8	1987	1,038,000	0.89	16.3
39,635	0.99	15.0	1988	---	---	---
39,897	0.99	15.2	1989	---	---	---

Source: Office of the State Registrar and Center for Health Statistics, MDPH

The majority of husbands and wives divorced in 1989 in Michigan were from 25 to 39 years of age (Table 3.12). The median age for husbands was 35 years and 7 months, while the median age for wives was 29 months younger (33 years and 2 months).

Wives under 25 years of age accounted for 12.5 percent of the wives divorced compared to only 6.8 percent of the husbands. Conversely, 6.4 percent of the wives divorced in 1989 were 50 years of age or over compared to 10.8 percent of the husbands.

Table 3.12
Divorces and Annulments by Age of Husband and Wife
at Time of Decree
Michigan Occurrences, 1989

Age	Husband		Wife	
	Number	Percent	Number	Percent
Total	40,276	100.0	40,276	100.0
Under 20	73	0.2	330	0.8
20 - 24	2,658	6.6	4,720	11.7
25 - 29	7,078	17.6	8,309	20.6
30 - 34	8,058	20.0	8,022	19.9
35 - 39	6,813	16.9	6,325	15.7
40 - 44	5,547	13.8	4,704	11.7
45 - 49	3,359	8.3	2,559	6.4
50 - 54	1,962	4.9	1,237	3.1
55 - 59	1,125	2.8	648	1.6
60 - 64	633	1.6	386	1.0
65 - 69	320	0.8	193	0.5
70 - 74	174	0.4	74	0.2
75 +	119	0.3	50	0.1
Unknown	2,357	5.9	2,719	6.8
Median Age ¹	35 Years 7 Months		33 Years 2 Months	

¹ Based on records with known age only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

In 9.1 percent of the marriages dissolved in Michigan in 1989 the couple separated less than one year after the marriage took place. In 41.0 percent of the marriages ended by divorce or annulment the separation took place within five years of the date of marriage (Table 3.13). The median duration of mar-

riage at the time of dissolution was 7 years and 9 months. For over fifty percent of the marriages ended by divorce or annulment in 1989, the length of time between the date of separation and the date of dissolution was 12 months or less.

Table 3.13
Divorces and Annulments by Duration of Marriage
at Time of Separation and at Time of Dissolution
Michigan Occurrences, 1989

Duration in Years	At Time of Separation		At Time of Dissolution	
	Number	Percent	Number	Percent
Less Than 1	3,655	9.1	1,167	2.9
1 - 4	12,864	31.9	12,248	30.4
5 - 9	8,942	22.2	11,005	27.3
10 - 14	4,742	11.8	6,162	15.3
15 - 19	3,291	8.2	4,158	10.3
20 - 24	2,050	5.1	2,793	6.9
25 - 29	917	2.3	1,326	3.3
30 - 34	472	1.2	693	1.7
35 - 39	199	0.5	331	0.8
40 - 44	88	0.2	162	0.4
45 - 49	23	0.1	51	0.1
50 +	12	0.0	18	0.0
Unknown	3,021	7.5	162	0.4
Total	40,276	100.0	40,276	100.0
Median Duration¹	5 Years 11 Months		7 Years 9 Months	

¹ Based on records with known duration only.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

REFERENCE APPENDIX
SECTION IV


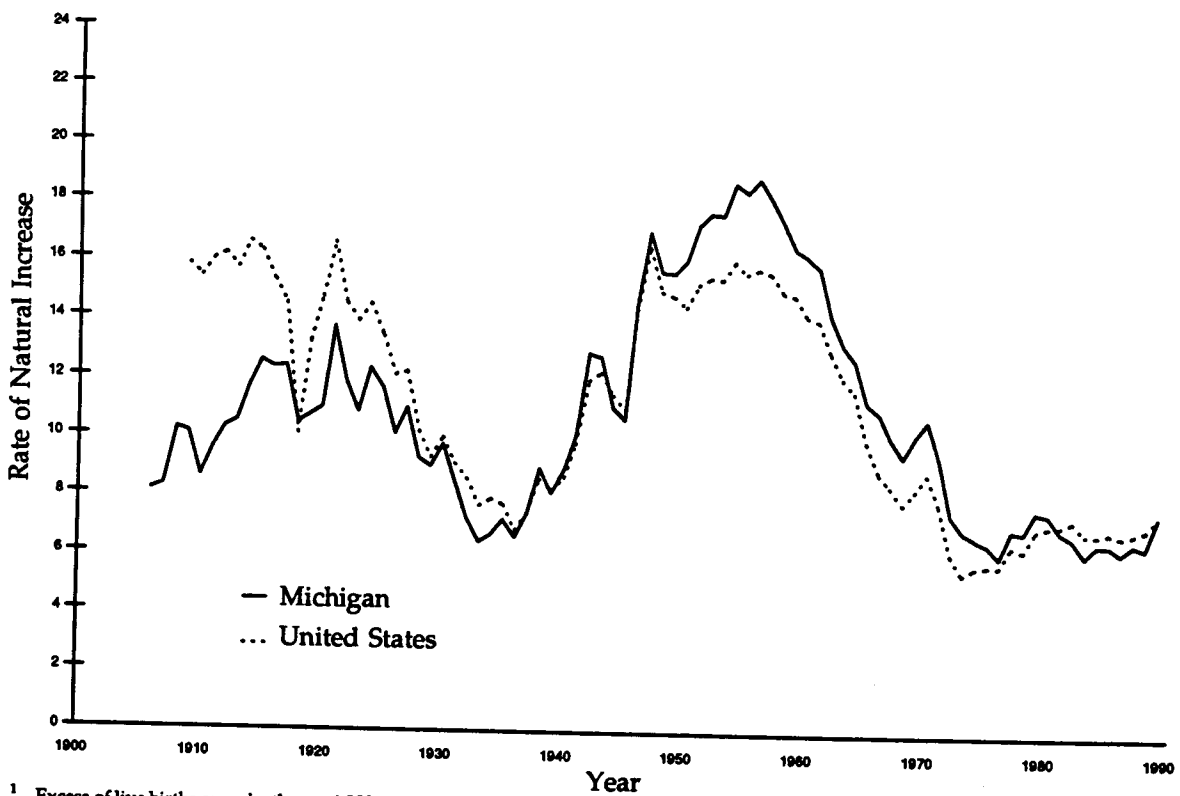


Figure 4.1
Rate of Natural Increase¹
 Michigan, 1906 - 1989 and the United States, 1909 - 1989²



¹ Excess of live births over deaths per 1,000 population.

² Rates for the United States for 1909 - 1932 are based on death rates from the Death Registration States and estimated birth rates for the United States, adjusted for under-registration. For 1933 - 1959 rates are based on registered deaths in the United States and births adjusted for under-registration. After 1959 rates are based on registered births and deaths.

Table 4.1
Population, Live Births, Deaths (All Ages, Infant, Neonatal, Postneonatal, Perinatal, Fetal and Maternal), Marriages and Divorces
 Michigan, 1900 - 1989

Year	Population ¹	Live Births	Deaths							Marriages	Divorces
			All Ages	Under 1 Year	Under 28 Days ²	28-364 Days	Perinatal	Fetal	Maternal		
1900	2,420,982	43,699	32,453	6,866				1,325	452	23,295	2,435
1901	2,459,901	43,221	32,834	6,319				1,501	531	24,079	2,448
1902	2,498,820	45,546	31,472	5,949				1,793	468	25,653	2,828
1903	2,537,739	46,020	33,176	6,488				1,814	427	26,029	2,945
1904	2,576,658	47,508	34,494	6,419				1,911	436	24,918	2,808
1905	2,615,578	46,976	34,679	7,054				2,044	416	26,307	2,825
1906	2,654,497	58,599	37,033	7,952				2,358	400	27,519	3,192
1907	2,693,416	59,029	36,701	6,906				2,358	391	27,940	3,107
1908	2,732,335	64,772	36,761	7,697				2,694	440	25,765	3,020
1909	2,771,254	64,323	36,313	7,443				2,540	405	27,353	3,516
1910	2,810,173	64,109	39,913	7,998				2,559	431	29,039	3,716
1911	2,895,997	65,756	38,007	7,131				2,716	451	29,859	4,125
1912	2,981,821	69,537	38,804	6,985				2,906	396	31,694	3,838
1913	3,067,645	73,058	40,827	7,659				2,953	528	33,529	3,978
1914	3,153,469	76,761	39,906	7,431				3,113	507	35,316	4,395
1915	3,239,293	81,100	40,441	6,943				3,357	488	35,527	4,757
1916	3,325,116	87,062	46,047	8,415				3,689	503	40,143	5,540
1917	3,410,940	89,419	47,236	7,916				3,550	586	42,791	5,627
1918	3,496,764	91,261	54,617	8,197				3,686	709	33,260	5,493
1919	3,582,588	84,062	45,636	7,560				3,361	578	45,579	7,469
1920	3,668,412	92,245	51,982	8,587				3,770	795	50,805	8,679
1921	3,785,799	96,035	44,186	7,584				3,669	605	41,508	7,676
1922	3,903,186	90,042	43,817	6,730				3,779	551	43,561	7,591
1923	4,020,573	92,956	49,333	7,477				3,657	583	49,569	8,745
1924	4,137,960	98,187	47,304	7,088				3,703	636	49,788	9,400
1925	4,255,347	98,983	49,417	7,498			6,791	3,670	629	46,276	9,650
1926	4,372,734	98,289	54,080	7,620	4,119		6,667	3,816	631	39,788	9,795
1927	4,490,121	99,940	50,600	6,766	4,022		6,773	3,701	667	36,276	10,617
1928	4,607,508	97,462	54,755	6,806	3,915		6,594	3,701	603	37,300	10,615
1929	4,724,895	98,695	56,117	6,605	3,777		6,613	3,710	617	36,816	12,094

¹ 1971-1979 population estimates have been revised by the U.S. Census Bureau.

² For Years prior to 1950 deaths under 1 month of age are included in deaths under 28 days.

³ Estimate.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.1 (continued)
Population, Live Births, Deaths (All Ages, Infant, Neonatal, Postneonatal, Perinatal, Fetal and Maternal), Marriages and Divorces
 Michigan, 1900 - 1989
(Deaths exclusive of fetal deaths. Perinatal deaths include deaths under 1 week and fetal deaths. Divorces include annulments.)

Year	Population ¹	Live Births	Deaths							Marriages	Divorces
			All Ages	Under 1 Year	Under 28 Days ²	28-364 Days	Perinatal	Fetal	Maternal		
1930	4,842,325	98,882	51,561	6,213	3,624	2,589	6,518	3,714	29,482	10,639	
1931	4,883,703	90,547	49,068	5,187	3,084	2,103	5,643	3,220	28,856	9,507	
1932	4,925,081	85,254	49,569	4,630	2,798	1,832	5,210	2,980	28,552	7,889	
1933	4,966,459	80,482	48,507	4,094	2,591	1,503	4,906	2,776	33,132	7,671	
1934	5,007,837	83,944	48,507	4,377	2,717	1,660	4,781	2,607	43,241	10,124	
1935	5,049,216	87,403	50,440	4,170	2,550	1,620	4,832	2,717	45,313	10,844	
1936	5,090,594	88,457	51,051	4,170	2,647	1,832	4,726	2,625	47,023	11,419	
1937	5,131,972	91,566	53,468	4,374	2,700	1,674	4,919	2,707	47,954	12,472	
1938	5,173,350	96,962	50,678	4,319	2,734	1,585	4,984	2,732	30,105	10,646	
1939	5,214,728	94,432	52,017	3,952	2,594	1,358	4,706	2,572	37,725	11,589	
1940	5,256,106	99,106	52,092	4,022	2,629	1,393	4,749	2,602	46,342	12,054	
1941	5,437,546	107,498	52,671	4,166	2,687	1,479	4,991	2,769	50,989	13,317	
1942	5,538,856	124,068	52,738	4,606	3,091	1,515	5,581	3,067	51,582	14,085	
1943	5,377,329	125,441	56,774	4,804	2,979	1,825	5,563	3,213	44,385	15,259	
1944	5,377,329	113,586	54,016	4,326	2,784	1,542	5,140	2,874	41,678	18,356	
1945	5,435,092	111,557	53,641	4,008	2,670	1,338	4,906	2,703	48,329	21,133	
1946	5,708,415	138,572	54,856	4,541	3,323	1,218	5,978	3,168	78,808	29,158	
1947	6,069,000	160,275	56,807	5,055	3,677	1,378	6,583	3,422	71,319	21,386	
1948	6,195,000	153,726	56,520	4,617	3,352	1,265	5,968	3,132	61,986	16,017	
1949	6,352,000	156,469	57,107	4,520	3,232	1,288	5,746	2,994	53,109	16,274	
1950	6,371,766	160,055	57,567	4,214	3,043	1,171	5,781	3,095	58,180	15,979	
1951	6,545,000	172,451	59,181	4,505	3,296	1,209	6,088	3,158	53,411	15,446	
1952	6,708,000	177,835	59,138	4,689	3,414	1,275	6,266	3,224	50,487	14,925	
1953	6,852,000	182,968	62,087	4,728	3,369	1,339	6,188	3,180	53,308	16,537	
1954	7,024,000	192,104	60,706	4,795	3,560	1,235	6,415	3,249	51,243	16,281	
1955	7,236,000	196,294	63,087	4,873	3,707	1,166	6,381	3,029	55,698	17,676	
1956	7,516,000	206,068	64,352	5,047	3,796	1,251	6,655	3,245	57,068	16,228	
1957	7,803,000	208,488	66,435	5,093	3,884	1,209	6,668	3,154	55,121	15,442	
1958	7,866,000	202,690	65,899	4,980	3,789	1,191	6,516	3,101	55,159	14,040	
1959	7,960,000	198,301	66,812	4,846	3,674	1,172	6,250	2,928	58,826	16,168	

¹ 1971-1979 population estimates have been revised by the U.S. Census Bureau.

² For Years prior to 1950 deaths under 1 month of age are included in deaths under 28 days.

³ Estimate.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.1 (continued)
Population, Live Births, Deaths (All Ages, Infant, Neonatal, Postneonatal, Perinatal, Fetal and Maternal), Marriages and Divorces
 Michigan, 1900 - 1989
(Deaths exclusive of fetal deaths. Perinatal deaths include deaths under 1 week and fetal deaths. Divorces include annulments.)

Year	Population ¹	Live Births	Deaths							Marriages	Divorces
			All Ages	Under 1 Year	Under 28 Days ²	28-364 Days	Perinatal	Fetal	Maternal		
1960	7,823,194	195,056	67,912	4,702	3,580	1,122	6,247	3,008	75	61,090	16,656
1961	7,903,000	192,825	67,375	4,604	3,475	1,129	5,875	2,735	78	63,320	16,219
1962	7,939,000	182,790	70,049	4,367	3,251	1,116	5,669	2,703	56	65,002	17,500
1963	8,030,000	178,871	72,438	4,150	3,109	1,041	5,407	2,540	71	68,160	17,479
1964	8,100,000	175,103	72,129	4,043	3,071	972	5,293	2,466	62	73,911	19,400
1965	8,199,283	166,464	73,665	3,936	2,909	1,027	4,909	2,475	54	81,247	20,305
1966	8,314,070	165,794	74,596	3,751	2,830	921	4,693	2,295	54	83,903	21,727
1967	8,615,000	162,756	75,360	3,595	2,714	881	4,693	2,195	52	84,363	23,620
1968	8,675,000	159,058	76,855	3,438	2,617	821	4,476	2,064	44	90,894	25,400
1969	8,734,000	165,760	76,693	3,356	2,550	806	4,488	2,175	27	93,392	28,347
1970	8,875,083	171,667	76,321	3,492	2,671	821	4,522	2,060	29	91,933	29,934
1971	8,972,000	162,244	77,395	3,157	2,412	745	4,139	1,923	32	92,134	31,790
1972	9,025,000	146,854	79,210	2,801	2,115	686	3,700	1,765	35	94,447	35,505
1973	9,072,000	141,550	78,522	2,561	1,902	659	3,392	1,682	26	94,486	37,128
1974	9,109,000	137,414	76,143	2,387	1,734	633	2,947	1,438	19	88,023	39,940 ³
1975	9,108,000	133,931	74,522	2,205	1,563	642	2,673	1,356	16	82,856	40,782
1976	9,117,000	131,378	75,801	1,978	1,424	554	2,495	1,264	14	82,753	43,101
1977	9,157,000	138,416	74,144	1,945	1,367	578	2,452	1,284	11	86,088	43,036
1978	9,202,000	136,802	74,773	1,931	1,281	650	2,302	1,201	15	88,333	45,029
1979	9,249,000	144,452	73,480	1,921	1,295	626	2,285	1,175	11	89,450	44,242
1980	9,262,078	145,162	74,991	1,851	1,284	567	2,235	1,135	16	86,898	45,047
1981	9,270,000	140,579	75,818	1,851	1,281	570	2,151	1,040	7	85,252	43,167
1982	9,227,327	137,950	75,536	1,672	1,202	470	1,989	953	11	82,633	39,739
1983	9,155,480	133,026	76,639	1,573	1,067	506	1,843	933	6	78,910	37,991
1984	9,074,622	135,782	76,401	1,595	1,100	495	1,884	929	4	80,810	37,563
1985	9,088,341	138,052	78,635	1,575	1,071	504	1,867	953	9	79,022	38,775
1986	9,144,545	137,626	80,177	1,565	1,079	486	1,782	865	11	77,815	39,553
1987	9,199,871	140,466	79,795	1,538	1,029	509	1,701	824	8	74,418	39,857
1988	9,239,811	139,635	80,075	1,542	1,068	474	1,659	761	11	75,386	40,103
1989	9,273,429	148,164	78,566	1,645	1,070	575	1,792	881	13	76,210	40,276

¹ 1971-1979 population estimates have been revised by the U.S. Census Bureau.

² For Years prior to 1950 deaths under 1 month of age are included in deaths under 28 days.

³ Estimate.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.2
Live Birth Rates, Death Rates (All Ages, Infant, Neonatal, Postneonatal, Perinatal and Maternal), Fetal Death Ratios, Marriage and Divorce Rates
 Michigan, 1900 - 1989¹

(Birth rate, death rate for all ages, rate of persons married and rate of persons divorced per 1,000 population. Fetal death ratio, mortality rates for deaths under 1 year, under 28 days, and from 28-364 days per 1,000 live births. Maternal mortality rate per 10,000 live births. Perinatal mortality rate per 1,000 live births and fetal deaths.)

Year	Live Births	Deaths							Maternal	Marriages	Divorces
		All Ages	Under 1 Year	Under 28 Days ²	28-364 Days	Perinatal	Fetal	Maternal			
1900	18.1	13.4	157.1					30.3	103.4	19.2	2.0
1901	17.6	13.3	146.2					34.7	122.9	19.6	2.0
1902	18.2	12.6	130.6					39.4	102.8	20.5	2.3
1903	18.1	13.1	141.0					39.4	92.8	20.5	2.3
1904	18.4	13.4	135.1					40.2	91.8	19.3	2.2
1905	18.0	13.3	150.2					43.5	88.6	20.1	2.2
1906	22.1	14.0	135.7					40.2	68.3	20.7	2.4
1907	21.9	13.6	117.0					39.9	66.2	20.7	2.3
1908	23.7	13.5	118.8					41.6	67.9	18.9	2.2
1909	23.2	13.1	115.7					39.5	63.0	19.7	2.5
1910	22.8	14.2	124.8					39.9	67.2	20.7	2.6
1911	22.7	13.1	108.4					41.3	68.6	20.6	2.8
1912	23.3	13.0	100.4					41.8	56.9	21.3	2.6
1913	23.8	13.3	104.8					40.4	72.3	21.9	2.6
1914	24.3	12.7	96.8					40.6	66.0	22.4	2.8
1915	25.0	12.5	85.6					41.4	60.2	21.9	2.9
1916	26.2	13.8	96.7					42.4	57.8	24.1	3.3
1917	26.2	13.8	88.5					39.7	65.5	25.1	3.3
1918	26.1	15.6	89.8					40.4	77.7	19.0	3.1
1919	23.5	12.7	89.9					40.0	68.8	25.4	4.2
1920	25.1	14.2	93.1					40.9	86.2	27.7	4.7
1921	25.4	11.7	79.0					38.2	63.0	21.9	4.1
1922	23.1	11.2	74.7					42.0	61.2	22.3	3.9
1923	23.1	12.3	80.4					39.3	62.7	24.7	4.4
1924	23.7	11.4	72.2					37.7	64.8	24.1	4.5
1925	23.3	11.6	75.7	30.2				37.1	63.5	21.7	4.5
1926	22.5	12.4	77.5	35.1				38.8	64.2	18.7	4.5
1927	22.3	11.3	67.7	36.3				38.4	66.7	16.2	4.7
1928	21.2	11.9	69.8	31.5				38.0	61.9	16.2	4.6
1929	20.9	11.9	66.9	28.7				37.6	62.5	15.6	5.1

¹ 1971-1979 birth, death, marriage and divorce rates have been recalculated using revised population estimates.

² For years prior to 1950 deaths under 1 month of age are included in deaths under 28 days.

³ Estimate.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.2 (continued)
 Live Birth Rates, Death Rates (All Ages, Infant, Neonatal, Postneonatal, Perinatal and Maternal), Fetal Death Ratios, Marriage and Divorce Rates
 Michigan, 1900 - 1989¹

Year	Live Births	Deaths							Maternal	Marriages	Divorces
		All Ages	Under 1 Year	Under 28 Days ²	28-364 Days	Perinatal	Fetal	Maternal			
1930	20.4	10.6	62.8	36.6	26.2	63.5	37.6	60.4	12.2	4.4	
1931	18.5	10.1	57.3	34.1	23.2	60.2	35.6	59.5	11.8	3.9	
1932	17.3	10.1	54.3	32.8	21.5	59.0	35.0	57.8	11.6	3.2	
1933	16.2	9.8	50.9	32.2	18.7	58.9	34.5	55.5	13.3	3.1	
1934	16.8	10.1	52.1	32.4	19.8	55.2	31.1	53.6	17.3	4.0	
1935	17.3	10.1	47.7	29.2	18.5	53.6	29.7	50.1	17.9	4.3	
1936	17.4	10.8	50.6	29.9	20.7	51.9	29.6	48.0	18.5	4.5	
1937	17.8	10.4	47.8	29.5	18.3	52.2	28.2	35.6	18.7	4.9	
1938	18.7	9.8	44.5	28.2	16.3	50.0	28.2	35.6	11.6	4.1	
1939	18.1	10.0	41.8	27.5	14.4	48.5	27.2	29.6	14.5	4.4	
1940	18.9	9.9	40.6	26.5	14.1	46.7	26.3	29.5	17.6	4.6	
1941	19.8	9.7	38.8	25.0	13.8	45.3	25.8	27.7	18.8	4.9	
1942	22.4	9.5	37.1	24.9	12.2	43.9	24.7	21.0	18.6	5.1	
1943	23.3	10.6	38.3	23.7	14.5	43.2	25.6	18.9	16.5	5.7	
1944	21.1	10.0	38.1	24.5	13.6	44.1	25.3	17.4	15.5	6.8	
1945	20.5	9.9	35.9	23.9	12.0	42.9	24.2	14.9	17.8	7.8	
1946	24.3	9.6	32.8	24.0	8.8	42.2	22.9	11.8	27.6	10.2	
1947	26.4	9.4	31.5	22.9	8.6	40.2	21.4	10.8	23.5	7.1	
1948	24.8	9.1	30.0	21.8	8.2	38.0	20.4	7.8	20.0	5.2	
1949	24.6	9.0	28.9	20.7	8.2	36.0	19.1	6.7	16.7	5.1	
1950	25.1	9.0	26.3	19.0	7.3	35.4	19.3	5.7	18.3	5.0	
1951	26.3	9.0	26.1	19.1	7.0	34.7	18.3	5.5	16.3	4.7	
1952	26.5	8.8	26.4	19.2	7.2	34.6	18.1	4.6	15.1	4.4	
1953	26.7	9.1	25.8	18.5	7.3	33.2	17.4	4.3	15.6	4.8	
1954	27.3	8.6	25.0	18.5	6.4	32.8	16.9	4.9	14.6	4.6	
1955	27.1	8.7	24.8	18.9	5.9	32.0	15.4	3.1	15.4	4.9	
1956	27.4	8.6	24.5	18.4	6.1	31.8	15.7	4.1	15.2	4.3	
1957	26.7	8.5	24.4	18.6	5.8	31.5	15.1	3.8	14.1	4.0	
1958	25.8	8.4	24.6	18.7	5.9	31.7	15.3	3.4	14.0	3.6	
1959	24.9	8.4	24.4	18.5	5.9	31.1	14.8	3.6	14.8	4.1	

¹ 1971-1979 birth, death, marriage and divorce rates have been recalculated using revised population estimates.

² For years prior to 1950 deaths under 1 month of age are included in deaths under 28 days.

³ Estimate.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.2 (continued)
 Live Birth Rates, Death Rates (All Ages, Infant, Neonatal, Postneonatal, Perinatal and Maternal), Fetal Death Ratios, Marriage and Divorce Rates
 Michigan, 1900 - 1989¹

Year	Live Births	Deaths							Fetal	Maternal	Marriages	Divorces
		All Ages	Under 1 Year	Under 28 Days ²	28-364 Days	Perinatal	Perinatal	Fetal				
1960	24.9	8.7	24.1	18.4	5.8	31.5	15.4	3.8	15.6	4.3		
1961	24.4	8.5	23.9	18.0	5.9	30.0	14.2	4.0	16.0	4.1		
1962	23.0	8.8	23.9	17.8	6.1	30.6	14.8	3.1	16.4	4.4		
1963	22.3	9.0	23.2	17.4	5.8	29.8	14.2	4.0	17.0	4.4		
1964	21.6	8.9	23.1	17.5	5.6	29.8	14.1	3.5	18.2	4.8		
1965	20.3	9.0	23.6	17.5	6.2	30.4	14.9	3.2	19.8	5.0		
1966	19.9	9.0	23.6	17.1	5.6	29.2	13.8	3.3	20.2	5.2		
1967	18.9	8.7	22.1	16.7	5.4	28.4	13.5	3.2	19.6	5.5		
1968	18.3	8.9	21.6	16.5	5.2	27.8	13.0	2.8	21.0	5.9		
1969	19.0	8.8	20.2	15.4	4.9	26.7	13.1	1.6	21.4	6.5		
1970	19.3	8.6	20.3	15.6	4.8	26.0	12.0	1.7	20.7	6.7		
1971	18.1	8.6	19.5	14.9	4.6	25.2	11.9	2.0	20.5	7.1		
1972	16.3	8.8	19.1	14.4	4.7	24.9	12.0	2.4	20.9	7.9		
1973	15.6	8.7	18.1	13.4	4.7	23.7	11.9	1.8	20.8	8.2		
1974	15.1	8.4	17.4	12.6	4.8	21.2	10.5	1.4	19.3	8.8 ³		
1975	14.7	8.2	16.5	11.7	4.8	19.8	10.1	1.2	18.2	9.0		
1976	14.4	8.3	15.1	10.8	4.2	18.8	9.6	1.1	18.2	9.5		
1977	15.1	8.1	14.1	9.9	4.2	17.6	9.3	0.8	18.8	9.4		
1978	15.1	8.1	13.9	9.2	4.7	16.4	8.7	1.1	19.2	9.8		
1979	15.6	7.9	13.3	9.0	4.3	15.7	8.1	0.8	19.3	9.6		
1980	15.7	8.1	12.8	8.8	3.9	15.3	7.8	1.1	18.8	9.7		
1981	15.2	8.2	13.2	9.1	4.1	15.2	7.4	0.5	18.4	9.3		
1982	15.0	8.2	12.1	8.7	3.4	14.3	6.9	0.8	17.9	8.6		
1983	14.5	8.4	11.8	8.0	3.8	13.8	7.0	0.5	17.2	8.3		
1984	15.0	8.4	11.7	8.1	3.6	13.8	6.8	0.3	17.8	8.3		
1985	15.2	8.7	11.4	7.8	3.7	13.4	6.9	0.7	17.4	8.5		
1986	15.1	8.8	11.4	7.8	3.5	12.9	6.3	0.8	17.0	8.7		
1987	15.3	8.7	10.9	7.3	3.6	12.0	5.7	0.6	16.2	8.7		
1988	15.1	8.7	11.0	7.6	3.4	11.9	5.4	0.8	16.3	8.7		
1989	16.0	8.5	11.1	7.2	3.9	12.0	5.9	0.9	16.4	8.7		

¹ 1971-1979 birth, death, marriage and divorce rates have been recalculated using revised population estimates.

² For years prior to 1960 deaths under 1 month of age are included in deaths under 28 days.

³ Estimate.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.3
Number of Live Births by Age of Mother
Michigan Residents, 1920 - 1989

Year	All Ages ¹	Age of Mother							Age Not Stated	
		10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44		45 +
1920	92,740	34	8,129	26,344	26,251	17,521	10,427	3,523	336	175
1921	96,322	39	8,747	26,583	27,292	18,433	11,150	3,572	337	169
1922	90,209	28	8,125	24,575	25,154	17,690	10,584	3,485	343	225
1923	93,066	37	8,725	25,887	25,459	18,072	10,770	3,476	382	258
1924	98,025	38	9,877	28,000	25,781	18,707	11,395	3,682	321	224
1925	99,220	62	10,248	28,116	26,204	18,869	11,406	3,695	379	241
1926	98,781	76	10,496	28,479	25,876	18,444	11,219	3,568	354	269
1927	100,178	59	10,685	29,302	25,707	18,790	11,287	3,722	332	294
1928	97,797	54	10,788	28,895	25,003	17,953	10,913	3,558	315	318
1929	99,134	56	11,312	30,582	25,557	16,957	10,555	3,523	293	299
1930	99,325	60	11,476	29,956	25,861	17,125	10,684	3,582	291	290
1931	90,929	61	10,109	27,255	23,806	15,937	9,905	3,317	302	237
1932	85,736	62	9,297	25,686	22,608	14,988	9,314	3,250	291	240
1933	80,923	52	8,642	23,874	21,618	14,298	8,795	3,173	261	210
1934	83,925	48	9,039	25,458	22,507	14,968	8,391	3,050	259	205
1935	87,446	47	9,808	27,631	22,938	15,026	8,473	3,029	284	210
1936	88,427	53	9,764	28,681	23,584	14,814	8,194	2,866	274	197
1937	91,539	54	10,524	30,532	24,366	15,022	7,949	2,653	242	140
1938	96,963	64	11,024	32,581	26,116	15,690	8,397	2,698	253	140
1939	94,302	51	10,368	31,036	26,095	15,976	8,021	2,416	209	130
1940	99,021	51	10,671	32,960	27,860	16,549	8,146	2,390	202	192
1941	107,458	50	11,309	36,833	31,067	17,132	8,351	2,361	200	155
1942	123,886	66	12,721	43,947	36,034	19,367	8,985	2,445	202	119
1943	125,778	67	11,934	41,627	37,773	21,449	9,980	2,615	184	149
1944	114,700	76	10,113	36,096	33,654	21,094	10,636	2,714	182	135
1945	112,655	73	9,294	32,790	33,143	22,831	11,185	2,970	229	140
1946	139,277	72	10,899	45,999	41,985	25,184	11,811	3,002	223	102
1947	161,085	91	15,594	55,954	47,793	26,296	12,009	3,073	182	93
1948	154,730	95	16,245	53,520	45,059	25,268	11,391	2,888	173	91
1949	157,178	117	16,404	53,608	46,363	25,971	11,565	2,906	181	63

¹ Total live births for the years 1920 through 1989 differ from figures in Table 4.1 as they are derived from outside sources. Live births by age of mother were not tabulated in Michigan prior to 1960. These data were obtained from the following sources:

- 1920-1923: Unpublished tables from the National Center for Health Statistics.
- 1924-1932: Bureau of the Census publication, Birth, Stillbirth and Infant Mortality Statistics for Birth, Registration Areas of the United States.
- 1933-1936: Unpublished tables from the National Center for Health Statistics.
- 1937-1949: Bureau of the Census publication, Vital Statistics of the United States series.
- 1950-1959: Department of Health Education and Welfare publication, Vital Statistics of the United States series.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.3 (continued)
Number of Live Births by Age of Mother
Michigan Residents, 1920 - 1989

Year	Age of Mother								Age Not Stated	
	All Ages ¹	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44		45 +
1950	160,955	111	16,310	53,442	48,186	27,422	12,392	2,831	169	92
1951	173,506	104	17,974	57,340	52,044	29,674	13,086	3,040	160	84
1952	176,634	134	17,206	58,012	54,198	31,756	13,880	3,176	220	52
1953	182,810	166	18,510	58,070	54,734	32,948	14,798	3,350	190	44
1954	192,332	208	20,522	60,776	55,962	35,152	15,862	3,598	220	32
1955	196,623	195	21,417	61,952	56,462	35,968	16,554	3,862	198	15
1956	206,226	192	22,808	66,332	58,392	36,870	17,282	4,172	164	14
1957	208,808	190	23,798	67,086	58,424	36,980	17,956	4,160	200	14
1958	202,900	222	23,034	65,834	55,130	36,278	17,892	4,296	196	18
1959	198,576	200	21,922	65,426	53,434	34,934	18,080	4,424	198	8
1960	195,056	186	22,786	65,108	51,842	33,228	17,410	4,288	202	6
1961	192,825	212	23,891	64,336	50,277	32,456	17,067	4,363	203	20
1962	182,790	268	22,702	62,283	47,109	29,817	16,160	4,250	224	17
1963	178,871	210	21,686	62,834	46,063	28,364	15,117	4,359	229	9
1964	175,103	264	22,526	62,196	44,671	26,542	14,509	4,162	220	13
1965	166,464	267	24,653	59,439	40,693	23,767	13,528	3,886	211	20
1966	165,794	310	28,690	60,711	39,225	21,205	11,846	3,547	223	37
1967	162,756	316	27,267	61,541	40,052	19,840	10,479	3,059	178	24
1968	159,058	400	26,390	60,072	41,561	18,613	9,095	2,739	163	25
1969	165,760	421	28,061	63,376	44,615	18,535	8,157	2,433	134	28
1970	171,667	489	29,764	65,892	46,262	19,003	7,904	2,223	118	12
1971	162,244	472	28,480	62,367	43,639	18,259	6,975	1,926	112	14
1972	146,854	503	28,108	54,199	40,442	16,133	5,805	1,555	95	14
1973	141,550	569	27,808	51,284	39,845	15,520	5,163	1,277	62	22
1974	137,414	501	25,977	49,975	40,215	15,317	4,291	1,063	50	25
1975	133,931	463	24,509	48,675	40,061	14,891	4,273	982	54	23
1976	131,378	404	22,593	47,161	41,412	14,893	4,053	799	47	16
1977	138,416	426	22,585	49,740	43,346	17,293	4,178	771	51	26
1978	136,802	345	21,487	49,498	43,744	18,367	4,562	729	50	20
1979	144,452	355	21,239	51,319	46,084	19,962	4,720	715	41	17

¹ Total live births for the years 1920 through 1959 differ from figures in Table 4.1 as they are derived from outside sources. Live births by age of mother were not tabulated in Michigan prior to 1960. These data were obtained from the following sources:

- 1920-1923: Unpublished tables from the National Center for Health Statistics.
- 1924-1932: Bureau of the Census publication, Birth, Stillbirth and Infant Mortality Statistics for Birth, Registration Areas of the United States.
- 1933-1936: Unpublished tables from the National Center for Health Statistics.
- 1937-1949: Bureau of the Census publication, Vital Statistics of the United States series.
- 1960-1959: Department of Health Education and Welfare publication, Vital Statistics of the United States series.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.3 (continued)
 Number of Live Births by Age of Mother
 Michigan Residents, 1920 - 1989

Year	All Ages ¹	Age of Mother								Age Not Stated
		10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 +	
1980	145,162	331	20,000	51,218	47,113	21,024	4,692	740	22	22
1981	140,579	300	18,397	47,737	46,527	22,178	4,701	695	34	10
1982	137,950	319	17,344	45,586	45,995	22,564	5,395	711	29	7
1983	133,026	328	16,589	42,034	45,065	22,505	5,669	791	38	7
1984	135,782	341	16,442	41,664	45,908	24,320	6,295	780	30	2
1985	138,052	352	16,279	41,125	47,049	25,491	6,864	851	36	5
1986	137,626	335	16,536	39,611	46,421	26,331	7,503	842	35	12
1987	140,466	329	16,911	39,314	47,052	27,795	8,038	969	46	12
1988	139,635	371	17,003	37,529	45,924	28,469	8,553	1,094	54	638
1989	148,164	396	19,149	39,352	47,853	30,462	9,571	1,207	58	116

¹ Total live births for the years 1920 through 1959 differ from figures in Table 4.1 as they are derived from outside sources. Live births by age of mother were not tabulated in Michigan prior to 1960. These data were obtained from the following sources:

- 1920-1923: Unpublished tables from the National Center for Health Statistics.
- 1924-1932: Bureau of the Census publication, Birth, Stillbirth and Infant Mortality Statistics for Birth, Registration Areas of the United States.
- 1933-1936: Unpublished tables from the National Center for Health Statistics.
- 1937-1949: Bureau of the Census publication, Vital Statistics of the United States series.
- 1950-1959: Department of Health Education and Welfare publication, Vital Statistics of the United States series.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.4
Live Birth Rates by Age of Mother
 Michigan Residents, 1920 - 1989
 (Live birth rates are per 1,000 women per year. Total fertility rate is total children to 1,000 women in their lifetime assuming constant live birth rates.)

Year	Age of Mother							Total Fertility Rate	
	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44		45+ ¹
1920	0.2	55.7	173.1	164.0	124.2	83.8	34.3	3.8	3,195.5
1921	0.2	56.9	167.3	165.5	125.8	84.8	32.8	3.6	3,184.5
1922	0.2	50.8	149.6	149.1	117.3	77.1	30.7	3.5	2,891.5
1923	0.2	52.6	152.6	147.5	116.5	75.4	29.3	3.8	2,889.5
1924	0.2	57.4	160.0	146.1	117.3	76.7	29.9	3.1	2,953.5
1925	0.3	57.4	155.9	145.4	115.2	73.9	28.8	3.5	2,902.0
1926	0.4	56.9	153.3	140.5	109.7	70.1	26.8	3.2	2,804.5
1927	0.3	56.0	153.3	136.8	108.9	68.1	27.0	2.9	2,766.5
1928	0.2	54.8	147.1	130.3	101.5	63.7	25.0	2.6	2,626.0
1929	0.2	55.7	151.5	130.6	93.6	59.6	23.9	2.4	2,587.5
1930	0.3	55.2	145.5	130.2	92.8	58.9	23.7	2.3	2,544.5
1931	0.3	47.8	130.4	118.3	85.3	54.3	21.5	2.3	2,301.0
1932	0.3	43.4	121.5	111.2	79.4	50.8	20.8	2.2	2,148.0
1933	0.2	39.7	111.6	105.2	75.0	47.7	20.0	1.9	2,006.5
1934	0.2	41.0	117.6	108.4	77.8	45.3	18.9	1.8	2,055.0
1935	0.2	43.9	126.2	109.4	77.4	45.5	18.5	2.0	2,115.5
1936	0.2	43.1	129.5	111.4	75.5	43.8	17.3	1.8	2,113.0
1937	0.2	45.9	136.4	113.9	75.9	42.3	15.8	1.6	2,160.0
1938	0.3	47.4	143.9	120.9	78.5	44.4	15.8	1.6	2,264.0
1939	0.2	44.1	135.6	119.6	79.2	42.3	14.0	1.3	2,181.5
1940	0.2	44.9	142.8	126.8	81.5	42.8	13.7	1.2	2,269.5
1941	0.2	48.1	157.8	137.1	81.6	42.5	13.2	1.2	2,408.5
1942	0.3	54.5	186.6	153.3	89.9	44.7	13.4	1.2	2,729.5
1943	0.3	51.6	175.1	159.0	97.1	48.6	14.1	1.1	2,734.5
1944	0.3	44.1	150.5	138.5	93.2	50.6	14.3	1.0	2,462.5
1945	0.3	40.8	135.5	133.4	98.5	52.1	15.4	1.3	2,386.5
1946	0.3	48.3	188.5	165.3	106.2	53.8	15.3	1.2	2,894.5
1947	0.4	69.7	227.3	184.2	108.4	53.6	15.4	1.0	3,300.0
1948	0.4	73.2	215.5	170.0	101.9	49.8	14.2	1.0	3,130.0
1949	0.5	74.6	214.0	171.4	102.5	49.6	14.1	1.0	3,138.5

¹ Number of live births to women aged 45 and over per 1,000 women 45-49 years of age.

Source: Population figures used for 1920-1970 rates are from General Population Characteristics Michigan, USBC, 1971, with arithmetic extrapolation between census years. For 1971-1988 population source, see Technical Notes.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.4 (continued)
Live Birth Rates by Age of Mother
 Michigan Residents, 1920 - 1989
(Live birth rates are per 1,000 women per year. Total fertility rate is total children to 1,000 women in their lifetime assuming constant live birth rates.)

Year	Age of Mother							Total Fertility Rate	
	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44		45+ ¹
1950	0.5	74.6	212.0	175.5	106.5	52.3	13.6	0.9	3,179.5
1951	0.4	79.1	229.0	192.2	114.4	53.9	14.1	0.8	3,419.5
1952	0.5	73.5	233.0	202.5	121.7	56.1	14.4	1.1	3,514.0
1953	0.6	76.8	234.5	207.0	125.5	58.7	14.9	0.9	3,594.5
1954	0.7	82.8	246.8	214.1	133.1	61.8	15.6	1.1	3,780.0
1955	0.6	84.1	253.0	218.6	135.4	63.4	16.4	0.9	3,862.0
1956	0.6	87.2	272.4	228.9	138.0	65.0	17.4	0.8	4,051.5
1957	0.6	88.6	277.1	231.8	137.6	66.4	17.0	0.9	4,100.0
1958	0.6	83.6	273.4	221.5	134.3	65.0	17.2	0.9	3,982.5
1959	0.6	77.6	273.3	217.4	128.6	64.4	17.3	0.9	3,900.5
1960	0.5	79.3	273.1	213.0	121.8	61.4	16.6	0.9	3,833.0
1961	0.6	78.1	252.0	200.7	120.2	61.3	16.8	0.9	3,653.0
1962	0.7	70.7	231.5	183.9	111.4	58.9	16.3	0.9	3,371.5
1963	0.5	64.6	222.5	175.9	107.0	55.9	16.6	0.9	3,219.5
1964	0.6	64.2	210.1	167.0	101.0	54.4	15.8	0.9	3,070.0
1965	0.6	67.4	192.0	149.0	91.2	51.5	14.7	0.8	2,836.0
1966	0.7	75.4	187.9	140.7	82.1	45.8	13.4	0.9	2,734.5
1967	0.7	69.0	182.8	140.8	77.6	41.2	11.5	0.7	2,621.5
1968	0.9	64.3	171.5	143.2	73.4	36.3	10.2	0.6	2,502.0
1969	0.9	66.0	174.2	150.8	73.8	33.1	9.1	0.5	2,542.0
1970	1.0	68.2	176.0	154.0	76.1	32.4	8.3	0.4	2,582.0
1971	1.0	63.6	157.3	142.4	71.2	29.0	7.4	0.4	2,361.5
1972	1.1	61.6	137.4	122.7	60.8	24.2	6.1	0.4	2,071.5
1973	1.2	59.9	128.0	117.3	55.2	21.5	5.1	0.2	1,942.0
1974	1.1	55.3	122.3	113.7	52.4	17.7	4.4	0.2	1,835.5
1975	1.0	52.0	116.8	109.3	49.6	17.5	4.2	0.2	1,753.0
1976	0.9	48.0	111.0	107.5	49.1	16.3	3.4	0.2	1,682.0
1977	1.0	48.4	114.3	112.7	52.9	16.3	3.3	0.2	1,745.5
1978	0.8	46.5	111.5	111.6	54.5	16.8	3.1	0.2	1,725.0
1979	0.9	46.7	114.0	114.9	57.0	16.8	3.0	0.2	1,767.5

¹ Number of live births to women aged 45 and over per 1,000 women 45-49 years of age.

Source: Population figures used for 1920-1970 rates are from General Population Characteristics Michigan, USBC, 1971, with arithmetic extrapolation between census years. For 1971-1988 population source, see Technical Notes.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.4 (continued)
Live Birth Rates by Age of Mother
 Michigan Residents, 1920 - 1989
 (Live birth rates are per 1,000 women per year. Total fertility rate is total children to 1,000 women in their lifetime assuming constant live birth rates.)

Year	Age of Mother								Total Fertility Rate
	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45+ ¹	
1980	0.8	44.8	113.1	115.6	58.4	16.4	3.1	0.1	1,761.5
1981	0.8	41.3	103.5	110.8	59.5	16.2	3.0	0.2	1,676.5
1982	0.9	39.2	98.0	107.6	59.2	18.4	3.1	0.1	1,632.5
1983	0.9	37.9	89.8	104.0	58.0	19.3	3.6	0.2	1,722.5
1984	1.0	43.8	103.8	111.4	65.2	19.3	3.0	0.1	1,738.0
1985	1.0	43.9	104.1	115.1	67.1	20.5	3.1	0.2	1,775.0
1986	1.0	45.2	101.6	114.4	68.3	21.8	2.9	0.1	1,776.5
1987	1.0	46.9	102.3	117.1	71.5	22.9	3.3	0.2	1,826.0
1988	1.1	47.8	99.2	115.8	73.0	23.9	3.6	0.2	1,823.0
1989	1.2	54.6	105.7	122.3	78.2	26.4	3.8	0.2	1,962.0

¹ Number of live births to women aged 45 and over per 1,000 women 45-49 years of age.

Source: Population figures used for 1920-1970 rates are from General Population Characteristics Michigan, USBC, 1971, with arithmetic extrapolation between census years. For 1971-1989 population source, see Technical Notes.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.5
Reported Cases of Certain Communicable Diseases
 Michigan Residents, 1900 - 1989

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis, All Types	TB ² (all forms)	Meningo-coccal Infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
1900	2,706	694	5,122	3,375	20,356		2,721	654				
1901	2,498	5,088	3,002	2,955	4,629		2,915	506				
1902	2,993	7,086	2,456	3,534	11,978		2,658	528				
1903	3,670	6,341	2,840	4,172	8,941		2,745	525				
1904	3,510	5,753	3,028	1,779	10,386		2,928	448				
1905	2,159	2,985	2,774	1,196	6,061		2,590	577				
1906	3,648	1,240	3,163	1,364	7,403		2,653	533				
1907	2,935	1,712	1,953	872	12,139		2,699	575				
1908	2,658	2,306	2,656	1,248	4,775		2,705	487				
1909	3,109	1,533	2,694	1,054	9,047		3,423	457				
1910	3,433	3,319	3,361	1,136	13,934		4,415	522	104			
1911	3,762	898	2,660	1,897	9,639		5,254	478	68			
1912	3,294	1,127	2,847	1,255	2,834		1,958	88	78			
1913	5,505	1,995	2,253	929	9,185		1,920	165	56			
1914	5,149	1,527	2,167	1,822	11,356		2,566	205	49			
1915	4,386	1,094	1,956	2,258	4,438		3,648	107	95			
1916	5,625	1,581	2,513	1,837	12,143		7,076	163	598			
1917	8,499	3,674	1,723	3,211	14,472		4,856	75	91			
1918	6,128	5,241	1,399	2,563	6,726		3,655	95	121			
1919	7,896	2,381	1,254	1,829	8,885		4,231	75	155	5,077	7,910	
1920	10,360	4,818	1,421	7,171	22,364		4,994	203	67	8,117	11,463	
1921	12,075	4,512	1,837	6,696	3,043		5,708	173	483	7,421	9,774	
1922	8,513	1,230	1,108	5,642	12,107		5,573	159	43	7,900	9,717	
1923	7,725	2,311	982	7,617	30,041		5,471	186	39	10,480	9,597	
1924	6,011	4,527	782	4,364	18,290		5,570	157	647	13,000	10,490	
1925	3,925	784	962	7,576	10,332		5,785	128	99	14,668	10,660	
1926	5,377	549	583	8,776	39,946		5,387	96	107	14,872	10,707	
1927	4,575	1,467	581	6,818	8,303		5,406	138	282	15,713	9,318	
1928	3,724	1,335	390	9,700	27,039		5,885	276	77	15,323	8,592	
1929	4,618	2,410	310	9,340	18,040		6,248	1,864	180	16,606	9,661	

¹ Meningococcal infections prior to 1952 data were for meningococcal meningitis.

² Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, case counts and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.

Source: Bureau of Disease Control and Laboratory Services, Division of Epidemiology, MDPH.

Table 4.5 (continued)
Reported Cases of Certain Communicable Diseases
Michigan Residents, 1900 - 1989

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis, All Types	TB ² (all forms)	Meningo- ¹ coccal Infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
1930	3,206	2,375	504	7,937	28,129		5,128	901	208	16,538	8,554	
1931	1,831	915	424	11,448	6,212		6,132	293	1,137	14,662	7,843	
1932	1,188	222	513	13,091	42,129		7,103	129	112	11,969	6,963	
1933	1,152	46	453	11,720	21,654		6,624	86	93	7,691	6,447	
1934	614	49	486	11,255	6,528		5,264	53	230	6,483	6,188	
1935	645	16	355	13,427	79,061		4,642	113	614	6,416	6,372	
1936	661	32	287	14,287	2,453		5,157	120	152	6,401	6,460	
1937	842	152	241	11,426	6,154		6,469	87	421	8,708	7,072	
1938	619	274	285	14,563	79,400		6,335	69	59	14,684	7,046	
1939	452	371	177	8,997	12,948		6,119	46	904	13,144	6,364	
1940	264	76	120	11,757	20,206		6,063	49	1,228	9,999	7,650	
1941	242	114	147	16,512	70,748		5,371	49	270	11,370	8,767	
1942	243	17	74	11,602	8,569		5,720	66	162	12,461	8,753	
1943	281	18	115	12,091	51,764		6,546	757	255	15,933	9,526	
1944	419	10	78	4,049	26,711		6,419	857	884	17,288	11,987	
1945	630	16	59	5,339	6,328	134	5,471	270	215	16,046	12,565	
1946	385	3	85	8,116	42,261	34	5,548	185	1,091	18,051	12,635	
1947	238	1	77	10,472	9,574	14	6,470	113	646	15,276	10,989	
1948	126	-	49	2,668	42,952	9	6,109	107	775	12,100	9,448	
1949	119	-	48	4,157	20,279	28	5,953	120	2,909	8,740	9,427	
1950	84	-	43	9,184	38,245	48	5,538	133	2,029	8,830	8,678	
1951	48	-	33	3,156	15,227	325	6,144	138	1,463	6,532	8,494	
1952	45	-	53	1,992	32,941	283	6,152	169	3,912	7,377	7,691	
1953	12	-	31	2,932	23,334	868	5,643	151	2,346	5,619	8,790	
1954	57	-	30	5,620	40,725	1,419	5,764	150	2,168	4,686	9,940	
1955	59	-	24	4,249	23,882	1,244	5,488	170	1,177	4,865	10,306	
1956	220	-	56	1,907	41,966	814	5,515	182	656	4,785	9,598	
1957	130	-	12	1,363	19,070	657	5,011	175	498	4,571	8,428	
1958	6	-	18	1,233	41,448	688	5,587	228	1,228	4,267	8,621	
1959	3	-	8	3,001	12,234	1,136	4,743	141	448	3,421	8,033	

¹ Meningococcal infections prior to 1952 data were for meningococci meningitis.

² Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, case counts and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.
Source: Bureau of Disease Control and Laboratory Services, Division of Epidemiology, MDPH.

Table 4.5 (continued)
 Reported Cases of Certain Communicable Diseases
 Michigan Residents, 1900 - 1989

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis, All Types	TB ² (all forms)	Meningo- ¹ coccal Infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
1960	9	-	14	1,129	36,161	2,113	4,127	169	88	3,647	8,372	
1961	3	-	7	639	29,391	4,607	3,838	253	40	3,309	9,505	
1962	4	-	12	1,756	25,303	3,280	3,474	139	21	4,331	11,654	
1963	5	-	14	1,410	48,752	2,661	3,298	104	18	5,512	11,043	
1964	1	-	13	957	30,897	2,472	3,047	80	3	5,220	12,028	
1965	1	-	7	612	28,132	2,625	3,069	107	1	5,638	14,319	
1966	1	-	7	653	15,251	2,589	3,259	135	1	5,842	15,424	
1967	1	-	8	1,058	1,048	1,915	2,951	76	3	5,581	17,088	
1968	-	-	1	429	353	2,356	2,618	94	3	5,351	18,153	
1969	-	-	6	192	401	3,359	2,133	114	1	3,809	18,534	
1970	-	-	14	195	1,834	4,594	1,992	69	2	3,920	20,359	
1971	1	-	10	140	2,659	4,828	1,789	64	-	4,800	22,260	
1972	1	-	7	116	2,353	4,322	1,632	55	1	4,891	24,750	
1973	1	-	14	86	4,552	3,872	1,473	54	-	4,375	31,086	
1974	-	-	11	104	2,365	3,599	1,431	54	2	2,722	32,067	
1975	1	-	10	98	3,253	2,877	1,271	76	-	1,638	32,583	
1976	-	-	10	70	6,139	2,645	1,349	65	1	1,089	34,836	
1977	-	-	13	73	1,392	2,686	1,290	51	-	1,185	36,794	
1978	-	-	15	47	8,006	2,174	1,260	87	1	1,133	36,647	
1979	-	-	14	102	869	2,036	1,043	79	-	1,275	36,906	
1980	1	-	12	38	250	1,799	1,185	77	1	1,110	35,125	2
1981	-	-	26	30	34	1,700	966	93	-	926	32,316	2
1982	-	-	14	34	64	1,745	932	81	-	917	32,286	16
1983	-	-	10	43	8	1,788	842	91	-	695	34,052	31
1984	-	-	9	31	465	1,728	630	90	-	763	34,758	64
1985	-	-	8	54	113	1,490	535	107	-	673	33,516	149
1986	-	-	5	35	185	1,266	613	81	1	584	37,920	260
1987	-	-	5	54	42	1,610	540	111	-	621	37,348	439
1988	-	-	5	38	54	1,202	526	92	-	1,105	37,412	510
1989	-	-	6	48	359	1,044	464	70	-	1,613	33,627	

¹ Meningococcal infections prior to 1952 data were for meningococci meningitis.

² Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, case counts and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.

Source: Bureau of Disease Control and Laboratory Services, Division of Epidemiology, MDJFH.

Table 4.6
Case Rates of Certain Reported Communicable Diseases
Michigan Residents, 1900 - 1989
(Rates per 100,000 population)

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis, All Types	TB ² (all forms)	Meningo- ¹ coccal Infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
1900	111.8	28.7	211.6	139.4	840.8		112.4	27.0				
1901	101.5	206.8	122.0	120.1	188.2		118.5	20.6				
1902	119.8	283.6	98.3	141.4	479.3		106.4	21.1				
1903	144.6	249.9	111.9	164.4	352.3		108.2	20.7				
1904	136.2	223.3	117.5	69.0	403.1		113.6	17.4				
1905	82.5	114.1	106.1	45.7	231.7		99.0	22.1				
1906	137.4	46.7	119.2	51.4	278.9		99.9	20.1				
1907	109.0	63.6	72.5	32.4	450.7		100.2	21.3				
1908	97.3	84.4	97.2	45.7	174.8		99.0	17.8				
1909	112.2	55.3	97.2	38.0	326.5		123.5	16.5				
1910	122.2	118.1	119.6	40.4	495.8		157.1	18.6	3.7			
1911	129.9	31.0	91.8	65.5	332.8		181.4	16.5	2.3			
1912	110.5	37.8	95.5	42.1	95.0		65.7	3.0	2.6			
1913	179.5	65.0	73.4	30.3	299.4		62.6	5.4	1.8			
1914	163.3	48.4	68.7	57.8	360.1		81.4	6.5	1.6			
1915	135.4	33.8	60.4	69.7	137.0		112.6	3.3	2.9			
1916	169.2	47.5	75.6	55.2	365.2		212.8	4.9	18.0			
1917	249.2	107.7	50.5	94.1	424.3		142.4	2.2	2.7			
1918	175.2	149.9	38.3	73.3	192.4		104.5	2.7	3.5			
1919	220.4	66.5	35.0	51.1	248.0		118.1	2.1	4.3	141.7	220.8	
1920	282.4	131.3	38.7	195.5	609.6		136.1	5.5	1.8	221.3	312.5	
1921	318.9	119.2	48.5	176.9	80.4		150.8	4.6	12.8	196.0	258.2	
1922	218.1	31.5	28.4	144.5	310.2		142.8	4.1	1.1	202.4	248.9	
1923	192.1	57.5	24.4	189.5	747.2		136.1	4.6	1.0	260.7	238.7	
1924	145.3	109.4	18.9	105.5	442.0		134.6	3.8	15.6	314.2	253.5	
1925	92.2	18.4	22.6	178.0	242.8		135.9	3.0	2.3	344.7	250.5	
1926	123.0	12.6	13.3	200.7	913.5		123.2	2.2	2.4	340.1	244.9	
1927	101.9	32.7	12.9	151.8	184.9		120.4	3.1	6.3	349.9	207.5	
1928	80.8	29.0	8.5	210.5	586.9		127.7	6.0	1.7	332.6	186.5	
1929	97.7	51.0	6.6	197.7	381.8		132.2	39.4	3.8	351.4	204.5	

¹ Meningococcal infections prior to 1952 data were for meningococcal meningitis.

² Effective January, 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, case counts and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.
Source: Bureau of Disease Control and Laboratory Services, Division of Epidemiology, MDPH.

Table 4.6 (continued)
Case Rates of Certain Reported Communicable Diseases
Michigan Residents, 1900 - 1989 (Rates per 100,000 population)

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis, All Types	TB ² (all forms)	Meningo- ¹ coccal Infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
1930	66.2	49.0	10.4	163.9	580.9		105.9	18.6	4.3	341.5	176.6	
1931	37.5	18.7	8.7	234.4	127.2		125.6	6.0	23.3	300.2	160.6	
1932	24.1	4.5	10.4	265.8	855.4		144.2	2.6	2.3	243.0	141.4	
1933	23.2	0.9	9.1	236.0	436.0		133.4	1.7	1.9	154.9	129.8	
1934	12.3	1.0	9.7	224.8	130.4		105.1	1.1	4.6	129.5	123.6	
1935	12.8	0.3	7.0	265.9	1,565.8		91.9	2.2	12.2	127.1	126.2	
1936	13.0	0.6	5.6	280.7	48.2		101.3	2.4	3.0	125.7	126.9	
1937	16.4	3.0	4.7	222.6	119.9		126.1	1.7	8.2	169.7	137.8	
1938	12.0	5.3	5.5	281.5	1,534.8		122.5	1.3	1.1	283.8	136.2	
1939	8.7	7.1	3.4	172.5	248.3		117.3	0.9	17.3	252.0	122.0	
1940	5.0	1.4	2.3	223.7	384.4		115.3	0.9	23.4	190.2	145.5	
1941	4.5	2.1	2.7	303.7	1,301.1		98.8	0.9	5.0	209.1	161.2	
1942	4.4	0.3	1.3	209.5	154.7		103.3	1.2	2.9	225.0	158.0	
1943	5.2	0.3	2.1	224.8	962.6		121.7	14.1	4.7	296.3	177.1	
1944	7.8	0.2	1.5	75.3	496.7		119.4	15.9	16.4	321.5	222.9	
1945	11.6	0.1	1.1	98.2	116.4	2.5	100.7	5.0	4.0	295.2	231.2	
1946	6.7	0.1	1.5	142.2	740.3	0.6	97.2	3.2	19.1	316.2	221.3	
1947	3.9	0.0	1.3	172.5	157.8	0.2	106.6	1.9	10.6	251.7	181.1	
1948	2.0	-	0.8	43.1	693.3	0.1	98.6	1.7	12.5	195.3	152.5	
1949	1.9	-	0.8	65.4	319.3	0.4	93.7	1.9	45.8	137.6	148.4	
1950	1.3	-	0.7	144.1	600.2	0.8	86.9	2.1	31.8	138.6	136.2	
1951	0.7	-	0.5	48.2	232.7	5.0	93.9	2.1	22.4	99.8	129.8	
1952	0.7	-	0.8	29.7	491.1	4.2	91.7	2.5	58.3	110.0	114.7	
1953	0.2	-	0.5	42.8	340.5	12.7	82.4	2.2	34.2	82.0	128.3	
1954	0.8	-	0.4	80.0	579.8	20.2	82.1	2.1	30.9	66.7	141.5	
1955	0.8	-	0.3	58.7	330.0	17.2	75.8	2.3	16.3	67.2	142.4	
1956	2.9	-	0.7	25.4	558.4	10.8	73.4	2.4	8.7	63.7	127.7	
1957	1.7	-	0.2	17.5	244.4	8.4	64.2	2.2	6.4	58.6	108.0	
1958	0.1	-	0.2	15.7	526.9	8.7	71.0	2.9	15.6	54.2	109.6	
1959	0.0	-	0.1	37.7	153.7	14.3	59.6	1.8	5.6	43.0	100.9	

¹ Meningococcal infections prior to 1952 data were for meningococcal meningitis.

² Effective January, 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, case counts and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.

Source: Bureau of Disease Control and Laboratory Services, Division of Epidemiology, MDPH.

Table 4.6 (continued)
Case Rates of Certain Reported Communicable Diseases
Michigan Residents, 1900 - 1989 (Rates per 100,000 population)

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis, All Types	TB ² (all forms)	Meningo- ¹ coccal Infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
1960	0.1	-	0.2	14.4	462.2	27.0	52.8	2.2	1.1	46.6	107.0	
1961	0.0	-	0.1	8.1	371.9	58.3	48.6	3.2	0.5	41.9	120.3	
1962	0.1	-	0.2	22.1	318.7	41.3	43.8	1.8	0.3	54.6	146.8	
1963	0.1	-	0.2	17.6	607.1	33.1	41.1	1.3	0.2	68.6	137.5	
1964	0.0	-	0.2	11.8	381.4	30.5	37.6	1.0	0.0	64.4	148.5	
1965	-	-	0.1	7.5	343.1	32.0	37.4	1.3	0.0	68.8	174.6	
1966	0.0	-	0.1	7.9	183.4	31.1	39.2	1.6	0.0	70.3	185.5	
1967	0.0	-	0.1	12.3	12.2	22.2	34.2	0.9	0.0	64.8	198.4	
1968	-	-	0.0	4.9	4.1	27.2	30.2	1.1	0.0	61.7	209.3	
1969	-	-	0.1	2.2	4.6	38.5	24.4	1.3	0.0	43.6	212.2	
1970	-	-	0.2	2.2	20.7	51.8	22.4	0.8	0.0	44.2	229.4	
1971	0.0	-	0.1	1.6	29.6	53.8	19.9	0.7	-	53.5	248.1	
1972	0.0	-	0.1	1.3	26.1	47.9	18.1	0.6	0.0	54.2	274.2	
1973	-	-	0.2	0.9	50.2	42.7	16.2	0.6	-	48.2	342.7	
1974	-	-	0.1	1.1	26.0	39.5	15.7	0.6	0.0	29.9	352.0	
1975	0.0	-	0.1	1.1	35.7	31.6	14.0	0.8	-	18.0	357.7	
1976	-	-	0.1	0.8	67.3	29.0	14.8	0.7	0.0	11.9	382.1	
1977	-	-	0.1	0.8	15.2	29.3	14.1	0.6	-	12.9	401.8	
1978	-	-	0.2	0.5	87.0	23.6	13.7	0.9	0.0	12.3	398.3	
1979	-	-	0.2	1.1	9.4	22.0	11.4	0.9	-	13.6	396.0	
1980	0.0	-	0.1	0.4	2.7	19.4	12.6	0.8	0.0	12.6	377.4	
1981	-	-	0.3	0.3	0.4	18.3	10.0	1.0	-	11.4	350.9	0.0
1982	-	-	0.2	0.4	0.7	18.9	9.4	0.9	-	10.0	356.0	0.0
1983	-	-	0.1	0.5	0.1	19.5	8.6	1.0	-	8.0	372.1	0.2
1984	-	-	0.1	0.3	5.1	19.0	7.3	1.0	-	8.3	383.9	0.5
1985	-	-	0.1	0.6	0.7	16.4	5.9	1.2	-	7.2	368.8	0.9
1986	-	-	0.1	0.4	0.2	13.8	6.8	0.9	-	6.4	414.8	1.6
1987	-	-	0.1	0.6	0.5	17.5	5.9	1.2	0.0	6.8	503.8	2.4
1988	-	-	0.1	0.4	0.3	13.0	5.5	1.0	-	11.0	405.1	3.9
1989	-	-	0.1	0.5	3.9	11.3	5.0	0.8	-	17.4	362.6	5.5

¹ Meningococcal infections prior to 1962 data were for meningococcal meningitis.

² Effective January, 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, case counts and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.
Source: Bureau of Disease Control and Laboratory Services, Division of Epidemiology, MDPH.

Table 4.7
Number of Deaths and Death Rates for Certain Communicable Diseases
 Michigan Residents, 1900 - 1989
(Rates per 100,000 population)

Year	Diphtheria		Srep. Sore Throat Incl. Scarlet Fever		Smallpox		Typhoid Fever		Whooping Cough		Measles		TB of the Respiratory System		Tuberculosis ² (all forms)		Poliomyelitis		Syphilis		Gonorrhea	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1900	529	21.9	272	11.2	9	0.4	869	35.9	208	8.6	342	14.1	2,018	83.4	2,500	103.3			88	3.6		
1901	504	20.4	312	12.7	27	1.1	645	26.2	163	6.6	79	3.2	2,152	87.5	2,548	103.6			114	4.6		
1902	504	20.2	277	11.1	42	1.7	608	24.3	289	11.6	238	9.5	2,088	83.6	2,462	98.5			130	5.2		
1903	686	27.0	200	7.9	29	1.1	606	23.9	383	15.1	176	6.9	2,155	84.9	2,562	101.0			101	4.0		
1904	515	20.0	210	8.1	26	1.0	641	24.9	148	5.7	194	7.5	2,306	89.5	2,761	107.2			89	3.5		
1905	478	18.3	123	4.7	74	2.8	636	24.3	131	5.0	123	4.7	2,288	87.5	2,732	104.5			89	3.4		
1906	472	17.8	227	8.6	3	0.1	721	27.2	469	17.7	251	9.5	2,303	86.8	2,737	103.1			94	3.6		
1907	421	15.6	159	5.9	8	0.3	594	22.1	223	8.3	256	9.5	2,338	86.8	2,728	101.3			94	3.6		
1908	343	12.6	194	7.1	11	0.4	687	25.1	305	11.2	121	4.4	2,249	82.3	2,706	99.0			118	4.5		
1909	395	14.3	275	9.9	4	0.1	653	23.6	217	7.8	270	9.7	2,237	80.7	2,629	94.9			127	4.8		
1910	495	17.6	297	10.6	121	4.3	654	23.3	318	11.3	251	8.9	2,273	80.9	2,756	98.1	52	1.9	65	2.3		
1911	473	16.3	208	7.2	7	0.2	551	19.0	254	8.8	200	6.9	2,284	78.9	2,766	95.5	55	1.9	104	3.6		
1912	465	15.6	186	6.2	3	0.1	534	17.9	252	8.5	118	4.0	2,289	76.8	2,744	92.0	48	1.7	90	3.1		
1913	676	22.0	283	9.2	5	0.2	538	17.5	292	9.5	258	8.4	2,243	73.1	2,703	88.1	43	1.5	136	4.6		
1914	507	16.1	177	5.6	2	0.1	400	12.7	304	9.6	180	5.7	2,325	73.7	2,799	88.8	41	1.4	160	5.3		
1915	354	10.9	107	3.3	5	0.2	353	10.9	236	7.3	101	3.1	2,527	78.0	2,986	92.2	36	1.2	163	5.3		
1916	507	15.2	177	5.3	2	0.1	424	12.8	228	6.9	363	10.9	2,573	77.4	3,070	92.3	141	4.6	206	6.7		
1917	851	24.9	340	10.0	9	0.3	386	11.3	360	10.6	259	7.6	2,779	81.5	3,310	97.0	44	1.4	224	7.1		
1918	686	19.6	181	5.2	18	0.5	337	9.6	496	14.2	270	7.7	3,059	87.5	3,612	103.3	58	1.8	290	9.1		
1919	764	21.3	179	5.0	10	0.3	272	7.6	172	4.8	183	5.1	2,620	73.1	3,127	87.3	80	2.2	299	8.2		
1920	888	24.2	305	8.3	14	0.4	297	8.1	511	13.9	436	11.9	2,645	72.1	3,149	85.8	30	0.8	314	8.4	14	0.4
1921	954	25.2	334	8.8	12	0.3	285	7.5	316	8.3	58	1.5	2,285	60.4	2,736	72.3	100	2.6	226	5.9	6	0.2
1922	620	15.9	217	5.6	20	0.5	192	4.9	232	5.9	232	5.9	2,232	57.2	2,654	68.0	21	0.5	186	4.7	5	0.1
1923	675	16.8	304	7.6	13	0.3	202	5.0	323	8.0	258	6.4	2,410	59.8	2,837	70.6	18	0.5	262	6.8	13	0.3
1924	470	11.4	265	6.4	226	5.5	149	3.6	169	4.1	221	5.3	2,474	59.9	2,952	71.3	116	3.0	271	7.0	27	0.6
1925	358	8.4	208	4.9	22	0.5	157	3.7	260	6.1	69	1.6	2,410	56.6	2,830	66.5	31	0.7	282	6.6	12	0.3
1926	677	15.5	235	5.4	4	0.1	119	2.7	355	8.1	577	13.2	2,601	59.5	3,041	69.5	34	0.8	327	7.5	12	0.3
1927	516	11.5	168	3.7	-	-	94	2.1	201	4.5	67	1.5	2,514	56.0	2,952	65.7	69	1.5	305	6.8	16	0.4
1928	384	8.3	178	3.9	9	0.2	83	1.8	219	4.8	303	6.6	2,647	57.4	3,108	67.5	27	0.6	384	8.4	19	0.4
1929	498	10.5	145	3.1	9	0.2	81	1.7	255	5.4	146	3.1	2,685	56.8	3,140	66.5	50	1.1	397	8.4	19	0.4

¹ From 1901 through 1920, syphilis includes all other venereal diseases, beginning with 1968 excludes aortic aneurysms not specified as syphilitic.

² Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, deaths and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.7 (continued)
 Number of Deaths and Death Rates for Certain Communicable Diseases
 Michigan Residents, 1900 - 1989 (Rates per 100,000 population)

Year	Diphtheria		Strep. Sore Throat Incl. Scarlet Fever		Smallpox		Typhoid Fever		Whooping Cough		Measles		TB of the Respiratory System		Tuberculosis ² (all forms)		Poliomyelitis		Syphilis		Gonorrhea	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1930	299	6.2	130	2.7	9	0.2	87	1.8	176	3.6	231	4.8	2,443	50.5	2,912	60.1	39	0.8	395	8.2	12	0.2
1931	172	3.5	122	2.5	4	0.1	73	1.5	190	3.9	28	0.6	2,263	46.3	2,660	54.5	108	2.2	361	7.4	3	0.1
1932	106	2.2	112	2.3	1	0.0	56	1.1	199	4.0	183	3.7	2,101	42.7	2,463	50.0	23	0.5	377	7.7	2	0.0
1933	112	2.3	157	3.2	-	-	50	1.0	153	3.1	111	2.2	1,996	40.2	2,348	47.3	5	0.1	327	6.6	7	0.1
1934	38	0.8	171	3.4	-	-	65	1.3	141	2.8	36	0.7	1,909	38.1	2,199	43.9	25	0.5	402	8.0	10	0.2
1935	58	1.1	98	1.9	-	-	34	0.7	132	2.6	184	3.6	1,741	34.5	2,044	40.5	32	0.6	393	7.8	3	0.1
1936	52	1.0	114	2.2	-	-	37	0.7	107	2.1	12	0.2	1,816	35.7	2,100	41.3	21	0.4	394	7.7	6	0.1
1937	72	1.4	148	2.9	1	0.0	29	0.6	132	2.6	11	0.2	1,860	36.2	2,119	41.3	51	1.0	401	7.8	8	0.2
1938	44	0.9	87	1.7	-	-	23	0.4	116	2.2	100	1.9	1,633	31.6	1,866	36.1	10	0.2	401	7.8	8	0.2
1939	25	0.5	69	1.3	-	-	25	0.5	76	1.5	29	0.6	1,651	31.7	1,881	36.1	40	0.8	389	7.5	4	0.1
1940	20	0.4	41	0.8	1	0.0	11	0.2	59	1.1	19	0.4	1,547	29.4	1,752	33.3	72	1.4	591	11.2	3	0.0
1941	18	0.3	32	0.6	1	0.0	14	0.3	91	1.7	65	1.2	1,532	28.2	1,723	31.7	18	0.3	537	9.9	1	0.0
1942	24	0.4	23	0.4	-	-	5	0.1	72	1.3	8	0.1	1,630	29.4	1,827	33.0	10	0.2	559	10.1	7	0.1
1943	21	0.4	11	0.2	-	-	9	0.2	101	1.9	89	1.7	1,588	29.5	1,802	33.5	27	0.5	579	10.8	3	0.0
1944	32	0.6	7	0.1	1	0.0	7	0.1	33	0.6	49	0.9	1,544	28.7	1,748	32.5	45	0.8	543	10.1	2	0.0
1945	46	0.8	9	0.2	-	-	3	0.1	36	0.7	10	0.2	1,591	29.3	1,758	32.3	20	0.4	527	9.7	2	0.0
1946	27	0.5	3	0.1	-	-	6	0.1	44	0.8	47	0.8	1,645	28.8	1,843	32.3	89	1.6	547	9.6	-	-
1947	23	0.4	6	0.1	-	-	5	0.1	63	1.0	5	0.1	1,483	24.4	1,643	27.1	29	0.5	502	8.3	3	0.0
1948	8	0.1	1	0.0	-	-	4	0.1	9	0.1	43	0.7	1,395	22.5	1,561	25.2	54	0.9	512	8.3	-	-
1949	11	0.2	4	0.1	-	-	1	0.0	22	0.3	33	0.5	1,254	19.7	1,400	22.0	216	3.4	455	7.2	-	-
1950	2	0.0	1	0.0	-	-	5	0.1	28	0.4	28	0.4	1,134	17.8	1,270	19.9	128	2.0	325	5.1	1	0.0
1951	6	0.1	-	-	-	-	1	0.0	21	0.3	11	0.2	1,049	16.0	1,154	17.6	67	1.0	299	4.6	1	0.0
1952	2	0.0	-	-	-	-	-	-	8	0.1	17	0.3	689	10.3	775	11.6	213	3.2	174	2.6	2	0.0
1953	2	0.0	1	0.0	-	-	-	-	11	0.2	16	0.2	536	7.8	607	8.9	108	1.6	182	2.7	1	0.0
1954	3	0.0	3	0.0	-	-	-	-	17	0.2	17	0.2	471	6.7	530	7.5	89	1.3	139	2.0	2	0.0
1955	1	0.0	1	0.0	-	-	1	0.0	8	0.1	10	0.1	435	6.0	477	6.6	32	0.4	115	1.6	1	0.0
1956	6	0.1	3	0.0	-	-	-	-	6	0.1	26	0.3	426	5.7	466	6.2	22	0.3	114	1.5	4	0.1
1957	1	0.0	-	-	-	-	-	-	6	0.1	23	0.3	403	5.2	442	5.7	15	0.2	105	1.3	4	0.1
1958	-	-	-	-	-	-	-	-	1	0.0	18	0.2	357	4.5	395	5.0	37	0.5	84	1.1	8	0.1
1959	1	0.0	2	0.0	-	-	1	0.0	5	0.1	11	0.1	335	4.2	370	4.6	17	0.2	84	1.1	4	0.1

¹ From 1901 through 1920, syphilis includes all other venereal diseases, beginning with 1968 excludes aortic aneurysms not specified as syphilitic.

² Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, deaths and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.
 Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.7 (continued)
 Number of Deaths and Death Rates for Certain Communicable Diseases
 Michigan Residents, 1900 - 1989 (Rates per 100,000 population)

Year	Diphtheria		Strep. Sore Throat Incl. Scarlet Fever		Smallpox		Typhoid Fever		Whooping Cough		Measles		TB of the Respiratory System		Tuberculosis ² (all forms)		Poliomyelitis		Syphilis		Gonorrhea		
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1960	2	0.0	1	0.0	-	-	-	-	1	0.0	17	0.2	364	4.7	390	5.0	4	0.1	79	1.0	7	0.1	
1961	1	0.0	1	0.0	-	-	-	-	2	0.0	13	0.2	307	3.9	332	4.2	2	0.0	71	0.9	7	0.1	
1962	2	0.0	1	0.0	-	-	-	-	2	0.0	8	0.1	307	3.9	331	4.2	1	0.0	94	1.2	3	0.0	
1963	-	-	-	-	-	-	-	-	-	-	27	0.3	276	3.4	299	3.7	1	0.0	72	0.9	1	0.0	
1964	-	-	-	-	-	-	-	-	2	0.0	11	0.1	288	3.6	315	3.9	1	0.0	66	0.8	3	0.0	
1965	-	-	-	-	-	-	-	-	-	-	5	0.1	261	3.2	285	3.5	-	-	65	0.8	2	0.0	
1966	1	0.0	-	-	-	-	-	-	-	-	7	0.1	284	3.4	301	3.6	-	-	63	0.8	-	-	
1967	-	-	-	-	-	-	-	-	-	-	3	0.0	206	2.4	226	2.6	-	-	44	0.5	1	0.0	
1968	-	-	1	0.0	-	-	-	-	-	-	-	-	203	2.3	262	3.0	2	0.0	29	0.3	1	0.0	
1969	-	-	-	-	-	-	-	-	-	-	-	-	147	1.7	201	2.3	-	-	26	0.3	1	0.0	
1970	-	-	-	-	-	-	-	-	-	-	1	0.0	134	1.5	180	2.0	-	-	17	0.2	2	0.0	
1971	-	-	-	-	-	-	-	-	-	-	-	-	122	1.4	173	1.9	-	-	18	0.2	-	-	
1972	-	-	-	-	-	-	-	1	0.0	-	-	-	111	1.2	157	1.7	1	0.0	12	0.1	-	-	
1973	-	-	-	-	-	-	-	-	-	1	0.0	2	0.0	138	1.5	138	1.5	3	0.0	12	0.1	-	-
1974	-	-	-	-	-	-	-	-	-	2	0.0	-	-	142	1.6	142	1.6	3	0.0	11	0.1	-	-
1975	-	-	-	-	-	-	-	-	-	1	0.0	1	0.0	110	1.2	110	1.2	5	0.1	10	0.1	1	0.0
1976	-	-	-	-	-	-	-	-	-	-	-	-	80	0.9	102	1.1	6	0.1	11	0.1	-	-	
1977	-	-	1	0.0	-	-	-	-	-	-	-	-	67	0.7	97	1.1	6	0.1	3	0.0	-	-	
1978	-	-	-	-	-	-	-	-	-	1	0.0	1	0.0	60	0.7	80	0.9	2	0.0	5	0.1	-	-
1979	-	-	-	-	-	-	-	-	-	-	-	-	47	0.5	62	0.7	2	0.0	9	0.1	-	-	
1980	-	-	-	-	-	-	-	-	-	-	-	-	51	0.6	61	0.7	-	-	1	0.0	1	0.0	
1981	-	-	-	-	-	-	-	1	0.0	-	-	-	41	0.4	53	0.6	-	-	4	0.0	1	0.0	
1982	-	-	-	-	-	-	-	-	-	-	1	0.0	30	0.3	41	0.4	-	-	-	-	-	-	
1983	-	-	1	0.0	-	-	-	-	-	-	1	0.0	28	0.3	39	0.4	-	-	3	0.0	-	-	
1984	-	-	-	-	-	-	-	-	-	-	-	-	47	0.5	59	0.7	-	-	2	0.0	-	-	
1985	-	-	-	-	-	-	-	-	-	-	-	-	37	0.4	46	0.5	-	-	3	0.0	-	-	
1986	-	-	-	-	-	-	-	-	-	-	-	-	36	0.4	44	0.5	-	-	2	0.0	-	-	
1987	-	-	-	-	-	-	-	-	-	-	-	-	39	0.4	46	0.5	-	-	2	0.0	-	-	
1988	-	-	1	0.0	-	-	-	-	1	0.0	-	-	36	0.4	42	0.5	-	-	2	0.0	-	-	
1989	-	-	-	-	-	-	-	-	-	-	-	-	31	0.3	32	0.3	-	-	-	-	-	-	

¹ From 1901 through 1920, syphilis includes all other venereal diseases, beginning with 1968 excludes aortic aneurysms not specified as syphilitic.
² Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, deaths and rates prior to 1975 are not directly comparable to the figures in 1975 and later years.
 Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.8
Number of Deaths and Death Rates by Specified Causes
 Michigan Residents, 1900 - 1989
(Rates per 100,000 population)

Year	Heart Disease		Cancer (all forms) ¹		Cerebrovascular Disease		Accidents (all forms) ³		Motor Vehicle Accidents ⁴		Diabetes		Pneumonia		Chronic Liver Disease & Cirrhosis ⁵		Atherosclerosis ⁶	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1900	2,836	117.1	1,460	60.3	2,136	88.2	1,740	71.9			224	9.3	2,388	98.6				
1901	3,040	123.6	1,484	60.3	2,147	87.3	1,901	77.3			264	10.7	2,901	117.9				
1902	3,302	132.1	1,483	59.3	2,097	83.9	1,796	71.9			289	11.6	2,637	105.5				
1903	3,702	145.9	1,694	66.8	2,321	91.5	2,017	79.5			265	10.4	2,607	102.7				
1904	3,981	154.5	1,728	67.1	2,431	94.3	2,035	79.0			298	11.6	2,646	102.7				
1905	3,715	142.0	1,693	64.7	2,405	91.9	2,034	77.8			267	10.2	2,417	92.4				
1906	3,933	148.2	1,736	65.4	2,554	96.2	2,126	80.1			311	11.7	2,621	98.7				
1907	4,269	158.5	1,747	64.9	2,690	99.9	2,209	82.0			352	13.1	3,018	112.0				
1908	4,202	153.8	1,921	70.3	2,630	96.3	2,036	74.5			359	13.1	2,313	84.7				
1909	4,354	157.1	1,948	70.3	2,739	98.8	1,903	68.7			374	13.5	2,265	81.7				
1910	4,581	163.0	2,105	74.9	3,091	110.0	2,158	76.8	49	1.7	398	14.2	2,785	99.1	282	10.0		
1911	4,639	160.2	2,142	74.0	2,916	100.7	2,121	73.2	44	1.5	373	12.9	2,763	95.4				
1912	5,324	178.5	2,291	76.8	2,707	90.8	2,005	67.2	75	2.5	448	15.0	2,796	93.8				
1913	4,908	160.0	2,398	77.8	2,834	92.4	2,333	76.1	132	4.3	483	15.7	3,082	100.5				
1914	5,124	162.5	2,414	76.6	2,993	94.9	2,108	66.8	120	3.8	503	16.0	2,909	92.2				
1915	5,538	171.0	2,567	79.2	3,384	104.5	2,219	68.5	190	5.9	498	15.4	3,229	99.7				
1916	5,819	175.0	2,710	81.5	3,559	107.0	2,853	85.8	257	7.7	500	15.0	3,698	111.2				
1917	6,103	178.9	2,765	81.1	3,703	108.6	2,925	85.8	335	9.8	569	16.7	4,455	130.6				
1918	6,091	174.2	2,931	83.8	3,493	99.9	2,599	74.3	279	8.0	591	16.9	7,238	207.0				
1919	5,651	157.7	2,990	83.5	3,483	97.2	2,612	72.9	328	9.2	559	15.6	4,081	113.9				
1920	6,732	183.5	3,158	86.1	3,876	105.7	2,646	72.1	397	10.8	577	15.7	5,794	157.9				
1921	6,176	163.1	3,373	89.1	3,931	103.8	2,476	65.4	403	10.6	586	15.5	2,849	75.3	261	6.9		
1922	6,897	176.7	3,481	89.2	4,041	103.5	2,475	63.4	529	13.6	650	16.7	3,728	95.5	267	6.8		
1923	7,266	180.7	3,545	88.2	4,420	109.9	2,826	70.3	677	16.8	635	15.8	4,719	117.4	251	6.2		
1924	6,985	168.8	3,824	92.4	4,241	102.5	3,090	74.7	1,001	24.2	661	16.0	3,332	80.5	256	6.2		
1925	7,540	177.2	3,858	90.7	4,623	108.6	3,278	77.0	1,103	25.9	746	17.5	3,294	77.4	319	7.5		
1926	8,281	189.4	4,087	93.5	4,663	106.6	3,557	81.3	1,221	27.9	743	17.0	4,440	101.5	326	7.5		
1927	8,780	195.5	4,264	95.0	4,378	97.5	3,634	80.9	1,389	30.9	819	18.2	3,543	78.9	340	7.6		
1928	9,786	212.4	4,381	95.1	4,718	102.4	3,704	80.4	1,429	31.0	905	19.6	4,518	98.1	373	8.1		
1929	10,185	215.6	4,571	96.7	4,694	99.3	3,913	82.8	1,552	32.8	935	19.8	4,216	89.2	361	7.6		

¹ Cancer includes leukemias, alkemias, and Hodgkin's disease beginning with 1921.

² Cerebrovascular disease was called Vascular Lesions Affecting-Central Nervous System prior to 1968.

³ Accidents exclude injuries undetermined whether accidentally or purposely inflicted since 1968.

⁴ Motor vehicle accidents do not include collision with heavier vehicles from 1910 through 1922. Motorcycle accidents are included beginning 1923.

⁵ Chronic liver disease and cirrhosis was called Cirrhosis of the Liver prior to 1979.

⁶ Atherosclerosis was called General Arteriosclerosis prior to 1968 and was called Arteriosclerosis from 1968-1978.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.8 (continued)
 Number of Deaths and Death Rates by Specified Causes
 Michigan Residents, 1900 - 1989
 (Rates per 100,000 population)

Year	Heart Disease		Cancer (all forms) ¹		Cerebrovascular Disease		Accidents (all forms) ³		Motor Vehicle Accidents ⁴		Diabetes		Pneumonia		Chronic Liver Disease & Cirrhosis ⁵		Atherosclerosis ⁶	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1930	9,947	205.4	4,572	94.4	4,533	93.6	3,805	78.6	1,572	32.5	880	18.2	3,321	68.6	329	6.8	1,047	21.6
1931	10,206	209.0	4,763	97.5	4,388	89.8	3,630	74.3	1,516	31.0	950	19.5	2,883	59.0	365	7.5	1,005	20.6
1932	11,162	226.6	4,935	100.2	4,518	91.7	3,179	64.5	1,229	25.0	1,121	22.8	3,238	65.7	386	7.8	948	19.2
1933	11,509	231.7	5,055	101.8	4,318	86.9	3,304	66.5	1,278	25.7	1,103	22.2	2,756	55.5	354	7.1	966	19.5
1934	11,824	236.1	5,370	107.2	4,485	89.6	3,774	75.4	1,511	30.2	1,100	22.0	3,466	69.2	378	7.5	914	18.3
1935	12,456	246.7	5,399	106.9	4,420	87.5	3,771	74.7	1,676	33.2	1,228	24.3	3,801	75.3	368	7.3	897	17.8
1936	13,374	262.7	5,752	113.0	4,705	92.4	5,246	103.1	1,924	37.8	1,266	24.9	4,096	80.5	446	8.8	997	19.6
1937	13,233	257.8	5,732	111.7	4,378	85.3	4,580	89.2	2,187	42.6	1,255	24.5	4,098	79.8	430	8.4	1,168	22.8
1938	13,887	268.4	6,059	117.1	4,543	87.8	3,608	69.7	1,490	28.8	1,283	24.8	2,869	55.5	424	8.2	869	16.8
1939	14,898	285.7	6,296	120.7	4,415	84.7	3,761	72.1	1,553	29.8	1,360	26.1	2,803	53.8	387	7.4	918	17.6
1940	15,480	294.5	6,513	123.9	4,690	89.2	3,961	75.4	1,743	33.2	1,408	26.8	2,478	47.1	468	8.9	941	17.9
1941	15,761	289.8	6,551	120.5	4,698	86.4	4,450	81.8	2,156	39.6	1,382	25.4	2,235	41.1	450	8.3	906	16.7
1942	16,016	289.2	6,646	120.0	4,841	87.4	3,685	66.5	1,368	24.7	1,448	26.1	2,349	42.4	535	9.7	1,015	18.3
1943	17,816	331.3	7,127	132.5	5,311	98.8	3,480	64.7	1,025	19.1	1,535	28.5	2,931	54.5	518	9.6	1,092	20.3
1944	17,004	316.2	7,277	135.3	4,954	92.1	3,350	62.3	1,103	20.5	1,554	28.9	2,369	44.1	471	8.8	980	17.8
1945	17,421	320.5	7,486	137.7	5,295	97.4	3,432	63.1	1,199	22.1	1,561	28.7	1,932	35.5	535	9.8	970	17.8
1946	17,691	303.9	7,845	137.4	5,224	91.5	3,776	66.1	1,506	26.4	1,530	26.8	1,891	33.1	554	9.7	933	16.3
1947	18,412	309.4	8,188	134.9	5,426	89.4	3,848	63.4	1,499	24.7	1,618	26.7	2,089	34.4	697	11.5	1,031	17.0
1948	18,726	302.3	8,336	134.6	5,272	85.1	4,017	64.8	1,545	24.9	1,771	28.6	1,853	29.9	771	12.4	1,085	17.5
1949	19,137	301.3	8,697	136.9	5,438	85.6	3,838	60.4	1,493	23.5	1,884	29.7	1,885	29.7	730	11.5	1,135	17.9
1950	20,521	322.1	8,685	136.3	6,376	100.1	3,783	59.4	1,680	26.4	1,438	22.6	1,358	21.3	616	9.7	1,296	20.3
1951	21,118	322.6	9,187	140.4	6,579	100.5	3,916	59.8	1,806	27.6	1,374	21.0	1,619	24.7	569	8.7	1,312	20.0
1952	21,247	316.8	9,256	138.0	6,521	97.2	3,901	58.2	1,815	27.1	1,339	20.0	1,571	23.4	599	8.9	1,294	19.3
1953	22,425	327.3	9,904	144.5	7,045	102.8	4,375	63.8	2,051	29.9	1,419	20.7	1,538	22.4	715	10.4	1,270	18.5
1954	22,362	318.4	10,105	143.9	6,964	99.1	3,948	56.2	1,916	27.3	1,469	20.9	1,380	19.6	677	9.6	1,170	16.7
1955	23,440	323.9	10,297	142.3	7,362	101.7	4,213	58.2	2,129	29.4	1,415	19.6	1,538	21.3	805	11.1	1,237	17.1
1956	24,661	328.1	10,489	139.6	7,114	94.7	3,925	52.2	1,826	24.3	1,443	19.2	1,723	22.9	788	10.5	1,251	16.6
1957	25,369	325.1	10,810	138.5	7,632	97.8	3,643	46.7	1,680	21.5	1,510	19.4	2,045	26.2	861	11.0	1,248	16.0
1958	25,215	320.6	10,946	139.2	7,547	95.9	3,306	42.0	1,466	18.6	1,595	20.3	2,076	26.4	818	10.4	1,300	16.5
1959	25,323	318.1	11,113	139.6	7,700	96.7	3,666	46.1	1,587	19.9	1,715	21.5	1,810	22.7	815	10.2	1,403	17.6

¹ Cancer includes leukemias, aleukemias, and Hodgkin's disease beginning with 1921.
² Cerebrovascular disease was called Vascular Lesions Affecting-Central Nervous System prior to 1968.
³ Accidents exclude injuries undetermined whether accidentally or purposely inflicted since 1968.
⁴ Motor vehicle accidents do not include collision with heavier vehicles from 1910 through 1922. Motorcycle accidents are included beginning 1923.
⁵ Chronic liver disease and cirrhosis was called Cirrhosis of the Liver prior to 1979.
⁶ Atherosclerosis was called General Arteriosclerosis prior to 1968 and was called Arteriosclerosis from 1968-1978.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.8 (continued)
Number of Deaths and Death Rates by Specified Causes
 Michigan Residents, 1900 - 1989
(Rates per 100,000 population)

Year	Heart Disease		Cancer (all forms) ¹		Cerebrovascular Disease		Accidents (all forms) ³		Motor Vehicle Accidents ⁴		Diabetes		Pneumonia		Chronic Liver Disease & Cirrhosis ⁵		Atherosclerosis ⁶	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1960	25,728	328.9	11,331	144.8	7,682	98.2	3,688	47.1	1,710	21.9	1,784	22.8	2,002	25.6	840	10.7	1,352	17.3
1961	25,519	322.9	11,476	145.2	7,745	98.0	3,692	46.7	1,656	21.0	1,778	22.5	1,692	21.4	858	10.9	1,448	18.3
1962	27,226	342.9	11,752	148.0	7,783	98.0	3,758	47.3	1,668	21.0	1,908	24.0	1,824	23.0	859	10.8	1,477	18.6
1963	27,483	342.3	12,078	150.4	8,168	101.7	4,033	50.2	2,005	25.0	2,049	25.5	1,995	24.8	958	11.9	1,652	20.6
1964	27,496	339.5	12,087	149.2	7,940	98.0	4,416	54.5	2,286	28.2	2,055	25.4	1,714	21.2	995	12.3	1,559	19.2
1965	28,134	343.1	12,419	151.5	7,769	94.8	4,494	54.8	2,271	27.7	2,153	26.3	1,987	24.2	1,068	13.0	1,726	21.1
1966	28,277	340.1	12,506	150.4	7,732	93.0	4,737	57.0	2,407	29.0	2,243	27.0	2,026	24.4	1,152	13.9	1,745	21.0
1967	28,757	333.8	13,030	151.2	7,846	91.1	4,519	52.4	2,265	26.3	2,182	25.3	1,973	22.9	1,240	14.4	1,730	20.1
1968	29,680	342.1	13,292	153.2	7,913	91.2	4,603	53.1	2,466	28.4	2,298	26.5	2,341	27.0	1,259	14.5	1,730	20.1
1969	29,396	336.6	13,328	152.6	7,706	88.2	4,766	54.6	2,579	29.5	2,188	25.1	2,229	25.5	1,430	16.4	1,262	14.5
1970	29,204	329.1	13,551	152.7	7,691	86.7	4,428	49.9	2,309	26.0	2,180	24.6	2,004	22.6	1,558	17.6	1,174	13.2
1971	30,095	335.4	13,594	151.5	7,826	87.2	4,426	49.3	2,274	25.3	2,103	23.4	1,981	22.1	1,657	18.5	1,187	13.2
1972	30,865	342.0	14,045	155.6	7,999	88.6	4,566	50.6	2,450	27.1	2,222	24.6	2,009	22.3	1,778	19.7	1,153	12.8
1973	29,944	330.1	14,220	156.7	7,987	88.0	4,630	51.0	2,389	26.3	2,074	22.9	1,958	21.6	1,711	18.9	1,142	12.6
1974	29,220	320.8	14,241	156.3	7,645	83.9	4,211	46.2	1,929	21.2	1,940	21.3	1,637	18.0	1,650	18.1	1,187	13.0
1975	28,298	310.7	14,445	158.6	7,262	79.7	4,002	43.9	1,841	20.2	1,819	20.0	1,690	18.6	1,574	17.3	1,119	12.3
1976	29,233	320.6	14,880	163.2	7,354	80.7	3,912	42.9	1,993	21.9	1,719	18.9	1,812	19.9	1,486	16.3	1,207	13.2
1977	28,895	315.6	15,125	165.2	6,818	74.5	3,945	43.1	1,993	21.8	1,615	17.6	1,639	17.9	1,356	14.8	1,164	12.7
1978	29,406	319.6	15,249	165.7	6,520	70.9	3,970	43.1	2,138	23.2	1,551	16.9	1,828	19.9	1,351	14.7	1,146	12.5
1979	29,296	316.7	15,409	166.6	6,067	65.6	3,839	41.5	1,967	21.3	1,449	15.7	1,454	15.7	1,367	14.8	1,173	12.7
1980	29,790	321.6	15,828	170.9	6,164	66.6	3,627	39.2	1,880	20.3	1,467	15.8	1,712	18.5	1,362	14.7	1,254	13.5
1981	30,172	325.6	16,142	174.1	6,121	66.0	3,390	36.6	1,727	18.6	1,487	16.0	1,644	17.7	1,253	13.5	1,270	13.7
1982	30,099	326.2	16,566	179.5	5,839	63.3	3,113	33.7	1,555	16.9	1,347	14.6	1,665	18.0	1,244	13.5	1,284	13.9
1983	30,412	332.2	16,785	183.3	5,721	62.5	2,947	32.2	1,419	15.5	1,470	16.1	2,007	21.9	1,250	13.7	1,269	13.9
1984	30,100	331.7	16,907	186.3	5,631	62.1	3,049	33.6	1,630	18.0	1,476	16.3	1,987	21.9	1,194	13.2	1,142	12.6
1985	30,618	336.9	17,281	190.1	5,528	60.8	3,228	35.5	1,676	18.4	1,387	15.3	2,193	24.1	1,256	13.8	1,173	12.9
1986	31,270	342.0	17,321	189.4	5,421	59.3	3,202	35.0	1,736	19.0	1,494	16.3	2,389	26.1	1,120	12.2	1,214	13.3
1987	30,521	331.8	17,669	192.1	5,481	59.6	3,143	34.2	1,725	18.8	1,479	16.1	2,354	25.6	1,099	11.9	1,168	12.7
1988	30,218	327.0	17,890	193.6	5,237	56.7	3,237	35.0	1,806	19.5	1,522	16.5	2,626	28.4	1,080	11.7	1,187	12.8
1989	28,031	302.3	18,264	196.9	5,173	55.8	3,228	34.8	1,750	18.9	2,052	22.1	2,633	28.4	1,170	12.6	832	9.0

¹ Cancer includes leukemias, aleukemias, and Hodgkin's disease beginning with 1921.

² Cerebrovascular disease was called Vascular Lesions Affecting Central Nervous System prior to 1968.

³ Accidents exclude injuries undetermined whether accidentally or purposely inflicted since 1968.

⁴ Motor vehicle accidents do not include collision with heavier vehicles from 1910 through 1922. Motorcycle accidents are included beginning 1923.

⁵ Chronic liver disease and cirrhosis was called Cirrhosis of the Liver prior to 1979.

⁶ Atherosclerosis was called General Arteriosclerosis prior to 1968 and was called Arteriosclerosis from 1968-1978.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.9
Selected Vital Statistics by County
Michigan Residents, 1989

Area	Population Estimate	Live Births	Low Weight Live Births	Deaths	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages ¹	Divorces ¹
Michigan	9,273,431	148,164	11,323	78,566	1,645	1,070	1,792	881	76,210	40,276
Alcona	10,675	97	9	146	2	2	2	-	62	33
Alger	8,754	100	4	124	-	-	2	2	67	36
Allegan	91,236	1,410	64	637	10	10	20	12	739	387
Alpena	31,717	377	17	308	1	1	1	-	286	156
Antrim	17,804	249	11	200	3	-	2	2	137	86
Arenac	15,935	219	14	155	2	2	3	1	134	34
Baraga	8,221	96	4	94	1	-	-	-	68	31
Barry	50,654	658	41	380	4	4	6	3	436	199
Bay	115,941	1,604	83	971	12	7	10	4	979	423
Benzie	11,552	178	12	129	1	1	1	-	116	47
Berrien	167,167	2,678	233	1,508	32	12	28	16	1,522	749
Branch	41,099	620	40	392	9	6	8	2	383	240
Calhoun	139,802	2,112	183	1,362	28	16	23	8	1,136	829
Cass	49,675	619	44	405	7	3	4	1	383	262
Charlevoix	21,527	325	15	176	4	3	3	-	216	95
Cheboygan	21,703	273	8	220	2	1	1	1	202	65
Chippewa	31,978	407	20	260	2	-	3	3	290	110
Clare	26,521	363	26	293	3	2	2	-	239	108
Clinton	58,885	806	39	341	4	2	5	4	685	247
Crawford	11,035	183	7	129	2	2	2	-	119	61
Delta	38,960	503	31	354	1	-	4	4	303	150
Dickinson	26,682	334	8	260	-	-	-	-	266	119
Eaton	95,898	1,166	61	650	6	4	12	8	772	437
Emmet	25,028	362	12	222	2	2	-	-	290	129
Genesee	429,676	7,327	694	3,431	105	79	100	34	3,804	1,797
Gladwin	23,310	286	12	243	5	3	4	2	162	112
Gogebic	18,197	150	12	225	2	1	1	-	123	61
Grand Traverse	63,662	923	49	466	5	1	2	1	688	301
Gratiot	39,741	554	21	407	5	3	6	4	324	156
Hillsdale	43,810	650	42	387	6	4	5	3	311	241
Houghton	35,813	422	13	377	2	1	3	2	254	106
Huron	36,793	514	24	385	3	2	5	3	254	103
Ingham	275,926	4,560	314	1,743	36	20	43	27	2,698	1,359
Ionia	57,297	836	45	432	7	5	13	8	449	246
Iosco	30,808	574	33	281	2	2	6	4	278	142
Iron	13,541	146	8	200	-	-	3	3	98	41
Isabella	54,404	694	36	327	6	2	5	4	424	212
Jackson	150,133	2,250	184	1,308	25	19	41	27	1,369	697
Kalamazoo	218,660	3,425	206	1,627	37	22	32	14	2,100	1,050
Kalkaska	12,518	191	19	107	1	1	1	1	119	73
Kent	489,620	9,421	554	3,657	84	52	92	46	5,039	2,289
Keweenaw	1,951	11	-	32	-	-	-	-	15	5

¹ By county of occurrence rather than county of residence.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.9 (continued)
Selected Vital Statistics by County
Michigan Residents, 1989

Area	Population Estimate	Live Births	Low Weight Live Births	Deaths	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages ¹	Divorces ¹
Lake	9,191	119	10	151	2	-	-	-	68	26
Lapeer	75,158	1,057	47	469	11	8	8	3	612	320
Leelanau	15,856	233	14	150	2	-	-	-	125	65
Lenawee	92,154	1,340	60	779	11	8	13	5	655	379
Livingston	115,270	1,578	71	626	7	5	11	6	961	527
Luce	5,840	86	3	73	2	-	-	-	41	24
Mackinac	10,512	157	10	129	2	2	2	1	166	47
Macomb	708,905	10,075	582	5,719	80	50	84	38	6,403	3,024
Manistee	22,377	267	23	264	3	2	6	4	173	64
Marquette	70,807	994	46	503	6	4	12	8	614	347
Mason	26,556	339	19	307	3	1	1	-	231	109
Mecosta	38,725	451	21	274	1	-	3	3	245	121
Menominee	25,938	206	7	173	1	-	-	-	231	99
Midland	75,943	1,116	51	454	13	10	15	7	677	332
Missaukee	11,835	174	7	111	2	2	2	-	105	46
Monroe	137,606	1,936	111	944	13	7	10	4	995	674
Montcalm	53,682	840	34	435	9	4	9	6	477	269
Montmorency	8,754	87	5	136	1	1	2	1	54	40
Muskegon	162,576	2,728	193	1,433	29	15	28	15	1,415	874
Newaygo	39,900	630	27	335	8	4	8	4	353	210
Oakland	1,057,402	16,414	976	7,873	142	97	182	90	9,572	4,833
Oceana	23,593	346	19	214	2	1	3	2	191	83
Ogemaw	18,897	268	14	258	1	-	3	3	168	64
Ontonagon	9,069	96	10	116	1	1	1	-	75	29
Osceola	21,282	303	19	167	6	3	5	4	180	100
Oscoda	7,452	105	8	96	3	1	2	1	58	24
Otsego	17,223	242	4	173	6	4	4	-	165	101
Ottawa	183,637	3,103	150	1,013	27	17	21	8	1,487	654
Presque Isle	14,244	169	9	144	-	-	1	1	90	38
Roscommon	20,925	236	18	256	2	2	2	-	196	96
Saginaw	214,166	3,560	328	1,895	47	30	51	27	1,623	857
St Clair	146,740	2,161	131	1,280	19	14	25	12	1,272	779
St Joseph	60,629	912	65	522	9	5	6	2	496	310
Sanilac	41,647	545	22	438	5	2	-	-	302	166
Schoolcraft	8,396	92	4	110	-	-	2	2	54	30
Shiawassee	70,868	980	61	538	9	5	13	8	617	329
Tuscola	56,696	787	58	450	8	8	9	2	430	215
Van Buren	70,067	1,139	76	634	11	4	11	8	637	408
Washtenaw	272,187	4,172	284	1,483	37	27	50	28	2,349	1,128
Wayne	2,106,933	39,024	4,454	21,822	630	425	674	317	13,036	8,257
Wexford	27,482	397	18	239	5	3	7	5	272	154
Co. Not Stated	-	27	2	29	-	-	2	2	-	-

¹ By county of occurrence rather than county of residence.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.10
Selected Vital Statistics Rates by County
Michigan Residents, 1989

Area	Live Births	Low Weight Live Births ¹	Deaths	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages ²	Divorces ²
Michigan	16.0	76.4	8.5	11.1	7.2	12.0	5.9	16.4	8.7
Alcona	9.1	92.8	13.7	20.6	20.6	20.6	0.0	11.6	6.2
Alger	11.4	40.0	14.2	0.0	0.0	19.6	19.6	15.3	8.2
Allegan	15.5	45.4	7.0	7.1	7.1	14.1	8.4	16.2	8.5
Alpena	11.9	45.1	9.7	2.7	2.7	2.7	0.0	18.0	9.8
Antrim	14.0	44.2	11.2	12.0	0.0	8.0	8.0	15.4	9.7
Arenac	13.7	63.9	9.7	9.1	9.1	13.6	4.5	16.8	4.3
Baraga	11.7	41.7	11.4	10.4	0.0	0.0	0.0	16.5	7.5
Barry	13.0	62.3	7.5	6.1	6.1	9.1	4.5	17.2	7.9
Bay	13.8	51.7	8.4	7.5	4.4	6.2	2.5	16.9	7.3
Benzie	15.4	67.4	11.2	5.6	5.6	5.6	0.0	20.1	8.1
Berrien	16.0	87.0	9.0	11.9	4.5	10.4	5.9	18.2	9.0
Branch	15.1	64.5	9.5	14.5	9.7	12.9	3.2	18.6	11.7
Calhoun	15.1	86.6	9.7	13.3	7.6	10.8	3.8	16.3	11.9
Cass	12.5	71.1	8.2	11.3	4.8	6.5	1.6	15.4	10.5
Charlevoix	15.1	46.2	8.2	12.3	9.2	9.2	0.0	20.1	8.8
Cheboygan	12.6	29.3	10.1	7.3	3.7	3.6	3.6	18.6	6.0
Chippewa	12.7	49.1	8.1	4.9	0.0	7.3	7.3	18.1	6.9
Clare	13.7	71.6	11.0	8.3	5.5	5.5	0.0	18.0	8.1
Clinton	13.7	48.4	5.8	5.0	2.5	6.2	4.9	23.3	8.4
Crawford	16.6	38.3	11.7	10.9	10.9	10.9	0.0	21.6	11.1
Delta	12.9	61.6	9.1	2.0	0.0	7.9	7.9	15.6	7.7
Dickinson	12.5	24.0	9.7	0.0	0.0	0.0	0.0	19.9	8.9
Eaton	12.2	52.3	6.8	5.1	3.4	10.2	6.8	16.1	9.1
Emmet	14.5	33.1	8.9	5.5	5.5	0.0	0.0	23.2	10.3
Genesee	17.1	94.7	8.0	14.3	10.8	13.6	4.6	17.7	8.4
Gladwin	12.3	42.0	10.4	17.5	10.5	13.9	6.9	13.9	9.6
Gogebic	8.2	80.0	12.4	13.3	6.7	6.7	0.0	13.5	6.7
Grand Traverse	14.5	53.1	7.3	5.4	1.1	2.2	1.1	21.6	9.5
Gratiot	13.9	37.9	10.2	9.0	5.4	10.8	7.2	16.3	7.9
Hillsdale	14.8	64.6	8.8	9.2	6.2	7.7	4.6	14.2	11.0
Houghton	11.8	30.8	10.5	4.7	2.4	7.1	4.7	14.2	5.9
Huron	14.0	46.7	10.5	5.8	3.9	9.7	5.8	13.8	5.6
Ingham	16.5	68.9	6.3	7.9	4.4	9.4	5.9	19.6	9.9
Ionia	14.6	53.8	7.5	8.4	6.0	15.4	9.5	15.7	8.6
Iosco	18.6	57.5	9.1	3.5	3.5	10.4	6.9	18.0	9.2
Iron	10.8	54.8	14.8	0.0	0.0	20.1	20.1	14.5	6.1
Isabella	12.8	51.9	6.0	8.6	2.9	7.2	5.7	15.6	7.8
Jackson	15.0	81.8	8.7	11.1	8.4	18.0	11.9	18.2	9.3
Kalamazoo	15.7	60.1	7.4	10.8	6.4	9.3	4.1	19.2	9.6
Kalkaska	15.3	99.5	8.5	5.2	5.2	5.2	5.2	19.0	11.7
Kent	19.2	58.8	7.5	8.9	5.5	9.7	4.9	20.6	9.4
Keweenaw	5.6	0.0	16.4	0.0	0.0	0.0	0.0	15.4	5.1

¹ Ratio per 1,000 live births.

² By county of occurrence rather than county of residence. Rate of persons per 1,000 population rather than events per population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.10 (continued)
Selected Vital Statistics Rates by County
Michigan Residents, 1989

Area	Live Births	Low Weight Live Births ¹	Deaths	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages ²	Divorces ²
Lake	12.9	84.0	16.4	16.8	0.0	0.0	0.0	14.8	5.7
Lapeer	14.1	44.5	6.2	10.4	7.6	7.5	2.8	16.3	8.5
Leelanau	14.7	60.1	9.5	8.6	4.3	0.0	0.0	15.8	8.2
Lenawee	14.5	44.8	8.5	8.2	6.0	9.7	3.7	14.2	8.2
Livingston	13.7	45.0	5.4	4.4	3.2	6.9	3.8	16.7	9.1
Luce	14.7	34.9	12.5	23.3	0.0	0.0	0.0	14.0	8.2
Mackinac	14.9	63.7	12.3	12.7	12.7	12.7	6.3	31.6	8.9
Macomb	14.2	57.8	8.1	7.9	5.0	8.3	3.8	18.1	8.5
Manistee	11.9	86.1	11.8	11.2	7.5	22.1	14.8	15.5	5.7
Marquette	14.0	46.3	7.1	6.0	4.0	12.0	8.0	17.3	9.8
Mason	12.8	56.0	11.6	8.8	2.9	2.9	0.0	17.4	8.2
Mecosta	11.6	46.6	7.1	2.2	0.0	6.6	6.6	12.7	6.2
Menominee	7.9	34.0	6.7	4.9	0.0	0.0	0.0	17.8	7.6
Midland	14.7	45.7	6.0	11.6	9.0	13.4	6.2	17.8	8.7
Missaukee	14.7	40.2	9.4	11.5	11.5	11.5	0.0	17.7	7.8
Monroe	14.1	57.3	6.9	6.7	3.6	5.2	2.1	14.5	9.8
Montcalm	15.6	40.5	8.1	10.7	4.8	10.6	7.1	17.8	10.0
Montmorency	9.9	57.5	15.5	11.5	11.5	22.7	11.4	12.3	9.1
Muskegon	16.8	70.7	8.8	10.6	5.5	10.2	5.5	17.4	10.8
Newaygo	15.8	42.9	8.4	12.7	6.3	12.6	6.3	17.7	10.5
Oakland	15.5	59.5	7.4	8.7	5.9	11.0	5.5	18.1	9.1
Oceana	14.7	54.9	9.1	5.8	2.9	8.6	5.7	16.2	7.0
Ogemaw	14.2	52.2	13.7	3.7	0.0	11.1	11.1	17.8	6.8
Ontonagon	10.6	104.2	12.8	10.4	10.4	10.4	0.0	16.5	6.4
Oseola	14.2	62.7	7.8	19.8	9.9	16.3	13.0	16.9	9.4
Oscoda	14.1	76.2	12.9	28.6	9.5	18.9	9.4	15.6	6.4
Oshtemo	14.1	16.5	10.0	24.8	16.5	16.5	0.0	19.2	11.7
Ottawa	14.1	48.3	5.5	8.7	5.5	6.8	2.6	16.2	7.1
Presque Isle	11.9	53.3	10.1	0.0	0.0	5.9	5.9	12.6	5.3
Roscommon	11.3	76.3	12.2	8.5	8.5	8.5	0.0	18.7	9.2
Saginaw	16.6	92.1	8.8	13.2	8.4	14.2	7.5	15.2	8.0
St Clair	14.7	60.6	8.7	8.8	6.5	11.5	5.5	17.3	10.6
St Joseph	15.0	71.3	8.6	9.9	5.5	6.6	2.2	16.4	10.2
Sanilac	13.1	40.4	10.5	9.2	3.7	0.0	0.0	14.5	8.0
Schoolcraft	11.0	43.5	13.1	0.0	0.0	21.3	21.3	12.9	7.1
Shiawassee	13.8	62.2	7.6	9.2	5.1	13.2	8.1	17.4	9.3
Tuscola	13.9	73.7	7.9	10.2	10.2	11.4	2.5	15.2	7.6
Van Buren	16.3	66.7	9.0	9.7	3.5	9.6	7.0	18.2	11.6
Washtenaw	15.3	68.1	5.4	8.9	6.5	11.9	6.7	17.3	8.3
Wayne	18.5	114.1	10.3	16.1	10.9	17.1	8.1	12.4	7.8
Wexford	14.4	45.3	8.7	12.6	7.6	17.4	12.4	19.8	11.2

¹ Ratio per 1,000 live births.

² By county of occurrence rather than county of residence. Rate of persons per 1,000 population rather than events per population.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.11
Live Births with Selected Risk Factors by County of Residence
Michigan Residents, 1989

Area	Medical Risk Factor Present ¹		Complications of Labor/Delivery ²		Abnormal Conditions of Newborn ³		Mother Smoked While Pregnant		Mother Drank Alcohol While Pregnant		Congenital Anomalies Reported ⁴		Inadequate Prenatal Care ⁵		Mother's Education <12 Grade		Mother <18 Years of Age	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Michigan	31,292	21.1	45,006	30.4	8,993	6.1	33,364	22.5	6,382	4.3	3,161	2.1	9,784	6.6	28,931	19.5	12,774	8.6
Alcona	24	24.7	41	42.3	7	7.2	43	44.3	1	1.0	4	4.1	1	1.0	19	19.6	8	8.2
Alger	13	13.0	26	26.0	4	4.0	24	24.0	-	-	-	-	1	1.0	11	11.0	7	7.0
Allegan	289	20.5	418	29.6	88	6.2	328	23.3	54	3.8	42	3.0	92	6.5	289	20.5	113	8.0
Alpena	75	19.9	164	43.5	10	2.7	127	33.7	3	0.8	8	2.1	7	1.9	65	17.2	34	9.0
Antrim	55	22.1	81	32.5	14	5.6	55	22.1	6	2.4	5	2.0	20	8.0	42	16.9	17	6.8
Arenac	51	23.3	59	26.9	11	5.0	60	27.4	6	2.7	5	2.3	12	5.5	51	23.3	18	8.2
Baraga	16	16.7	31	32.3	4	4.2	42	43.8	14	14.6	4	4.2	4	4.2	23	24.0	5	5.2
Barry	168	25.5	245	37.2	63	9.6	166	25.2	18	2.7	13	2.0	27	4.1	116	17.6	52	7.9
Bay	299	18.6	396	24.7	79	4.9	294	18.3	46	2.9	54	3.4	72	4.5	283	17.6	143	8.9
Benzie	41	23.0	49	27.5	7	3.9	36	20.2	3	1.7	5	2.8	12	6.7	32	18.0	12	6.7
Berrien	641	23.9	814	30.4	141	5.3	589	22.0	96	3.6	37	1.4	170	6.3	718	26.8	369	13.8
Branch	157	25.3	243	39.2	42	6.8	164	26.5	22	3.5	16	2.6	78	12.6	156	25.2	66	10.6
Calhoun	413	19.6	527	25.0	103	4.9	403	19.1	53	2.5	36	1.7	191	9.0	472	22.3	265	12.5
Cass	157	25.4	223	36.0	49	7.9	194	31.3	31	5.0	15	2.4	47	7.6	179	28.9	66	10.7
Charlevoix	79	24.3	110	33.8	15	4.6	86	26.5	10	3.1	5	1.5	5	1.5	53	16.3	20	6.2
Cheboygan	62	22.7	103	37.7	9	3.3	89	32.6	4	1.5	17	6.2	11	4.0	56	20.5	19	7.0
Chippewa	57	14.0	85	20.9	20	4.9	105	25.8	7	1.7	7	1.7	31	7.6	87	21.4	44	10.8
Clare	84	23.1	77	21.2	10	2.8	96	26.4	5	1.4	8	2.2	14	3.9	92	25.3	44	12.1
Clinton	144	17.9	272	33.7	63	7.8	144	17.9	32	4.0	19	2.4	27	3.3	60	7.4	35	4.3
Crawford	65	35.5	83	45.4	28	15.3	71	38.8	13	7.1	6	3.3	9	4.9	48	26.2	21	11.5
Delta	169	33.6	177	35.2	26	5.2	145	28.8	23	4.6	18	3.6	19	3.8	55	10.9	31	6.2
Dickinson	32	9.6	78	23.4	13	3.9	80	24.0	10	3.0	11	3.3	10	3.0	39	11.7	22	6.6
Eaton	198	17.0	389	33.4	93	8.0	194	16.6	46	3.9	20	1.7	57	4.9	134	11.5	88	7.5
Emmet	97	26.8	132	36.5	12	3.3	83	22.9	9	2.5	12	3.3	12	3.3	35	9.7	17	4.7
Genesee	1,180	16.1	2,294	31.3	274	3.7	1,873	25.6	352	4.8	91	1.2	379	5.2	1,818	24.8	851	11.6
Gladwin	70	24.5	84	29.4	19	6.6	64	22.4	4	1.4	8	2.8	29	10.1	65	22.7	17	5.9
Gogebic	41	27.3	69	46.0	14	9.3	54	36.0	4	2.7	7	4.7	11	7.3	20	13.3	12	8.0
Grand Traverse	193	20.9	311	33.7	46	14.3	132	14.3	29	3.1	15	1.6	45	4.9	101	10.9	60	6.5
Graffiot	128	23.1	187	33.8	67	12.1	149	26.9	13	2.3	23	4.2	26	4.7	89	16.1	49	8.8
Hillsdale	173	26.6	256	39.4	42	6.5	198	30.5	26	4.0	10	1.5	48	7.4	126	19.4	51	7.8

¹ Examples of medical risk factors include: anemia, diabetes, hypertension, edema, renal disease, maternal drug use.
² Examples of labor and/or delivery include: abruptio placenta, seizures during labor, dysfunctional labor, fetal distress, breech/malpresentation, cord prolapse.
³ Examples of abnormal conditions of the newborn include: anemia, birth injury, fetal alcohol syndrome, hyaline membrane disease, seizures.
⁴ Congenital anomalies reported have increased due to a change in reporting procedure.
⁵ The Kessler Index is a classification of prenatal care based on the month of pregnancy prenatal care began, the number of prenatal visits and the length of pregnancy.
⁶ Muskegon county data not available due to a reporting problem. State of Michigan data does not reflect Muskegon births.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.11 (continued)
Live Births with Selected Risk Factors by County of Residence
Michigan Residents, 1989

Area	Medical Risk Factor Present ¹		Complications of Labor/Delivery ²		Abnormal Conditions of Newborn ³		Mother Smoked While Pregnant		Mother Drank Alcohol While Pregnant		Congenital Anomalies Reported ⁴		Inadequate Prenatal Care ^{5,6}		Mother's Education <12 Grade		Mother <18 Years of Age	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Houghton	86	20.4	156	37.0	36	8.5	109	25.8	45	10.7	10	2.4	16	3.8	38	9.0	17	4.0
Huron	116	22.6	145	28.2	53	10.3	127	24.7	19	3.7	15	2.9	23	4.5	73	14.2	25	4.9
Ingham	919	20.2	1,506	33.0	312	6.8	907	19.9	263	5.8	60	1.3	336	7.4	877	19.2	363	8.0
Ionia	191	22.8	272	32.5	78	9.3	242	28.9	31	3.7	15	1.8	58	6.9	157	18.8	65	7.8
Iosco	167	29.1	198	34.5	28	4.9	116	20.2	18	3.1	25	4.4	21	3.7	80	13.9	35	6.1
Iron	23	15.8	46	31.5	11	7.5	32	21.9	9	6.2	3	2.1	18	12.3	24	16.4	13	8.9
Isabella	161	23.2	171	24.6	40	5.8	166	23.9	12	1.7	14	2.0	37	5.3	102	14.7	35	5.0
Jackson	718	31.9	988	43.9	80	3.6	696	30.9	64	2.8	26	1.2	246	10.9	478	21.2	223	9.9
Kalamazoo	1,137	33.2	1,430	41.8	260	7.6	843	24.6	301	8.8	53	1.5	125	3.6	575	16.8	248	7.2
Kalkaska	56	29.3	65	34.0	20	10.5	48	25.1	4	2.1	3	1.6	12	6.3	57	29.8	24	12.6
Kent	1,689	17.9	2,432	25.8	448	4.8	1,846	19.6	353	3.7	112	1.2	363	3.9	1,480	15.7	694	7.4
Keweenaw	3	27.3	2	18.2	-	-	1	9.1	2	18.2	1	9.1	-	-	-	-	-	-
Lake	39	32.8	43	36.1	8	6.7	42	35.3	5	4.2	5	4.2	19	16.0	35	29.4	23	19.3
Lapeer	210	19.9	364	34.4	106	10.0	280	26.5	88	8.3	32	3.0	44	4.2	181	17.1	71	6.7
Leelanau	47	20.2	67	28.8	12	5.2	33	14.2	7	3.0	4	1.7	13	5.6	28	12.0	9	3.9
Lenawee	221	16.5	431	32.2	71	5.3	355	26.5	78	5.8	27	2.0	62	4.6	286	21.3	126	9.4
Livingston	270	17.1	483	30.6	56	3.5	347	22.0	96	6.1	39	2.5	56	3.5	125	7.9	53	3.4
Luce	26	30.2	32	11.6	10	7.6	40	46.5	-	-	4	4.7	4	4.7	26	30.2	11	12.8
Mackinac	33	21.0	61	38.9	12	7.6	46	29.3	5	3.2	7	4.5	12	7.6	28	17.8	17	10.8
Macomb	2,253	22.4	3,241	32.2	1,070	10.6	2,294	22.8	522	5.2	359	3.6	567	5.6	1,120	11.1	365	3.6
Manistee	58	21.7	70	26.2	19	7.1	54	20.2	11	4.1	14	5.2	28	10.5	50	18.7	20	7.5
Marquette	224	22.5	346	34.8	75	7.5	169	17.0	22	2.2	23	2.3	28	2.8	90	9.1	49	4.9
Mason	68	20.1	99	29.2	20	5.9	100	29.5	6	1.8	9	2.7	39	11.5	65	19.2	29	8.6
Meosota	109	24.2	137	30.4	25	5.5	116	25.7	10	2.2	20	4.4	24	5.3	73	16.2	25	5.5
Menominee	21	10.2	72	35.0	4	1.9	50	24.3	11	5.3	2	1.0	7	3.4	22	10.7	10	4.9
Midland	284	25.4	409	36.6	92	8.2	250	22.4	6	0.5	50	4.5	44	3.9	123	11.0	56	5.0
Missaukee	68	39.1	67	38.5	15	8.6	41	23.6	8	4.6	8	4.6	5	2.9	30	17.2	12	6.9
Monroe	457	23.6	651	33.6	135	7.0	494	25.5	79	4.1	29	1.5	87	4.5	346	17.9	163	8.4
Montcalm	200	23.8	266	31.7	128	15.2	261	31.1	25	3.0	37	4.4	58	6.9	206	24.5	94	11.2
Montmorency	23	26.4	40	46.0	3	3.4	30	34.5	2	2.3	3	3.4	4	4.6	21	24.1	7	8.0
Muskegon	451	16.5	509	18.7	87	3.2	803	29.4	152	5.6	46	1.7	4	4.6	546	20.0	280	10.3

¹ Examples of medical risk factors include: anemia, diabetes, hypertension, eclampsia, renal disease, maternal drug use.
² Examples of labor and/or delivery include: abruptio placenta, seizures during labor, dysfunctional labor, fetal distress, breech/malpresentation, cord prolapse.
³ Examples of abnormal conditions of the newborn include: anemia, birth injury, fetal alcohol syndrome, hyaline membrane disease, seizures.
⁴ Congenital anomalies reported have increased due to a change in reporting procedure.
⁵ The Kessner Index is a classification of prenatal care based on the month of pregnancy prenatal care began, the number of prenatal visits and the length of pregnancy.
⁶ Muskegon county data not available due to a reporting problem. State of Michigan data does not reflect Muskegon births.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.11 (continued)
Live Births with Selected Risk Factors by County of Residence
Michigan Residents, 1989

Area	Medical Risk Factor Present ¹		Complications of Labor/Delivery ²		Abnormal Conditions of Newborn ³		Mother Smoked While Pregnant		Mother Drank Alcohol While Pregnant		Congenital Anomalies Reported ⁴		Inadequate Prenatal Care ^{5,6}		Mother's Education <12 Grade		Mother <18 Years of Age	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Newaygo	173	27.5	239	37.9	49	7.8	162	25.7	26	4.1	15	2.4	50	7.9	140	22.2	63	10.0
Oakland	3,265	19.9	4,649	28.3	1,106	6.7	2,643	16.1	836	5.1	502	3.1	703	4.3	1,899	11.6	731	4.5
Oceana	72	20.8	85	24.6	18	5.2	99	28.6	16	4.6	4	1.2	41	11.8	99	28.6	26	7.5
Ogemaw	51	19.0	86	32.1	10	3.7	85	31.7	9	3.4	6	2.2	6	2.2	68	25.4	27	10.1
Ontonagon	23	24.0	38	39.6	10	10.4	40	41.7	5	5.2	2	2.1	9	9.4	14	14.6	6	6.3
Oscoda	77	25.4	85	28.1	11	3.6	89	29.4	8	2.6	11	3.6	17	5.6	68	22.4	31	10.2
Oscoda	29	27.6	45	42.9	10	9.5	33	31.4	6	5.7	3	2.9	9	8.6	29	27.6	6	5.7
Oshtemo	78	32.2	91	37.6	29	12.0	54	22.3	4	1.7	7	2.9	10	4.1	31	12.8	17	7.0
Ottawa	582	18.8	811	26.1	134	4.3	349	11.2	74	2.4	59	1.9	141	4.5	371	12.0	155	5.0
Presque Isle	26	15.4	55	32.5	6	3.6	46	27.2	1	0.6	3	1.8	3	1.8	21	12.4	8	4.7
Roscommon	68	28.8	93	39.4	21	8.9	83	35.2	10	4.2	7	3.0	6	2.5	57	24.2	19	8.1
Saginaw	974	27.4	1,137	31.9	174	4.9	754	21.2	150	4.2	92	2.6	263	7.4	784	22.0	429	12.1
St Clair	359	16.6	535	24.8	124	5.7	669	31.0	141	6.5	39	1.8	89	4.1	449	20.8	183	8.5
St Joseph	223	24.5	308	33.8	76	8.3	206	22.6	24	2.6	24	2.6	67	7.3	208	22.8	71	7.8
Sanilac	97	17.8	157	28.8	31	5.7	170	31.2	38	7.0	17	3.1	35	6.4	108	19.8	41	7.5
Schoolcraft	18	19.6	25	27.2	2	2.2	23	25.0	1	1.1	1	1.1	-	-	18	19.6	12	13.0
Shiawassee	185	18.9	294	30.0	36	3.7	254	25.9	42	4.3	21	2.1	39	4.0	166	16.9	68	6.9
Tuscola	153	19.4	229	29.1	40	5.1	188	23.9	33	4.2	20	2.5	40	5.1	125	15.9	67	8.5
Van Buren	311	27.3	432	37.9	78	6.8	310	27.2	48	4.2	30	2.6	104	9.1	324	28.4	126	11.1
Washtenaw	956	22.9	1512	36.2	136	3.3	702	16.8	235	5.6	93	2.2	161	3.9	458	11.0	196	4.7
Wayne	7,946	20.4	11,152	28.6	2,177	5.6	9,226	23.6	1,453	3.7	621	1.6	4,150	10.6	10,737	27.5	4,740	12.1
Westford	124	31.2	115	29.0	26	6.5	143	36.0	25	6.3	7	1.8	15	3.8	79	19.9	33	8.3
Unknown	3	11.1	10	-	2	7.4	10	37.0	3	11.1	-	-	3	11.1	-	-	1	3.7

¹ Examples of medical risk factors include: anemia, diabetes, hypertension, eclampsia, renal disease, maternal drug use.
² Examples of labor and/or delivery include: abruptio placenta, seizures during labor, dysfunctional labor, fetal distress, breech/malpresentation, cord prolapse.
³ Examples of abnormal conditions of the newborn include: anemia, birth injury, fetal alcohol syndrome, hyaline membrane disease, seizures.
⁴ Congenital anomalies reported have increased due to a change in reporting procedure.
⁵ The Kessner Index is a classification of prenatal care based on the month of pregnancy prenatal care began, the number of prenatal visits and the length of pregnancy.
⁶ Muskegon county data not available due to a reporting problem. State of Michigan data does not reflect Muskegon births.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.12
Live Births by Age of Mother and County of Residence
Michigan Residents, 1989

Area	Total	Age of Mother										40 and Over	Age Not Stated	
		Under 15	15	16	17	18	19	15-19	20-24	25-29	30-34			35-39
Michigan	148,164	396	984	2,123	3,778	5,493	6,771	19,149	39,352	47,853	30,462	9,571	1,265	116
Alcona	97	0	0	2	1	5	6	14	43	25	12	2	1	0
Alger	100	0	1	2	2	2	5	12	27	33	21	6	1	0
Allegan	1,410	1	5	20	32	55	57	169	430	455	263	76	15	0
Alpena	377	0	1	8	8	17	21	55	99	122	68	28	4	1
Antrim	249	0	0	2	4	11	10	27	87	72	48	14	1	0
Arenac	219	0	4	3	5	6	9	27	69	81	32	9	1	0
Baraga	96	0	0	1	0	4	5	10	29	27	8	1	1	0
Barry	658	0	3	4	19	26	38	90	204	213	117	31	3	0
Bay	1,604	4	8	17	42	72	68	207	430	543	315	88	15	2
Benzie	178	0	0	1	6	5	11	23	52	57	28	16	2	0
Berrien	2,678	13	42	52	117	145	155	511	815	764	403	147	22	3
Branch	620	1	2	6	22	35	33	98	210	188	86	27	9	1
Calhoun	2,112	5	19	60	74	107	124	384	651	601	352	95	20	4
Cass	619	1	3	6	17	39	41	106	191	205	85	27	3	1
Charlevoix	325	0	2	2	6	10	11	31	100	93	77	18	6	0
Cheboygan	273	0	1	3	5	10	21	40	87	77	52	13	4	0
Chippewa	407	1	1	7	12	23	16	59	152	110	57	23	4	0
Clare	363	0	4	12	12	16	14	58	135	89	57	22	4	1
Clinton	806	1	4	4	9	17	25	59	206	314	162	61	3	1
Crawford	183	3	2	2	5	9	8	26	50	66	29	8	1	0
Delta	503	0	1	4	7	19	25	56	142	176	93	29	5	2
Dickinson	334	0	3	2	5	12	12	34	74	119	77	26	4	0
Eaton	1,166	1	3	19	24	41	37	124	317	396	252	68	7	0
Emmet	362	0	0	4	5	8	10	27	82	114	103	30	6	1
Genesee	7,327	36	80	146	261	328	417	1,232	2,251	2,201	1,196	363	45	3
Gladwin	286	0	1	1	6	9	24	41	115	71	41	14	4	0
Gogebic	150	0	0	1	0	11	8	20	49	46	26	7	1	1
Grand Traverse	923	1	2	6	19	32	36	95	180	311	260	70	6	0
Gratiot	554	1	3	3	15	27	35	83	167	200	86	13	4	0
Hillsdale	650	1	1	5	18	26	31	81	220	196	106	36	10	0
Houghton	422	0	1	1	7	8	16	33	121	148	82	32	6	0
Huron	514	0	1	5	8	11	26	51	148	192	88	33	2	0
Ingham	4,560	12	23	71	108	149	236	587	1,231	1,441	919	336	31	3
Ionia	836	1	5	8	24	27	42	106	267	281	135	38	7	1
Iosco	574	1	2	4	9	19	31	65	226	186	72	19	5	0
Iron	146	0	0	4	4	5	11	24	41	37	25	15	4	0
Isabella	694	0	3	4	8	20	32	67	215	235	126	43	8	0
Jackson	2,250	3	16	41	63	100	139	359	656	708	390	124	8	0
Kalamazoo	3,425	8	21	35	69	115	150	390	839	1,192	747	224	23	2
Kalkaska	191	0	1	5	8	10	14	38	58	54	33	8	0	0
Kent	9,421	21	58	130	200	285	357	1,030	2,399	3,349	1,967	576	77	2
Keweenaw	11	0	0	0	0	0	1	1	2	1	5	2	0	0

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.12 (continued)
Live Births by Age of Mother and County of Residence
Michigan Residents, 1989

Area	Total	Age of Mother										40 and Over	Age Not Stated	
		Under 15	15	16	17	18	19	15-19	20-24	25-29	30-34			35-39
Lake	119	0	3	2	7	11	4	27	43	31	12	6	0	0
Lapeer	1,057	3	3	7	25	33	52	120	325	345	192	64	7	1
Leelanau	233	0	1	1	3	4	6	15	74	77	29	29	2	0
Lenawee	1,340	4	7	8	31	76	68	190	431	409	224	69	11	2
Livingston	1,578	1	5	5	13	29	46	98	285	618	419	145	12	0
Luce	86	0	0	2	3	6	9	20	24	27	12	1	2	0
Mackinac	157	0	0	4	5	8	6	23	57	50	19	8	0	0
Mackinaw	10,075	4	17	51	111	182	252	613	2,195	3,884	2,593	719	64	3
Manistee	267	0	1	4	4	11	15	35	73	81	54	23	1	0
Marquette	994	1	8	5	15	20	38	86	305	330	206	62	4	0
Mason	339	0	1	5	8	15	17	46	99	120	57	14	3	0
Mecosta	451	0	0	7	8	10	26	51	143	140	86	28	3	0
Menominee	206	0	0	0	4	6	11	21	68	74	33	9	0	1
Midland	1,116	1	1	7	13	34	53	108	256	413	247	81	10	0
Missaukee	174	0	1	1	5	5	9	21	52	63	30	6	2	0
Monroe	1,936	4	8	22	49	80	97	256	543	659	357	97	14	6
Montcalm	840	2	2	19	29	42	57	149	301	222	130	32	4	0
Montmorency	87	0	0	4	2	1	6	13	24	27	16	7	0	0
Muskegon	2,728	12	24	56	74	114	141	409	855	825	465	140	19	3
Newaygo	630	1	5	9	21	27	35	97	187	216	94	30	5	0
Oakland	16,414	20	37	117	201	356	431	1,142	3,038	5,697	4,788	1,488	230	11
Oceana	346	1	2	6	3	14	19	44	117	109	54	18	3	0
Ogemaw	268	0	0	4	8	15	17	44	88	81	39	15	1	0
Ontonagon	96	0	0	0	0	5	6	12	38	31	12	3	0	0
Osceola	303	0	1	6	10	14	9	40	100	99	45	17	2	0
Oscoda	105	0	0	0	2	4	4	10	42	32	14	6	1	2
Otsego	242	0	0	2	2	13	15	32	77	77	46	6	5	2
Ottawa	3,103	2	11	17	47	78	92	245	753	1,245	649	190	19	0
Presque Isle	169	0	0	2	1	5	5	13	47	63	36	10	0	0
Roscommon	236	0	1	4	7	7	13	32	85	58	52	6	2	1
Saginaw	3,560	13	39	71	133	173	181	597	988	1,069	658	203	23	9
St. Clair	2,161	3	7	26	61	86	101	281	657	723	391	100	6	0
St. Joseph	912	1	5	10	20	35	52	122	299	294	150	37	9	0
Sanilac	545	2	2	4	17	16	23	62	172	177	103	23	5	1
Schoolcraft	92	0	1	1	6	4	1	13	19	40	18	1	1	0
Shiawassee	980	1	1	8	21	37	52	119	330	308	165	47	9	1
Tuscola	787	2	6	9	20	30	39	104	215	277	135	52	1	1
Van Buren	1,139	3	7	20	45	51	71	194	333	324	214	63	7	1
Washtenaw	4,172	11	16	23	71	75	130	315	813	1,351	1,118	496	64	4
Wayne	39,024	186	431	860	1,393	1,870	2,173	6,727	10,833	11,272	7,270	2,372	330	34
Wexford	397	1	3	1	13	15	20	52	135	119	65	21	4	0
County Not Stated	27	1	0	0	0	0	1	1	7	7	6	2	0	3

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.13
Vital Statistics for Residents of Selected Michigan Cities¹
1989

Area	Live Births	Deaths	Infant Deaths		Fetal Deaths	
			Number	Rate	Number	Rate
Allen Park	370	312	6	16.2	-	-
Ann Arbor	1,508	426	15	9.9	9	5.9
Battle Creek	1,142	653	19	16.6	4	3.5
Bay City	708	431	4	5.6	4	5.6
Burton City	371	214	7	18.9	2	5.4
Dearborn	1,449	893	11	7.6	4	2.8
Dearborn Heights	773	613	9	11.6	5	6.4
Detroit	22,721	12,232	485	21.3	229	10.0
East Detroit	536	413	3	5.6	-	-
East Lansing	434	109	1	2.3	1	2.3
Farmington Hills	994	495	4	4.0	5	5.0
Ferndale	471	280	8	17.0	2	4.2
Flint	3,577	1,587	65	18.2	16	4.5
Garden City	464	263	6	12.9	4	8.5
Grand Rapids	4,457	2,038	52	11.7	20	4.5
Highland Park	439	311	11	25.1	1	2.3
Holland	633	234	7	11.1	1	1.6
Inkster	599	356	9	15.0	4	6.6
Jackson	900	447	16	17.8	14	15.3
Kalamazoo	1,579	671	20	12.7	8	5.0
Kentwood	687	141	1	1.5	4	5.8
Lansing	2,747	965	28	10.2	16	5.8
Lincoln Park	632	394	6	9.5	4	6.3
Livonia	1,235	933	6	4.9	5	4.0
Madison Heights	492	258	9	18.3	3	6.1
Midland	527	248	7	13.3	7	13.1
Muskegon	871	464	12	13.8	7	8.0
Oak Park	552	237	8	14.5	4	7.2
Pontiac	1,897	718	34	17.9	19	9.9
Portage	562	228	4	7.1	3	5.3
Port Huron	614	404	12	19.5	1	1.6
Roseville	779	474	7	9.0	2	2.6
Royal Oak	1,035	640	10	9.7	4	3.8
Saginaw	1,779	817	31	17.4	22	12.2
St Clair Shores	843	746	6	7.1	-	-
Southfield	1,003	761	9	9.0	8	7.9
Southgate	368	251	2	5.4	3	8.1
Sterling Heights	1,549	642	13	8.4	4	2.6
Taylor	1,186	518	9	7.6	12	10.0
Troy	868	360	4	4.6	1	1.2
Warren	1,880	1,380	18	9.6	12	6.3
Westland	1,385	677	9	6.5	3	2.2
Wyandotte	491	327	3	6.1	3	6.1
Wyoming	1,180	369	11	9.3	3	2.5

¹ 25,000 population or over according to the 1980 Census.

² On January 1, 1983, Battle Creek City annexed Battle Creek Township. The data shown for Battle Creek in this table are for the current boundaries of Battle Creek, and thus are not comparable to data for Battle Creek for earlier years. The infant death rate in 1982 for the area which is now Battle Creek was 15.9.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.14
 Number of Deaths by Underlying Cause and County of Residence
 Michigan Residents, 1989

Area	All Causes	T.B. All Forms	All Other Infectious and Parasitic Diseases	Malignant Neoplasms							
				Total	Digestive Organs and Peritoneum	Respiratory and Intrathoracic Organs	Breast	Genital Organs	Urinary Organs	Leukemia	Other
Michigan	78,566	44	1,124	19,264	4,393	5,137	1,651	2,072	725	750	3,536
Alcona	146	-	1	35	8	10	3	3	3	-	8
Alger	124	-	1	25	8	5	1	3	-	2	6
Allegan	637	-	12	141	36	31	11	19	5	7	32
Alpena	308	1	2	73	16	21	3	8	5	5	15
Antrim	200	-	4	46	11	10	7	7	2	2	7
Arenac	155	-	-	40	12	10	1	4	3	1	9
Baraga	94	-	-	21	6	5	-	3	-	3	4
Barry	380	-	3	92	28	21	3	14	8	1	17
Bay	971	-	6	247	52	72	24	33	9	12	45
Benzie	129	-	2	31	9	8	1	6	1	1	5
Berrien	1,508	-	17	347	82	91	35	46	12	16	65
Branch	392	-	4	93	21	26	11	9	-	5	21
Calhoun	1,362	1	18	290	58	95	20	38	9	12	58
Cass	405	1	5	88	17	19	6	6	2	6	30
Charlevoix	176	-	1	46	15	12	2	6	2	5	8
Cheboygan	220	-	1	45	6	17	2	6	1	1	12
Chippewa	260	-	4	67	14	21	8	7	4	1	17
Clare	293	-	1	62	11	19	10	3	1	1	17
Clinton	341	-	7	69	12	23	3	8	2	3	18
Crawford	129	-	1	35	9	12	1	6	4	2	1
Delta	354	-	5	80	21	22	6	10	5	3	13
Dickinson	260	-	1	62	21	19	7	4	1	-	10
Eaton	650	-	7	167	43	33	19	17	6	13	36
Emmet	222	-	2	44	9	11	4	6	1	3	10
Genesee	3,431	2	40	757	178	218	75	85	27	25	149
Gladwin	243	-	1	63	12	24	2	12	3	2	8
Gogebic	225	-	6	47	12	13	3	4	-	3	12
Grand Traverse	466	-	4	109	23	31	11	16	4	3	21
Gratiot	407	-	1	77	22	12	7	14	2	4	16
Hillsdale	387	-	7	96	29	21	7	13	5	2	19
Houghton	377	-	1	70	17	21	6	9	4	2	11
Huron	385	-	2	91	32	18	10	13	4	4	10
Ingham	1,743	-	23	419	103	107	34	46	14	13	102
Ionia	432	-	1	100	30	27	6	9	6	1	21
Iosco	281	-	2	67	10	23	7	4	3	3	17
Iron	200	-	2	48	19	14	2	4	2	1	6
Isabella	327	-	6	80	21	20	5	8	1	3	22
Jackson	1,308	-	27	331	85	80	27	31	17	15	76
Kalamazoo	1,627	2	22	401	89	119	34	46	18	17	78
Kalkaska	107	-	-	27	5	6	2	4	3	2	5
Kent	3,657	1	53	898	231	229	72	107	37	49	173

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County of Residence
 Michigan Residents, 1989

Area	All Causes	T.B. All Forms	All Other Infectious and Parasitic Diseases	Malignant Neoplasms									
				Total	Digestive Organs and Peritoneum	Respiratory and Intra-thoracic Organs	Breast	Genital Organs	Urinary Organs	Leukemia	Other		
Keweenaw	32	-	-	9	6	1	-	2	-	-	-	-	-
Lake	151	-	-	39	7	13	2	6	2	5	2	4	-
Lapeer	469	-	5	103	28	32	8	12	6	1	5	17	4
Leelanau	150	-	2	38	9	11	3	1	12	5	5	5	4
Lenawee	779	-	6	206	63	46	13	23	1	4	17	40	4
Livingston	626	-	6	182	35	54	15	22	22	8	9	39	4
Luce	73	-	-	18	5	4	1	2	2	2	-	4	-
Mackinac	129	-	-	34	11	11	-	3	3	1	1	7	-
Macomb	5,719	3	80	1,494	354	412	170	139	49	5	58	312	8
Manistee	264	-	1	57	11	18	3	8	5	5	4	8	-
Marquette	503	1	4	109	31	40	7	10	6	6	1	14	14
Mason	307	-	1	92	19	34	12	10	10	1	3	13	13
Mecosta	274	-	2	60	16	17	9	1	2	2	1	14	4
Menominee	173	-	2	28	8	9	2	4	1	1	-	4	4
Midland	454	-	4	119	26	38	10	19	4	2	7	17	7
Missaukee	111	-	-	27	9	7	2	4	2	1	1	3	3
Monroe	944	-	-	233	65	67	21	23	15	3	11	31	31
Montcalm	435	-	12	101	12	35	8	14	14	4	4	25	25
Montmorency	136	-	2	45	9	15	4	4	4	4	1	8	8
Muskegon	1,433	-	10	315	58	103	38	37	12	12	6	61	61
Newaygo	335	-	2	69	20	19	7	8	8	5	2	8	8
Oakland	7,873	4	121	1,966	453	500	197	217	99	99	85	415	415
Oceana	214	-	2	46	12	9	6	3	3	1	2	13	13
Ogemaw	258	-	2	60	13	22	5	3	3	5	2	10	10
Ontonagon	116	-	1	22	5	5	3	4	4	-	1	4	4
Osceola	167	-	1	41	11	14	3	8	8	1	2	2	2
Oscoda	96	-	2	18	6	7	-	-	-	1	1	4	4
Otsego	173	-	4	42	13	16	3	1	1	1	2	6	6
Ottawa	1,013	2	11	240	57	50	28	32	8	8	19	46	46
Presque Isle	144	-	1	36	8	4	4	7	2	2	3	8	8
Roscommon	256	-	-	69	8	19	7	9	9	3	5	18	18
Saginaw	1,895	-	20	408	90	123	44	46	14	14	12	79	79
St. Clair	1,280	-	11	307	74	94	18	39	10	10	13	59	59
St. Joseph	522	-	3	124	27	38	11	16	7	7	4	21	21
Sanilac	438	1	-	101	23	19	11	18	3	3	5	22	22
Schoolcraft	110	-	3	26	3	10	3	4	1	1	2	3	3
Shiawassee	538	-	6	131	32	34	13	10	6	6	7	29	29
Tuscola	450	-	3	83	17	26	9	13	7	7	3	13	13
Van Buren	634	-	8	158	41	39	15	21	11	11	11	20	20
Washtenaw	1,483	1	28	341	78	95	32	28	15	15	8	85	85
Wayne	21,822	24	453	4,677	1,163	1,410	401	538	164	164	168	833	833
Wexford	239	-	-	62	14	21	4	3	3	5	2	13	13
County Not Stated	29	-	-	1	-	-	1	-	-	-	-	-	-

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County of Residence
 Michigan Residents, 1989

Area	Diabetes Mellitus	Nutritional Deficiencies	Major Cardiovascular Diseases						Pneumonia and Influenza	C.O.P.D. and Allied Diseases	Ulcer of Stomach and Duodenum	Chronic Liver Disease and Cirrhosis
			Total	Diseases of the Heart	Hypertension with or without Renal Disease	Cerebrovascular Disease	Atherosclerosis	Other Diseases of Arteries, Arterioles, and Capillaries				
Michigan	2,052	112	35,216	28,091	265	5,173	832	915	2,633	2,852	283	1,170
Alcona	3	-	62	46	-	10	2	4	5	10	1	-
Alger	6	-	63	50	-	12	-	1	2	5	1	3
Allegan	13	-	286	215	1	45	18	7	32	15	2	11
Alpena	8	-	146	113	-	23	1	9	8	8	-	7
Antrim	7	-	98	77	-	16	2	3	7	4	-	4
Arenac	5	-	71	60	1	10	-	0	3	7	-	4
Baraga	3	-	48	38	-	8	1	1	-	4	-	1
Barry	10	-	144	112	4	18	5	5	22	19	1	4
Bay	28	1	461	370	8	59	14	10	19	41	6	15
Benzie	-	-	72	54	-	15	2	1	4	2	-	1
Berrien	52	1	672	500	6	122	26	18	49	64	9	14
Branch	14	-	164	122	1	33	5	3	20	19	-	5
Calhoun	36	2	573	462	3	74	20	14	92	56	3	19
Cass	7	1	195	147	4	33	6	5	12	15	1	5
Charlevoix	7	-	70	59	1	7	1	2	5	9	-	2
Cheboygan	6	1	100	85	-	13	-	2	11	16	1	5
Chippewa	5	1	119	103	1	13	-	2	6	8	-	2
Clare	5	-	158	137	-	15	4	6	8	14	1	5
Clinton	7	-	152	116	-	25	4	7	10	19	2	1
Crawford	2	-	59	45	-	12	1	1	5	5	-	2
Delta	9	1	156	113	2	25	8	8	8	21	-	5
Dickinson	6	-	136	95	4	27	5	5	7	10	-	4
Eaton	16	1	277	180	2	62	22	11	20	21	-	5
Emmet	1	-	97	78	-	13	-	6	12	12	1	1
Genesee	98	2	1,566	1,245	15	224	54	28	78	139	9	44
Gladwin	2	2	122	90	-	15	6	11	8	7	2	3
Gogebic	1	2	111	82	-	23	1	5	7	14	1	5
Grand Traverse	7	2	205	145	3	41	7	9	19	13	3	5
Gratiot	12	-	213	172	-	32	6	3	22	19	1	5
Hillsdale	15	-	151	116	3	20	3	9	16	21	3	2
Houghton	7	-	197	138	1	45	6	7	20	12	-	6
Huron	9	1	193	148	1	35	1	8	24	7	3	1
Ingham	50	2	723	568	8	109	19	19	72	87	7	20
Ionia	17	1	183	146	-	27	3	7	15	25	1	3
Iosco	9	-	141	112	-	21	4	4	6	10	2	2
Iron	6	-	87	68	-	17	2	-	14	3	2	1
Isabella	11	-	157	113	2	32	6	4	13	11	-	-
Jackson	27	2	541	448	3	61	17	12	51	65	7	16
Kalamazoo	33	6	663	526	8	94	12	23	79	74	8	18
Kalkaska	3	1	39	27	-	10	2	-	2	6	-	-
Kent	67	10	1,636	1,273	11	243	59	50	173	118	10	38

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County of Residence
 Michigan Residents, 1989

Area	Diabetes Mellitus	Nutritional Deficiencies	Total	Major Cardiovascular Diseases							Pneumonia and Influenza	C.O.P.D. and Allied Diseases	Ulcer of Stomach and Duodenum	Chronic Liver Disease and Cirrhosis
				Diseases of the Heart	Hypertension with or without Renal Disease	Cerebrovascular Disease	Atherosclerosis	Other Diseases of Arteries, Arterioles, and Capillaries						
Keweenaw	-	-	15	12	-	3	-	0	1	1	1	1	-	1
Lake	6	2	69	57	-	10	-	1	1	4	6	-	-	1
Lapeer	15	1	212	173	3	24	5	7	7	7	14	-	-	1
Leelanau	2	1	68	53	1	11	-	3	4	4	5	2	2	4
Lenawee	14	1	346	257	1	60	13	15	26	26	31	3	3	-
Livingston	15	-	267	227	1	28	4	7	10	10	28	2	2	6
Luce	1	-	31	24	-	3	1	3	3	3	5	-	-	4
Mackinac	2	-	57	46	-	10	1	-	8	8	12	-	-	1
Macomb	139	7	2,628	2,138	17	380	52	41	212	212	197	15	15	78
Manistee	10	-	133	96	1	30	5	1	5	5	9	-	-	4
Marquette	9	2	230	163	4	42	13	8	16	16	19	3	3	5
Mason	10	-	135	105	-	20	6	4	7	7	9	-	-	3
Mecosta	14	1	130	93	2	23	3	9	8	8	7	2	2	3
Menominee	3	-	100	64	-	24	9	3	6	6	3	-	-	1
Midland	12	1	206	152	3	31	14	6	13	13	17	2	2	2
Missaukee	3	-	52	37	1	11	3	-	2	2	2	-	-	4
Monroe	31	3	408	337	2	55	6	8	24	24	47	3	3	-
Montcalm	7	5	183	152	2	24	6	5	14	14	21	1	1	11
Montmorency	2	-	60	48	-	8	-	4	2	2	4	-	-	5
Muskegon	59	-	655	507	7	115	14	4	52	52	51	2	2	13
Newaygo	9	-	156	132	1	18	2	3	11	11	19	2	2	3
Oakland	197	9	3,618	2,826	23	592	65	112	225	225	276	28	28	113
Oceana	5	-	109	87	-	17	4	1	10	10	8	-	-	2
Ogemaw	5	-	123	87	1	24	7	4	7	7	19	-	-	3
Ontonagon	5	-	71	52	-	12	6	1	2	2	2	-	-	-
Oscoda	2	-	74	57	-	11	5	1	9	9	8	1	1	-
Osego	2	1	42	35	1	6	-	0	6	6	5	2	2	1
Otsego	4	-	80	64	-	10	2	4	6	6	9	2	2	2
Ottawa	17	3	452	333	3	80	17	19	46	46	37	4	4	4
Presque Isle	4	-	63	53	-	9	-	1	5	5	3	-	-	-
Roscommon	4	-	123	98	2	14	3	6	2	2	14	-	-	6
Saginaw	58	1	876	697	11	113	31	24	57	57	76	6	6	37
St. Clair	31	-	580	483	4	79	-	14	41	41	65	4	4	20
St. Joseph	16	-	228	179	2	33	5	9	12	12	22	2	2	3
Sanilac	13	-	202	156	3	38	2	3	13	13	15	1	1	5
Schoolcraft	2	-	48	38	-	5	3	2	4	4	3	-	-	1
Shiawassee	15	-	258	169	1	56	24	8	9	9	18	4	4	10
Tuscola	11	-	225	179	3	34	5	4	12	12	19	1	1	6
Van Buren	19	1	271	210	6	37	17	6	19	19	28	2	2	2
Washtenaw	35	1	607	484	6	75	19	23	54	54	46	7	7	9
Wayne	608	32	9,594	7,984	64	1,240	106	200	658	658	621	92	92	510
Wexford	6	-	109	79	-	19	8	3	14	14	14	1	1	-
County Not Stated	-	-	15	14	1	-	-	-	1	1	2	-	-	2

Source: Office of the State Registrar and Center for Health Statistics, MDH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County of Residence
 Michigan Residents, 1989

Area	Nephritis, Nephrotic Syndrome & Nephrosis	Complica- tions of Preg- nancy, Child- birth and the Puerperium	Congenital Anomalies	Certain Conditions Originating in the Peri- natal Period	Symptoms, Signs, and Ill-Defined Conditions	All Other Disease	Accidents			Suicide	Homicide and Legal Inter- vention	All Other External Causes
							Total	Motor Vehicle	All Other			
Michigan	789	13	475	900	407	6,791	3,228	1,750	1,478	1,043	1,064	106
Alcona	2	-	2	1	-	13	8	4	4	3	-	-
Alger	1	-	1	6	-	7	5	1	4	4	-	-
Allegan	9	-	6	1	1	52	36	28	8	11	4	-
Alpena	2	-	1	1	3	31	17	7	10	3	-	-
Antrim	2	-	1	-	3	16	7	4	3	1	-	-
Arenac	1	-	1	2	-	10	9	5	4	2	-	-
Baraga	-	-	1	-	1	8	6	3	3	1	-	-
Barry	4	-	1	4	3	33	34	23	11	5	1	-
Bay	9	1	5	6	6	59	45	31	14	16	-	-
Benzie	-	-	-	1	-	11	4	1	3	1	-	-
Berrien	15	-	8	10	11	140	64	27	37	17	15	3
Branch	5	-	2	4	3	35	19	12	7	5	-	-
Calhoun	15	-	6	15	9	125	65	27	38	23	12	2
Cass	6	1	3	1	3	30	23	14	9	5	3	-
Charlevoix	-	-	1	4	1	19	7	4	3	4	-	-
Cheboygan	6	-	1	-	1	20	8	4	4	2	-	-
Chippewa	2	-	2	-	1	25	11	5	6	3	1	-
Clare	3	-	2	1	1	21	8	4	4	7	1	-
Clinton	6	-	3	1	4	27	22	14	8	10	1	-
Crawford	1	-	-	1	1	11	5	4	1	-	1	-
Delta	5	-	2	-	1	41	15	6	9	5	-	-
Dickinson	1	-	1	-	-	17	11	6	5	4	-	-
Eaton	8	-	3	1	2	76	38	29	9	6	2	-
Emmet	7	-	2	1	-	27	13	1	12	2	-	-
Genesee	47	-	21	66	21	272	162	92	70	46	56	5
Gladwin	1	-	-	2	1	13	10	3	7	4	2	-
Gogebic	5	-	2	1	1	21	3	1	2	-	-	-
Grand Traverse	2	-	2	-	3	49	33	17	16	7	3	-
Gratiot	5	-	5	1	-	28	15	8	7	6	-	-
Hillsdale	4	-	4	3	2	26	28	18	10	9	-	-
Houghton	5	-	1	1	-	36	18	9	9	3	-	-
Huron	4	-	2	2	1	23	18	13	5	3	1	-
Ingham	13	1	14	12	8	179	73	41	32	25	14	1
Ionia	4	-	3	5	-	39	28	18	10	6	1	-
Iosco	3	-	1	2	-	18	14	9	5	3	-	-
Iron	3	-	1	-	-	24	5	3	2	5	-	-
Isabella	3	-	2	-	4	18	17	8	9	3	-	-
Jackson	14	-	4	15	6	111	67	40	27	14	10	-
Kalamazoo	14	-	10	20	7	190	59	32	27	13	8	-
Kalkaska	2	-	3	1	-	12	8	5	3	5	1	-
Kent	30	-	33	43	19	310	145	81	64	47	18	8

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County of Residence
 Michigan Residents, 1989

Area	Nephritis, Nephrotic Syndrome & Nephrosis	Complications of Pregnancy, Childbirth and the Puerperium	Congenital Anomalies	Certain Conditions Originating in the Perinatal Period	Symptoms, Signs, and Ill-defined Conditions	All Other Disease	Accidents			Suicide	Homicide and Legal Intervention	All Other External Causes
							Total	Motor Vehicle	All Other			
Keweenaw	-	-	-	-	-	2	2	2	-	1	-	-
Lake	1	-	1	-	3	12	5	1	4	1	-	-
Lapeer	10	-	2	4	3	47	33	17	16	6	2	-
Leelanau	3	-	1	-	3	11	6	3	3	4	-	-
Lenawee	6	-	3	7	2	57	53	42	11	9	3	-
Livingston	6	-	4	2	2	55	32	21	11	10	-	-
Luce	1	-	-	-	1	9	3	-	3	-	-	-
Mackinac	-	-	-	-	1	8	4	1	3	2	-	-
Macomb	59	-	37	39	15	429	164	84	80	83	37	3
Manistee	2	-	2	1	2	29	6	5	1	2	1	-
Marquette	5	-	6	2	3	48	28	6	22	13	-	-
Mason	2	-	1	-	2	34	9	3	6	2	-	-
Mecosta	2	-	1	-	2	25	13	7	6	3	-	-
Menominee	-	-	1	-	1	17	6	1	5	4	3	-
Midland	4	-	6	6	2	33	22	9	13	2	1	-
Missaukee	2	-	1	2	1	8	9	6	3	1	-	-
Monroe	8	-	7	5	1	88	44	32	12	16	3	-
Montcalm	5	-	5	2	4	37	32	20	12	9	1	-
Montmorency	2	-	2	-	-	8	6	2	4	3	-	-
Muskegon	9	-	10	12	9	125	83	48	35	12	15	-
Newaygo	1	-	-	3	3	31	23	12	11	2	1	-
Oakland	62	1	49	82	39	640	251	146	105	118	57	17
Oceana	3	-	2	-	1	14	10	7	3	2	-	-
Ogemaw	7	-	-	-	-	19	8	3	5	4	-	-
Ontonagon	2	-	-	1	-	7	3	3	-	-	1	-
Osceola	-	-	1	3	2	11	12	8	4	-	-	-
Oscoda	2	-	-	1	1	10	3	1	2	1	-	-
Oshtemo	-	-	1	3	2	12	4	3	1	2	-	-
Ottawa	9	-	10	11	9	85	60	41	19	11	1	1
Presque Isle	4	-	-	-	-	19	7	5	2	2	-	-
Roscommon	2	-	-	2	1	22	9	4	5	2	-	-
Saginaw	21	-	14	29	9	156	87	36	51	20	20	-
St. Clair	14	-	4	13	5	94	67	47	20	16	8	-
St. Joseph	8	-	3	3	1	55	34	24	10	6	2	-
Sanilac	6	-	6	1	6	30	25	14	11	11	2	-
Schoolcraft	3	-	-	-	-	13	5	4	1	2	-	-
Shiawassee	1	-	2	4	3	39	30	21	9	7	1	-
Tuscola	5	-	3	6	2	35	29	23	6	1	1	-
Van Buren	4	-	6	4	4	52	42	26	16	10	4	-
Washtenaw	9	-	14	4	13	187	74	40	34	28	6	-
Wayne	227	-	114	22	122	1,937	691	303	388	265	735	1
Wexford	2	6	-	391	2	16	7	5	2	3	-	65
County Not Stated	1	-	-	3	-	2	4	2	2	-	1	-

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.15
Reported Cases of Certain Communicable Diseases by County
Michigan Residents, 1989

Area	Total	Gonorrhea	Chicken Pox	Hepatitis (all types)	Salmonella Infections	Tuberculosis	Syphilis	Mumps	Dysentery Bacillary	Measles	Rubella	Meningococcal Infections	Whooping Cough
Michigan	83,723	33,627	44,665	1,044	1,176	464	1,613	161	45	359	1	70	48
Alcona	4	3	1	-	-	-	1	-	-	-	-	-	-
Alger	1	-	208	13	3	2	-	4	-	-	-	2	-
Allegan	263	31	89	2	1	-	-	-	-	-	-	-	-
Alpena	92	2	5	1	1	-	-	-	-	-	-	-	-
Antrim	9	-	4	-	-	-	-	-	-	-	-	-	-
Arenac	5	-	3	-	-	-	-	-	-	-	-	-	-
Baraga	4	-	4	1	-	-	-	-	-	-	-	-	-
Barry	232	21	191	9	5	-	2	1	-	1	-	-	-
Bay	589	44	512	4	16	3	2	2	-	7	-	-	-
Benzie	47	32	6	-	2	-	-	-	-	-	-	-	-
Berrien	2,129	1,050	966	23	31	11	10	4	3	28	-	2	1
Branch	316	15	286	3	8	1	8	1	-	-	-	-	2
Calhoun	924	585	297	14	9	6	2	1	-	-	-	-	1
Cass	261	64	179	6	5	2	2	1	-	-	-	-	-
Charlevoix	41	17	23	-	1	-	-	-	-	-	-	-	-
Cheboygan	58	2	56	-	-	-	-	-	-	-	-	-	-
Cheboygan	185	8	162	8	-	1	5	-	1	-	-	1	2
Chippewa	14	2	4	4	4	1	1	-	-	-	-	1	-
Clare	141	6	126	1	7	-	1	-	1	-	-	-	-
Clinton	141	6	140	-	-	-	-	-	-	-	-	-	-
Crawford	144	2	140	-	-	-	-	-	-	-	-	-	-
Delta	140	1	131	4	3	-	-	-	-	-	-	-	-
Dickinson	147	5	133	7	7	1	1	-	-	-	-	-	-
Eaton	244	40	185	7	6	2	1	2	1	-	-	1	1
Emmet	21	-	11	2	2	1	1	1	-	-	-	1	-
Emmet	4,259	2,801	1,295	48	59	17	20	1	-	1	-	2	-
Genesee	45	4	35	1	3	-	1	1	-	1	-	-	-
Gladwin	5	-	4	-	-	-	-	-	-	1	-	-	-
Gogebic	5	-	4	-	-	-	-	-	-	4	-	-	-
Grand Traverse	246	6	224	1	6	1	3	1	-	1	-	1	-
Grand Traverse	324	13	307	1	1	-	-	1	-	1	-	-	-
Gratiot	369	10	345	-	7	1	-	2	-	-	-	-	1
Hillsdale	110	11	98	-	1	-	-	-	-	-	-	-	-
Houghton	118	7	106	1	3	1	-	-	-	-	-	-	-
Huron	2,074	1,090	879	47	43	8	2	1	-	-	-	2	-
Ingham	291	14	266	4	2	-	3	-	1	-	-	-	-
Ionia	9	6	-	-	3	-	-	-	-	-	-	-	-
Iosco	7	3	-	3	1	-	-	-	-	-	-	-	-
Iron	113	27	67	2	7	1	1	-	8	-	-	-	-
Isabella	518	291	121	10	23	8	28	-	1	24	-	1	2
Jackson	2,124	1,082	913	47	31	6	8	5	3	-	-	1	2
Kalamazoo	156	18	116	1	1	-	-	-	-	-	-	1	-
Kalkaska	18	18	116	1	1	-	-	-	-	-	-	1	-
Kent	4,112	1,692	2,150	103	67	20	37	4	10	2	-	2	3

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.15 (continued)
 Reported Cases of Certain Communicable Diseases by County
 Michigan Residents, 1989

Area	Total	Gonorrhea	Chicken Pox	Hepatitis (all types)	Salmonella Infections	Tuberculosis	Syphilis	Mumps	Dysentery Bacillary	Measles	Rubella	Meningococcal Infections	Whooping Cough
Keweenaw	1	-	-	1	-	-	-	-	-	-	-	-	-
Lake	13	7	1	3	-	-	-	-	-	1	-	-	1
Lapeer	962	2	899	-	4	-	-	6	-	50	-	-	1
Leelanau	19	-	17	-	-	2	-	-	-	-	-	-	1
Lenawee	371	50	275	17	16	2	2	-	-	-	-	-	2
Livingston	345	28	267	11	15	3	-	3	-	1	-	-	-
Luce	2	2	-	-	-	-	-	-	-	-	-	-	-
Mackinac	8	7	-	-	-	-	-	-	-	-	-	-	-
Macomb	3,448	459	2,679	88	-	18	37	9	1	3	-	9	1
Manistee	320	32	283	1	2	2	-	-	-	-	-	-	-
Marquette	188	28	129	8	15	1	2	1	-	-	-	1	-
Mason	16	4	-	-	1	-	1	-	-	-	-	-	-
Mecosta	217	31	161	-	16	1	-	-	-	7	-	-	10
Memominee	241	-	231	1	-	-	-	-	-	8	-	-	1
Midland	277	38	232	1	6	-	-	-	-	-	-	-	1
Missaukee	121	1	116	1	1	-	-	-	2	-	-	-	-
Monroe	545	46	464	6	14	2	2	5	-	2	-	1	-
Montcalm	69	4	57	1	4	1	1	-	-	-	-	-	-
Montmorency	10	1	9	-	-	-	-	-	-	-	-	-	-
Muskegon	1,297	522	714	11	22	4	4	-	-	2	-	3	-
Newaygo	269	15	237	3	4	5	1	2	-	1	-	-	1
Oakland	12,404	1,766	10,025	133	135	50	111	33	4	19	-	11	-
Oceana	104	-	100	2	1	-	-	-	-	1	-	-	-
Ogemaw	67	1	61	1	2	-	1	1	-	-	-	-	-
Ontonagon	8	-	8	-	-	-	-	-	-	-	-	-	-
Oscoda	5	1	-	-	-	-	1	-	-	-	-	-	-
Oscoda	16	1	-	1	-	-	-	-	-	2	-	-	-
Otsego	6	3	2	-	-	-	-	-	-	15	-	-	-
Ottawa	891	75	760	15	13	3	1	1	1	2	1	1	1
Presque Isle	15	1	11	-	2	-	-	1	-	-	-	-	-
Roscommon	68	2	64	-	2	-	-	-	-	-	-	-	-
Saginaw	2,731	1,336	1,312	29	22	6	9	3	-	-	-	-	-
St. Clair	1,584	167	1,307	23	10	5	1	3	-	59	-	-	1
St. Joseph	272	47	198	8	9	3	2	-	-	1	-	-	1
Sanilac	123	7	91	7	4	1	-	2	-	9	-	-	1
Schoolcraft	1	-	-	-	1	-	-	-	-	-	-	-	-
Shiawassee	362	14	324	8	7	2	1	-	-	-	-	1	-
Tuscola	376	8	343	7	9	2	3	-	2	-	-	-	-
Van Buren	223	61	136	6	11	2	1	-	-	-	-	1	2
Washtenaw	1,185	849	198	18	44	6	43	3	1	1	-	2	1
Wayne	33,476	19,005	12,121	265	320	250	1251	55	5	106	-	4	4
Wexford	196	2	189	-	2	-	-	-	-	-	-	3	2
County Not Stated	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16
 Number of Deaths by Cause
 Michigan Residents, 1989

ICD List Number	Cause of Death	Number
I. INFECTIOUS AND PARASITIC DISEASES (001-139)		
7	Other protozoal intestinal diseases	1
8	Intestinal infections due to other organisms	2
9	Ill-defined intestinal infections	4
11	Pulmonary tuberculosis	31
12	Other respiratory tuberculosis	1
13	Tuberculosis of meninges and central nervous system	4
15	Tuberculosis of bones and joints	1
17	Tuberculosis of other organs	3
18	Miliary tuberculosis	4
27	Other zoonotic bacterial diseases	2
31	Diseases due to other mycobacteria	3
36	Meningococcal infection	7
38	Septicaemia	519
39	Actinomycotic infections	3
40	Other bacterial diseases	5
41	Bacterial infection in conditions classified elsewhere and of unspecified site	12
42	Human Immunodeficiency Virus Infection With Specified Conditions	318
43	Human Immunodeficiency Virus Infection Causing Other Specified Conditions	6
44	Other Human Immunodeficiency Virus Infection	5
46	Slow virus infection of central nervous system	7
47	Meningitis due to enterovirus	1
48	Other enterovirus diseases of central nervous system	4
49	Other non-arthropod-borne viral diseases of central nervous system	8
52	Chickenpox	3
53	Herpes zoster	3
54	Herpes simplex	5
70	Viral hepatitis	27
73	Ornithosis	1
74	Specific diseases due to Coxsackie virus	1
75	Infectious mononucleosis	1
78	Other diseases due to viruses and Chlamydiae	12
79	Viral infection in conditions classified elsewhere and of unspecified site	10
87	Relapsing fever	1
90	Congenital syphilis	1
93	Cardiovascular syphilis	2
94	Neurosyphilis	2
112	Candidiasis	48
114	Coccidioidomycosis	1
115	Histoplasmosis	2
117	Other mycoses	33
130	Toxoplasmosis	1
135	Sarcoidosis	22
136	Other and unspecified infectious and parasitic diseases	30
137	Late effects of tuberculosis	4
138	Late effects of acute poliomyelitis	7
II. NEOPLASMS (140-239)		
140	Malignant neoplasm of lip	3
141	Malignant neoplasm of tongue	66

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
142	Malignant neoplasm of major salivary glands	13
143	Malignant neoplasm of gum	6
144	Malignant neoplasm of floor of mouth	15
145	Malignant neoplasm of other and unspecified parts of mouth	45
146	Malignant neoplasm of oropharynx	40
147	Malignant neoplasm of nasopharynx	19
148	Malignant neoplasm of hypopharynx	19
149	Malignant neoplasm of other and ill-defined sites within the lip, oral cavity and pharynx	40
150	Malignant neoplasm of oesophagus	369
151	Malignant neoplasm of stomach	491
152	Malignant neoplasm of small intestine, including duodenum	38
153	Malignant neoplasm of colon	1,788
154	Malignant neoplasm of rectum, rectosigmoid junction and anus	291
155	Malignant neoplasm of liver and intrahepatic bile ducts	272
156	Malignant neoplasm of gallbladder and extrahepatic bile ducts	144
157	Malignant neoplasm of pancreas	904
158	Malignant neoplasm of retroperitoneum and peritoneum	15
159	Malignant neoplasm of other and ill-defined sites within the digestive organs and peritoneum	81
160	Malignant neoplasm of nasal cavities, middle ear and accessory sinuses	27
161	Malignant neoplasm of larynx	128
162	Malignant neoplasm of trachea, bronchus and lung	4,956
163	Malignant neoplasm of pleura	13
164	Malignant neoplasm of thymus, heart and mediastinum	12
165	Malignant neoplasm of other and ill-defined sites within the respiratory system and intrathoracic organs	1
170	Malignant neoplasm of bone and articular cartilage	42
171	Malignant neoplasm of connective and other soft tissue	118
172	Malignant melanoma of skin	183
173	Other malignant neoplasm of skin	53
174	Malignant neoplasm of female breast	1,641
175	Malignant neoplasm of male breast	10
179	Malignant neoplasm of uterus, part unspecified	103
180	Malignant neoplasm of cervix uteri	170
181	Malignant neoplasm of placenta	3
182	Malignant neoplasm of body of uterus	118
183	Malignant neoplasm of ovary and other uterine adnexa	489
184	Malignant neoplasm of other and unspecified female genital organs	40
185	Malignant neoplasm of prostate	1,127
186	Malignant neoplasm of testis	15
187	Malignant neoplasm of penis and other male genital organs	7
188	Malignant neoplasm of bladder	369
189	Malignant neoplasm of kidney and other and unspecified urinary organs	356
190	Malignant neoplasm of eye	12
191	Malignant neoplasm of brain	440
192	Malignant neoplasm of other and unspecified parts of nervous system	17
193	Malignant neoplasm of thyroid gland	29
194	Malignant neoplasm of other endocrine glands and related structures	27
195	Malignant neoplasm of other and ill-defined sites	143
199	Malignant neoplasm without specification of site	1,159
200	Lymphosarcoma and reticulosarcoma	66
201	Hodgkin's disease	68
202	Other malignant neoplasm of lymphoid and histiocytic tissue	594

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
203	Multiple myeloma and immunoproliferative neoplasms	319
204	Lymphoid leukemia	228
205	Myeloid leukemia	273
206	Monocytic leukemia	22
207	Other specified leukemia	14
208	Leukemia of unspecified cell type	213
211	Benign neoplasm of other parts of digestive system	5
212	Benign neoplasm of respiratory and intrathoracic organs	7
214	Lipoma	1
215	Other benign neoplasm of connective and other soft tissue	2
216	Benign neoplasm of skin	2
220	Benign neoplasm of ovary	1
225	Benign neoplasm of brain and other parts of nervous system	37
227	Benign neoplasm of other endocrine glands and related structures	5
228	Haemangioma and lymphangioma, any site	2
229	Benign neoplasm of other and unspecified sites	1
233	Carcinoma in situ of breast and genitourinary system	1
235	Neoplasm of uncertain behavior of digestive and respiratory systems	6
237	Neoplasm of uncertain behavior of endocrine glands and nervous system	4
238	Neoplasm of uncertain behavior of other and unspecified sites and tissues	48
239	Neoplasm of unspecified nature	50
III. ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES AND IMMUNITY DISORDERS (240-279)		
242	Thyrotoxicosis with or without goitre	1
244	Acquired hypothyroidism	32
245	Thyroiditis	1
250	Diabetes mellitus	2,052
251	Other disorders of pancreatic internal secretion	9
252	Disorders of parathyroid gland	3
253	Disorders of the pituitary gland and its hypothalamic control	10
254	Diseases of Thymus Gland	2
255	Disorders of adrenal glands	13
259	Other endocrine disorders	1
260	Kwashiorkor	4
261	Nutritional marasmus	14
263	Other and unspecified protein-calorie malnutrition	88
269	Other nutritional deficiencies	6
270	Disorders of amino-acid transport and metabolism	3
271	Disorders of carbohydrate transport and metabolism	1
272	Disorders of lipid metabolism	71
273	Disorders of plasma protein metabolism	16
274	Gout	1
275	Disorders of mineral metabolism	9
276	Disorders of fluid, electrolyte and acid-base balance	194
277	Other and unspecified disorders of metabolism	62
278	Obesity and other hyperalimentation	59
279	Disorders involving the immune mechanism	26
IV. DISEASES OF BLOOD AND BLOOD-FORMING ORGANS (280-289)		
280	Iron deficiency anemias	5
281	Other deficiency anemias	5
282	Hereditary hemolytic anemias	19

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
283	Acquired hemolytic anemias	7
284	Aplastic anemia	60
285	Other and unspecified anemias	44
286	Coagulation defects	40
287	Purpura and other hemorrhagic conditions	29
288	Diseases of white blood cells	11
289	Other diseases of blood and blood-forming organs	76
V. MENTAL DISORDERS (290-319)		
290	Senile and presenile organic psychotic conditions	184
291	Alcoholic psychoses	18
295	Schizophrenic psychoses	4
296	Affective psychosis	1
297	Paranoid States	1
298	Other nonorganic psychoses	92
300	Neurotic disorders	3
301	Personality disorders	1
303	Alcohol dependence syndrome	155
304	Drug dependence	18
305	Nondependent abuse of drugs	204
307	Special symptoms or syndromes not elsewhere classified	8
308	Acute reaction to stress	1
309	Brief Depressive Reaction	1
310	Specific nonpsychotic mental disorders following organic brain damage	177
311	Depressive disorder, not elsewhere classified	12
318	Other specified mental retardation	1
319	Unspecified mental retardation	8
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS (320-389)		
320	Bacterial meningitis	9
322	Meningitis of unspecified cause	17
323	Encephalitis, myelitis and encephalomyelitis	10
324	Intracranial and intraspinal abscess	8
325	Phlebitis and thrombophlebitis of intracranial venous sinuses	1
330	Cerebral degenerations usually manifest in childhood	7
331	Other cerebral degenerations	399
332	Parkinson's disease	206
333	Other extrapyramidal disease and abnormal movement disorders	16
334	Spinocerebellar disease	11
335	Anterior horn cell disease	132
336	Other diseases of spinal cord	6
340	Multiple sclerosis	97
341	Other demyelinating diseases of central nervous system	2
342	Hemiplegia	12
343	Infantile cerebral palsy	35
344	Other paralytic syndromes	32
345	Epilepsy	123
348	Other conditions of brain	120
349	Other and unspecified disorders of the nervous system	6
350	Other Trigeminal Neuralgia	1
352	Unspecified Disorders of Other Cranial Nerves	1
354	Other Mononeur of Upper Limbs and Mononeur Mult	2
355	Mononeuritis of lower limb	3

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
356	Hereditary and idiopathic peripheral neuropathy	14
357	Inflammatory and toxic neuropathy	4
358	Myoneural disorders	14
359	Muscular dystrophies and other myopathies	46
382	Suppurative and unspecified otitis media	3
383	Mastoiditis and related conditions	1
384	Other disorders of tympanic membrane	1
VII. DISEASES OF THE CIRCULATORY SYSTEM (390-459)		
390	Rheumatic fever without mention of heart involvement	2
391	Rheumatic fever with heart involvement	1
394	Diseases of mitral valve	112
395	Diseases of aortic valve	9
396	Diseases of mitral and aortic valves	39
397	Diseases of other endocardial structures	13
398	Other rheumatic heart disease	45
401	Essential hypertension	115
402	Hypertensive heart disease	654
403	Hypertensive renal disease	150
404	Hypertensive heart and renal disease	95
410	Acute myocardial infarction	10,486
411	Other acute and subacute form of ischemic heart disease	52
412	Old myocardial infarction	22
413	Angina pectoris	36
414	Other forms of chronic ischemic heart disease	9,448
415	Acute pulmonary heart disease	268
416	Chronic pulmonary heart disease	86
417	Other diseases of pulmonary circulation	2
420	Acute pericarditis	3
421	Acute and subacute endocarditis	42
422	Acute myocarditis	9
423	Other diseases of pericardium	15
424	Other diseases of endocardium	386
425	Cardiomyopathy	834
426	Conduction disorders	28
427	Cardiac dysrhythmias	706
428	Heart failure	1,187
429	Ill-defined descriptions and complications of heart disease	3,451
430	Subarachnoid hemorrhage	279
431	Intracerebral hemorrhage	633
432	Other and unspecified intracranial hemorrhage	126
433	Occlusion and stenosis of precerebral arteries	54
434	Occlusion of cerebral arteries	977
435	Transient cerebral ischemia	8
436	Acute but ill-defined cerebrovascular disease	2,387
437	Other and ill-defined cerebrovascular disease	365
438	Late effects of cerebrovascular disease	344
440	Atherosclerosis	832
441	Aortic aneurysm	626
442	Other aneurysm	34
443	Other peripheral vascular disease	125
444	Arterial embolism and thrombosis	49
446	Polyarteritis nodosa and allied conditions	25

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
447	Other disorders of arteries and arterioles	54
448	Diseases of capillaries	2
451	Phlebitis and thrombophlebitis	72
452	Portal vein thrombosis	2
453	Other venous embolism and thrombosis	18
454	Varicose veins of lower extremities	9
455	Hemorrhoids	1
456	Varicose veins of other sites	17
457	Noninfective disorders of lymphatic channels	1
458	Hypotension	33
459	Other disorders of circulatory system	14
VIII. DISEASES OF THE RESPIRATORY SYSTEM (460-519)		
461	Acute sinusitis	2
462	Acute pharyngitis	1
464	Acute laryngitis and tracheitis	3
465	Acute upper respiratory infections of multiple or unspecified sites	6
466	Acute bronchitis and bronchiolitis	10
473	Chronic sinusitis	3
474	Chronic Disease of tonsils and adenoids	1
478	Other diseases of upper respiratory tract	7
480	Viral pneumonia	19
481	Pneumococcal pneumonia	72
482	Other bacterial pneumonia	96
483	Pneumonia due to other specified organism	11
485	Bronchopneumonia, organism unspecified	152
486	Pneumonia, organism unspecified	2,224
487	Influenza	59
490	Bronchitis, not specified as acute or chronic	22
491	Chronic bronchitis	123
492	Emphysema	676
493	Asthma	172
494	Bronchiectasis	26
496	Chronic airways obstruction, not elsewhere classified	1,833
500	Coalworkers' pneumoconiosis	5
501	Asbestosis	4
502	Pneumoconiosis due to other silica or silicates	6
505	Pneumoconiosis, unspecified	3
506	Respiratory conditions due to chemical fumes and vapours	1
507	Pneumonitis due to solids and liquids	231
508	Respiratory conditions due to other and unspecified external agents	2
510	Empyema	17
511	Pleurisy	33
512	Pneumothorax	13
513	Abscess of lung and mediastinum	19
514	Pulmonary congestion and hypostasis	15
515	Postinflammatory pulmonary fibrosis	191
516	Other alveolar and parietoalveolar pneumopathy	51
518	Other diseases of lung	172
519	Other diseases of respiratory system	37
IX. DISEASES OF THE DIGESTIVE SYSTEM (520-579)		
522	Diseases of pulp and periapical tissues	1

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
527	Diseases of the salivary glands	4
528	Diseases of the oral soft tissues, excluding lesions specific for gingiva and tongue	1
529	Diseases and other conditions of the tongue	1
530	Diseases of oesophagus	65
531	Gastric ulcer	81
532	Duodenal ulcer	94
533	Peptic ulcer, site unspecified	108
534	Gastrojejunal ulcer	5
535	Gastritis and duodenitis	36
536	Disorders of function of stomach	6
537	Other disorders of stomach and duodenum	17
540	Acute appendicitis	8
550	Inguinal hernia	8
551	Other hernia of abdominal cavity, with gangrene	2
552	Other hernia of abdominal cavity with obstruction, without mention of gangrene	13
553	Other hernia of abdominal cavity without mention of obstruction or gangrene	11
555	Regional enteritis	10
556	Idiopathic proctocolitis	13
557	Vascular insufficiency of intestine	256
558	Other noninfective gastroenteritis and colitis	42
560	Intestinal obstruction without mention of hernia	167
562	Diverticula of intestine	128
564	Functional digestive disorders, not elsewhere classified	8
566	Abscess of anal and rectal regions	7
567	Peritonitis	55
568	Other disorders of peritoneum	8
569	Other disorders of intestine	65
570	Acute and subacute necrosis of liver	12
571	Chronic liver disease and cirrhosis	1,170
572	Liver abscess and sequelae of chronic liver disease	97
573	Other disorders of liver	49
574	Cholelithiasis	47
575	Other disorders of gallbladder	62
576	Other disorders of biliary tract	31
577	Diseases of pancreas	113
578	Gastrointestinal hemorrhage	190
579	Intestinal malabsorption	3
X. DISEASES OF THE GENITOURINARY SYSTEM (580-629)		
580	Acute glomerulonephritis	1
581	Nephrotic syndrome	4
582	Chronic glomerulonephritis	31
583	Nephritis and nephropathy, not specified as acute or chronic	17
584	Acute renal failure	139
585	Chronic renal failure	195
586	Renal failure, unspecified	397
587	Renal sclerosis, unspecified	5
590	Infections of kidney	36
591	Hydronephrosis	2
592	Calculus of kidney and ureter	8
593	Other disorders of kidney and ureter	73
595	Cystitis	6

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
596	Other disorders of bladder	2
599	Other disorders of urethra and urinary tract	441
600	Hyperplasia of prostate	14
602	Other disorders of prostate	3
608	Other disorders of male genital organs	5
614	Inflammatory disease of ovary, fallopian tube, pelvic cellular tissue and peritoneum	1
619	Fistulae involving female genital tract	4
620	Noninflammatory disorders of ovary, fallopian tube and broad ligament	1
623	Noninflammatory disorders of vagina	1
XI. COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM (630-676)		
633	Ectopic pregnancy	1
641	Antepartum hemorrhage, abruptio placentae, and placenta praevia	3
642	Hypertension complicating pregnancy, childbirth and the puerperium	3
648	Other current conditions in the mother classifiable elsewhere but complicating pregnancy, childbirth and the puerperium	1
669	Other complications of labor and delivery, not elsewhere classified	3
671	Venous complications in pregnancy and the puerperium	1
673	Obstetrical pulmonary embolism	1
XII. DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE (680-709)		
682	Other cellulitis and abscess	38
686	Other local infections of skin and subcutaneous tissue	2
693	Dermatitis due to substances taken internally	2
694	Bullous dermatoses	2
695	Erythematous conditions	9
696	Psoriasis and similar disorders	3
707	Chronic ulcer of skin	111
XIII. DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE (710-739)		
710	Diffuse diseases of connective tissue	84
711	Arthropathy associated with infections	5
714	Rheumatoid arthritis and other inflammatory polyarthropathies	68
715	Osteoarthritis and allied disorders	23
716	Other and unspecified arthropathies	4
718	Other derangement of joint	2
720	Ankylosing spondylitis and other inflammatory spondylopathies	2
721	Spondylosis and allied disorders	5
724	Other and unspecified disorders of back	1
725	Polymyalgia rheumatica	2
726	Peripheral enthesopathies and allied syndromes	1
728	Disorders of muscle, ligament and fascia	8
729	Other disorders of soft tissues	10
730	Osteomyelitis, periostitis and other infections involving bone	27
731	Osteitis deformans and osteopathies associated with other disorders classified elsewhere	1
732	Osteochondropathies	1
733	Other disorders of bone and cartilage	21
737	Curvature of spine	11

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
XIV. CONGENITAL ANOMALIES (740-759)		
740	Anencephalus and similar anomalies	15
741	Spina bifida	7
742	Other congenital anomalies of nervous system	48
744	Congenital anomalies of ear, face and neck	1
745	Bulbus cordis anomalies and anomalies of cardiac septal closure	45
746	Other congenital anomalies of heart	118
747	Other congenital anomalies of circulatory system	37
748	Congenital anomalies of respiratory system	33
750	Other congenital anomalies of upper alimentary tract	1
751	Other congenital anomalies of digestive system	5
752	Congenital anomalies of genital organs	1
753	Congenital anomalies of urinary system	40
755	Other congenital anomalies of limbs	2
756	Other congenital musculoskeletal anomalies	26
757	Congenital anomalies of the integument	1
758	Chromosomal anomalies	52
759	Other and unspecified congenital anomalies	43
XV. CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD (760-779)		
760	Fetus or newborn affected by maternal conditions which may be unrelated to present pregnancy	7
761	Fetus or newborn affected by maternal complications of pregnancy	88
762	Fetus or newborn affected by complications of placenta, cord and membranes	25
763	Fetus or newborn affected by other complications of labor and delivery	5
764	Slow fetal growth and fetal malnutrition	1
765	Disorders relating to short gestation and unspecified low birthweight	237
767	Birth trauma	11
768	Intrauterine hypoxia and birth asphyxia	31
769	Respiratory distress syndrome	208
770	Other respiratory conditions of fetus and newborn	163
771	Infections specific to the perinatal period	28
772	Fetal and neonatal hemorrhage	8
773	Hemolytic disease of fetus or newborn, due to isoimmunization	1
775	Endocrine and metabolic disturbances specific to the fetus and newborn	1
776	Hematological disorders of fetus and newborn	6
777	Perinatal disorders of digestive system	9
778	Conditions involving the integument and temperature regulation of fetus and newborn	5
779	Other and ill-defined conditions originating in the perinatal period	66
XVI. SYMPTOMS, SIGNS AND ILL-DEFINED CONDITIONS (780-799)		
780	General symptoms	12
782	Symptoms involving skin and other integumentary tissue	1
783	Symptoms concerning nutrition, metabolism and development	1
785	Symptoms involving cardiovascular system	16
786	Symptoms involving respiratory system and other chest symptoms	7
789	Other symptoms involving abdomen and pelvis	4
797	Senility without mention of psychosis	13
798	Sudden death, cause unknown	271

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause Of Death	Number
799	Other ill-defined and unknown causes of morbidity and mortality	82
XVII. EXTERNAL CAUSES OF INJURY AND POISONING (E800-E999)		
E801	Fracture of base of skull	1
E805	Hit by rolling stock	5
E810	Motor vehicle traffic accident involving collision with train	34
E812	Other motor vehicle traffic accident involving collision with another motor vehicle	831
E813	Motor vehicle traffic accident involving collision with other vehicle	31
E814	Motor vehicle traffic accident involving collision with pedestrian	213
E815	Other motor vehicle traffic accident involving collision on the highway	171
E816	Motor vehicle traffic accident due to loss of control, without collision on the highway	325
E818	Other noncollision motor vehicle traffic accident	18
E819	Motor vehicle traffic accident of unspecified nature	85
E820	Nontraffic accident involving motor-driven snow vehicle	7
E821	Nontraffic accident involving other off-road motor vehicle	8
E822	Other motor vehicle nontraffic accident involving collision with moving object	12
E823	Other motor vehicle nontraffic accident involving collision with stationary object	4
E825	Other motor vehicle nontraffic accident of other and unspecified nature	11
E826	Pedal cycle accident	1
E828	Accident involving animal being ridden	1
E830	Accident to watercraft causing submersion	7
E831	Accident to watercraft causing other injury	4
E832	Other accidental submersion or drowning in water transport accident	12
E840	Sprains and strains of shoulder and upper arm	3
E841	Accident to powered aircraft, other and unspecified	34
E848	Accidents involving other vehicles not elsewhere classifiable	1
E850	Accidental poisoning by analgesics, antipyretics, antirheumatics	21
E852	Subarachnoid, subdural and extradural haemorrhage following injury	1
E853	Accidental poisoning by tranquillizers	5
E854	Accidental poisoning by other psychotropic agents	3
E855	Accidental poisoning by other drugs acting on central and autonomic nervous systems	15
E856	Accidental poisoning by antibiotics	1
E858	Accidental poisoning by other drugs	49
E860	Accidental poisoning by alcohol, not elsewhere classified	7
E862	Accidental poisoning by petroleum products, other solvents and their vapours not elsewhere classified	2
E864	Accidental poisoning by corrosives and caustics, not elsewhere classified	1
E866	Accidental poisoning by other and unspecified solid and liquid substances	6
E868	Accidental poisoning by other utility gas and other carbon monoxide	42
E869	Accidental poisoning by other gases and vapors	6
E870	Accidental cut, puncture, perforation or hemorrhage during medical care	8
E876	Other and unspecified misadventures during medical care	6
E878	Surgical operation and other surgical procedures as the cause of abnormal reaction of patient, or of later complication, without mention of misadventure at the time of operation	47
E879	Other procedures, without mention of misadventure at the time of procedure, as the cause of abnormal reaction of patient, or of later complication	27
E880	Fall on or from stairs or steps	50

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
E881	Fall on or from ladders or scaffolding	10
E882	Fall from or out of building or other structure	16
E883	Fall into hole or other opening in surface	2
E884	Other fall from one level to another	21
E885	Fall on same level from slipping, tripping or stumbling	17
E887	Fracture, cause unspecified	149
E888	Other and unspecified fall	183
E890	Conflagration in private dwelling	170
E891	Conflagration in other and unspecified building or structure	4
E892	Conflagration not in building or structure	1
E893	Accident caused by ignition of clothing	2
E894	Ignition of highly inflammable material	3
E898	Accident caused by other specified fire and flames	4
E899	Accident caused by unspecified fire	9
E900	Excessive heat	1
E901	Excessive cold	32
E904	Hunger, thirst, exposure, neglect	6
E905	Venomous animals and plants as the cause of poisoning and toxic reactions	3
E906	Other injury caused by animals	3
E907	Lightning	4
E909	Cataclysmic earth surface movements and eruptions	1
E910	Accidental drowning and submersion	112
E911	Inhalation and ingestion of food causing obstruction of respiratory tract or suffocation	45
E912	Inhalation and ingestion of other object causing obstruction of respiratory tract or suffocation	48
E913	Accidental mechanical suffocation	38
E915	Foreign body accidentally entering other orifice	1
E916	Struck accidentally by falling object	11
E917	Striking against or struck accidentally by objects or persons	6
E918	Caught accidentally in or between objects	4
E919	Accidents caused by machinery	39
E920	Accidents caused by cutting and piercing instruments or objects	1
E921	Accident caused by explosion of pressure vessel	1
E922	Accident caused by firearm missile	26
E923	Accident caused by explosive material	7
E924	Accident caused by hot substance or object, caustic or corrosive material and steam	4
E925	Accident caused by electric current	21
E928	Other and unspecified environmental and accidental causes	76
E929	Late effects of accidental injury	29
E942	Agents primarily affecting cardiovascular system	1
E947	Other and unspecified drugs and medicaments	1
E950	Suicide and selfinflicted poisoning by solid or liquid substances	106
E951	Suicide and selfinflicted poisoning by gases in domestic use	1
E952	Suicide and selfinflicted poisoning by other gases and vapors	92
E953	Suicide and selfinflicted injury by hanging, strangulation and suffocation	188
E954	Suicide and selfinflicted injury by submersion (drowning)	13
E955	Suicide and selfinflicted injury by firearms and explosives	592
E956	Suicide and selfinflicted injury by cutting and piercing instruments	14
E957	Suicide and selfinflicted injuries by jumping from high place	19
E958	Suicide and selfinflicted injury by other and unspecified means	18
E960	Fight, brawl, rape	2

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.16 Number of Deaths by Cause Michigan Residents, 1989 (continued)

ICD List Number	Cause of Death	Number
E963	Assault by hanging and strangulation	29
E964	Assault by submersion [drowning]	10
E965	Assault by firearms and explosives	693
E966	Assault by cutting and piercing instrument	170
E967	Child battering and other maltreatment	11
E968	Assault by other and unspecified means	144
E969	Late effects of injury purposely inflicted by other person	1
E970	Injury due to legal intervention by firearms	4
E980	Poisoning by solid or liquid substances, undetermined whether accidentally or purposely inflicted	54
E981	Poisoning by gases in domestic use, undetermined whether accidentally or purposely inflicted	1
E982	Poisoning by other gases, undetermined whether accidentally or purposely inflicted	5
E983	Hanging, strangulation or suffocation, undetermined whether accidentally or purposely inflicted	3
E984	Submersion [drowning], undetermined whether accidentally or purposely inflicted	7
E985	Injury by firearms and explosives, undetermined whether accidentally or purposely inflicted	6
E986	Injury by cutting and piercing instruments, undetermined whether accidentally or purposely inflicted	1
E987	Falling from high place, undetermined whether accidentally or purposely inflicted	3
E988	Injury by other and unspecified means, undetermined whether accidentally or purposely inflicted	23
E989	Late effects of injury, undetermined whether accidentally or purposely inflicted	3

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.17
Population Changes by County
Michigan, 1979 and 1989

Area	Population Estimate July 1, 1979	Population Estimate July 1, 1989	Net Change	Percent Change	Natural Increase	Estimated Net Migration
Michigan	9,248,893	9,273,431	24,538	0.3	619,141	-594,603
Alcona	9,553	10,675	1,122	11.7	-240	1,362
Alger	9,398	8,754	-644	-6.9	162	-806
Allegan	80,896	91,236	10,340	12.8	7,313	3,027
Alpena	32,311	31,717	-594	-1.8	1,477	-2,071
Antrim	16,427	17,804	1,377	8.4	508	869
Arenac	14,491	15,935	1,444	10.0	562	882
Baraga	8,666	8,221	-445	-5.1	108	-553
Bary	45,368	50,654	5,286	11.7	3,243	2,043
Bay	121,078	115,941	-5,137	-4.2	7,396	-12,533
Benzie	11,161	11,552	391	3.5	384	7
Berrien	173,628	167,167	-6,461	-3.7	10,539	-17,000
Branch	41,037	41,099	62	0.2	2,633	-2,571
Calhoun	142,340	139,802	-2,538	-1.8	7,553	-10,091
Cass	49,518	49,675	157	0.3	2,391	-2,234
Charlevoix	19,722	21,527	1,805	9.2	1,253	552
Cheboygan	20,311	21,703	1,392	6.9	876	516
Chippewa	30,223	31,978	1,755	5.8	1,035	720
Clare	23,316	26,521	3,205	13.7	718	2,487
Clinton	56,234	58,885	2,651	4.7	5,113	-2,462
Crawford	9,400	11,035	1,635	17.4	709	926
Delta	39,157	38,960	-197	-0.5	1,864	-2,061
Dickinson	25,713	26,682	969	3.8	607	362
Eaton	87,969	95,898	7,929	9.0	6,577	1,352
Emmet	22,938	25,028	2,090	9.1	1,335	755
Genesee	451,078	429,676	-21,402	-4.7	35,710	-57,112
Gladwin	19,882	23,310	3,428	17.2	814	2,614
Gogebic	20,294	18,197	-2,097	-10.3	-642	-1,455
Grand Traverse	53,525	63,662	10,137	18.9	4,755	5,382
Gratiot	40,317	39,741	-576	-1.4	1,865	-2,441
Hillsdale	41,304	43,810	2,506	6.1	2,574	-68
Houghton	38,124	35,813	-2,311	-6.1	566	-2,877
Huron	36,749	36,793	44	0.1	1,503	-1,459
Ingham	269,456	275,926	6,470	2.4	27,463	-20,993
Ionia	51,532	57,297	5,765	11.2	4,762	1,003
Iosco	28,852	30,808	1,956	6.8	2,739	-783
Iron	14,017	13,541	-476	-3.4	-453	-23
Isabella	54,713	54,404	-309	-0.6	3,866	-4,175
Jackson	151,792	150,133	-1,659	-1.1	8,531	-10,190
Kalamazoo	210,293	218,660	8,367	4.0	17,129	-8,762
Kalkaska	10,719	12,518	1,799	16.8	1,078	721

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.17 (continued)
Population Changes by County
 Michigan, 1979 and 1989

Area	Population Estimate July 1, 1978	Population Estimate July 1, 1988	Net Change	Percent Change	Natural Increase	Estimated Net Migration
Kent	438,199	489,620	51,421	11.7	50,804	617
Keweenaw	1,977	1,951	-26	-1.3	-147	121
Lake	7,865	9,191	1,326	16.9	-73	1,399
Lapeer	69,018	75,158	6,140	8.9	5,929	211
Leelanau	14,272	15,856	1,584	11.1	820	764
Lenawee	90,593	92,154	1,561	1.7	5,848	-4,287
Livingston	96,680	115,270	18,590	19.2	8,271	10,319
Luce	6,887	5,840	-1,047	-15.2	117	-1,164
Mackinac	10,272	10,512	240	2.3	230	10
Macomb	689,661	708,905	19,244	2.8	42,787	-23,543
Manistee	23,043	22,377	-666	-2.9	104	-770
Marquette	75,582	70,807	-4,775	-6.3	6,829	-11,604
Mason	25,635	26,556	921	3.6	947	-26
Mecosta	36,422	38,725	2,303	6.3	1,962	341
Menominee	26,581	25,938	-643	-2.4	581	-1,224
Midland	73,158	75,943	2,785	3.8	6,550	-3,765
Missaukee	9,881	11,835	1,954	19.8	859	1,095
Monroe	134,289	137,606	3,317	2.5	9,473	-6,156
Montcalm	47,108	53,682	6,574	14.0	3,489	3,085
Montmorency	7,607	8,754	1,147	15.1	-103	1,250
Muskegon	158,061	162,576	4,515	2.9	11,766	-7,251
Newaygo	34,652	39,900	5,248	15.1	2,558	2,690
Oakland	1,009,314	1,057,402	48,088	4.8	68,890	-20,802
Oceana	22,166	23,593	1,427	6.4	1,644	-217
Ogemaw	16,223	18,897	2,674	16.5	541	2,133
Ontonagon	10,294	9,069	-1,225	-11.9	-54	-1,171
Osceola	18,684	21,282	2,598	13.9	1,238	1,360
Oscoda	6,638	7,452	814	12.3	146	668
Otsego	14,648	17,223	2,575	17.6	1,139	1,436
Ottawa	154,437	183,637	29,200	18.9	18,183	11,017
Presque Isle	14,439	14,244	-195	-1.4	299	-494
Roscommon	16,306	20,925	4,619	28.3	-251	4,870
Saginaw	226,735	214,166	-12,569	-5.5	17,371	-29,940
St. Clair	138,970	146,740	7,770	5.6	8,125	-355
St. Joseph	55,392	60,629	5,237	9.5	4,117	1,120
Sanilac	40,486	41,647	1,161	2.9	1,819	-658
Schoolcraft	8,695	8,396	-299	-3.4	119	-418
Shiawassee	71,388	70,868	-520	-0.7	5,408	-5,928
Tuscola	56,280	56,696	416	0.7	3,775	-3,359
Van Buren	66,002	70,067	4,065	6.2	4,374	-309
Washtenaw	262,860	272,187	9,327	3.5	24,438	-15,111
Wayne	2,353,158	2,108,933	-244,225	-10.4	120,369	-364,594
Wexford	24,833	27,482	2,649	10.7	1,570	1,079

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.18
Population by Age, Race and Sex
Michigan Residents, 1989

Age in Years	All Races			White			Black			All Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1	141,898	72,514	69,384	112,392	57,498	54,894	25,741	13,029	12,712	3,765	1,987	1,778
1-4	549,868	280,609	269,259	449,040	229,705	219,335	89,665	45,183	44,482	11,163	5,721	5,442
5-9	674,504	345,290	329,214	554,525	284,659	269,866	107,938	54,543	53,395	12,041	6,088	5,953
10-14	685,289	351,070	334,219	561,786	288,833	272,953	112,228	56,535	55,693	11,275	5,702	5,573
15-19	715,918	365,309	350,609	590,422	302,533	287,889	115,114	57,504	57,610	10,382	5,272	5,110
20-24	748,790	376,590	372,200	626,535	316,863	309,672	112,702	54,900	57,802	9,553	4,827	4,726
25-29	777,124	385,795	391,329	658,731	330,229	328,502	108,537	50,724	57,813	9,856	4,842	5,014
30-34	769,328	379,776	389,552	656,578	328,425	328,153	101,608	46,072	55,536	11,142	5,279	5,863
35-39	712,405	350,094	362,311	612,251	305,138	307,113	88,789	39,603	49,186	11,365	5,353	6,012
40-44	618,085	302,559	315,526	536,324	265,817	270,507	72,066	32,036	40,030	9,695	4,706	4,989
45-49	516,743	251,847	264,896	452,471	222,878	229,593	57,090	25,391	31,699	7,182	3,578	3,604
50-54	447,492	216,766	230,726	393,966	192,824	201,142	48,466	21,431	27,035	5,060	2,511	2,549
55-59	419,675	201,577	218,098	371,141	179,838	191,303	44,851	19,965	24,886	3,683	1,774	1,909
60-64	395,835	186,521	209,314	352,064	166,812	185,252	41,014	18,431	22,583	2,757	1,278	1,479
65-69	351,599	159,799	191,800	314,600	143,454	171,146	34,875	15,398	19,477	2,124	947	1,177
70-74	284,530	122,326	162,204	255,824	110,208	145,616	27,099	11,419	15,680	1,607	699	908
75-79	207,499	82,700	124,799	187,516	74,674	112,842	18,838	7,544	11,294	1,145	482	663
80-84	132,794	47,810	84,984	120,683	43,198	77,485	11,379	4,323	7,056	732	289	443
85+	124,055	37,891	86,164	113,060	34,201	78,859	10,338	3,521	6,817	657	169	488
Total	9,273,431	4,516,843	4,756,588	7,919,909	3,877,787	4,042,122	1,228,338	577,552	650,786	125,184	61,504	63,680

Source: The estimate of the total state population was provided by the Department of Management and Budget, Office of Revenue and Tax Analysis. The breakdown of the total population by age, race and sex was prepared by the Department of Public Health, Office of the State Registrar and Center for Health Statistics. See Technical Notes.

Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.19
Abridged Life Table
Michigan Residents, 1989

Age	$nqx(1)^1$	$lx(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$Tx(5)^1$	$ex(6)^1$
0-1	0.01159	100,000	1,159	98,983	7,470,023	74.7
1-5	0.00177	98,841	175	394,949	7,371,040	74.6
5-10	0.00112	98,666	110	493,027	6,976,091	70.7
10-15	0.00139	98,556	137	492,508	6,483,064	65.8
15-20	0.00458	98,419	450	491,041	5,990,556	60.9
20-25	0.00482	97,969	472	488,699	5,499,515	56.1
25-30	0.00625	97,497	609	486,017	5,010,816	51.4
30-35	0.00744	96,889	720	482,710	4,524,799	46.7
35-40	0.00969	96,168	931	478,621	4,042,089	42.0
40-45	0.01293	95,237	1,231	473,278	3,563,468	37.4
45-50	0.01860	94,006	1,748	465,942	3,090,190	32.9
50-55	0.02809	92,257	2,591	455,283	2,624,249	28.4
55-60	0.04492	89,666	4,027	439,063	2,168,966	24.2
60-65	0.07518	85,639	6,438	413,123	1,729,902	20.2
65-70	0.11281	79,201	8,935	374,711	1,316,780	16.6
70-75	0.16278	70,267	11,438	323,669	942,068	13.4
75-80	0.22773	58,829	13,397	261,394	618,400	10.5
80-85	0.33007	45,432	14,995	189,603	357,005	7.9
85+	1.00000	30,437	30,437	167,403	167,403	5.5

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.20
Abridged Life Table for Males
Michigan Residents, 1989

Age	$nx(1)^1$	$lx(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$Tx(5)^1$	$ex(6)^1$
0-1	0.01238	100,000	1,238	98,918	7,160,335	71.6
1-5	0.00179	98,762	176	394,640	7,061,416	71.5
5-10	0.00124	98,586	121	492,595	6,666,776	67.6
10-15	0.00157	98,464	154	492,046	6,174,181	62.7
15-20	0.00654	98,310	643	490,060	5,682,135	57.8
20-25	0.00723	97,668	706	486,622	5,192,075	53.2
25-30	0.00896	96,962	868	482,707	4,705,454	48.5
30-35	0.01073	96,094	1,031	477,972	4,222,746	43.9
35-40	0.01320	95,063	1,255	472,289	3,744,774	39.4
40-45	0.01670	93,808	1,566	465,323	3,272,484	34.9
45-50	0.02378	92,243	2,193	456,062	2,807,162	30.4
50-55	0.03511	90,049	3,161	442,904	2,351,099	26.1
55-60	0.05614	86,888	4,878	423,234	1,908,195	22.0
60-65	0.09622	82,011	7,891	391,533	1,484,962	18.1
65-70	0.14394	74,120	10,668	345,003	1,093,429	14.8
70-75	0.20559	63,452	13,045	285,443	748,426	11.8
75-80	0.28752	50,407	14,493	216,063	462,983	9.2
80-85	0.39802	35,914	14,294	143,146	246,920	6.9
85+	1.00000	21,620	21,620	103,775	103,775	4.8

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.21
Abridged Life Table for Females
Michigan Residents, 1989

Age	$nx(1)^1$	$lx(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$Tx(5)^1$	$ex(6)^1$
0-1	0.01077	100,000	1,077	99,051	7,774,148	77.7
1-5	0.00176	98,923	173	395,272	7,675,096	77.6
5-10	0.00101	98,750	99	493,478	7,279,824	73.7
10-15	0.00120	98,651	118	492,992	6,786,345	68.8
15-20	0.00253	98,533	248	492,069	6,293,353	63.9
20-25	0.00238	98,285	233	490,861	5,801,285	59.0
25-30	0.00356	98,051	349	489,421	5,310,424	54.2
30-35	0.00422	97,702	412	487,537	4,821,003	49.3
35-40	0.00628	97,291	610	485,028	4,333,466	44.5
40-45	0.00931	96,680	900	481,295	3,848,438	39.8
45-50	0.01366	95,780	1,308	475,865	3,367,143	35.2
50-55	0.02146	94,472	2,027	467,684	2,891,277	30.6
55-60	0.03444	92,445	3,183	454,888	2,423,594	26.2
60-65	0.05605	89,262	5,003	434,652	1,968,706	22.1
65-70	0.08610	84,259	7,254	404,191	1,534,054	18.2
70-75	0.12912	77,006	9,943	361,254	1,129,863	14.7
75-80	0.18564	67,063	12,450	305,407	768,609	11.5
80-85	0.28890	54,613	15,777	234,069	463,202	8.5
85+	1.00000	38,836	38,836	229,133	229,133	5.9

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.22
Abridged Life Table for Whites
Michigan Residents, 1989

Age	$q_x(1)^1$	$l_x(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$T_x(5)^1$	$ex(6)^1$
0-1	0.00845	100,000	845	99,264	7,594,889	75.9
1-5	0.00159	99,155	157	396,239	7,495,624	75.6
5-10	0.00092	98,998	91	494,738	7,099,386	71.7
10-15	0.00132	98,907	130	494,266	6,604,648	66.8
15-20	0.00374	98,776	369	493,009	6,110,382	61.9
20-25	0.00374	98,407	368	491,145	5,617,373	57.1
25-30	0.00512	98,040	502	488,982	5,126,228	52.3
30-35	0.00565	97,538	550	486,351	4,637,247	47.5
35-40	0.00704	96,987	682	483,311	4,150,896	42.8
40-45	0.00965	96,305	929	479,369	3,667,585	38.1
45-50	0.01541	95,377	1,469	473,498	3,188,216	33.4
50-55	0.02460	93,907	2,310	464,232	2,714,718	28.9
55-60	0.04062	91,598	3,721	449,471	2,250,487	24.6
60-65	0.06913	87,877	6,074	425,236	1,801,016	20.5
65-70	0.10632	81,803	8,697	388,393	1,375,779	16.8
70-75	0.15671	73,106	11,456	337,932	987,387	13.5
75-80	0.22212	61,650	13,693	274,906	649,455	10.5
80-85	0.32786	47,957	15,723	200,486	374,549	7.8
85+	1.00000	32,234	32,234	174,063	174,063	5.4

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.23
Abridged Life Table for White Males
Michigan Residents, 1989

Age	$q_x(1)^1$	$l_x(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$T_x(5)^1$	$ex(6)^1$
0-1	0.00910	100,000	910	99,211	7,306,353	73.1
1-5	0.00157	99,090	155	395,998	7,207,143	72.7
5-10	0.00104	98,935	102	494,394	6,811,144	68.8
10-15	0.00148	98,833	145	493,885	6,316,750	63.9
15-20	0.00518	98,687	511	492,242	5,822,865	59.0
20-25	0.00553	98,176	542	489,568	5,330,623	54.3
25-30	0.00731	97,634	713	486,440	4,841,055	49.6
30-35	0.00816	96,921	791	482,670	4,354,615	44.9
35-40	0.00950	96,130	913	478,446	3,871,945	40.3
40-45	0.01211	95,218	1,152	473,400	3,393,499	35.6
45-50	0.01948	94,065	1,832	466,087	2,920,099	31.0
50-55	0.03021	92,233	2,786	454,773	2,454,012	26.6
55-60	0.05106	89,448	4,567	436,818	1,999,239	22.4
60-65	0.08909	84,881	7,562	406,743	1,562,421	18.4
65-70	0.13610	77,320	10,523	361,465	1,155,679	14.9
70-75	0.19768	66,796	13,204	301,945	794,213	11.9
75-80	0.28342	53,593	15,189	230,424	492,268	9.2
80-85	0.39783	38,404	15,278	153,152	261,845	6.8
85+	1.00000	23,126	23,126	108,692	108,692	4.7

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.24
Abridged Life Table for White Females
Michigan Residents, 1989

Age	$nqx(1)^1$	$lx(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$Tx(5)^1$	$ex(6)^1$
0-1	0.00778	100,000	778	99,322	7,879,501	78.8
1-5	0.00161	99,222	159	396,490	7,780,179	78.4
5-10	0.00080	99,063	79	495,098	7,383,689	74.5
10-15	0.00116	98,984	114	494,665	6,888,591	69.6
15-20	0.00223	98,870	220	493,816	6,393,927	64.7
20-25	0.00191	98,650	188	492,797	5,900,110	59.8
25-30	0.00292	98,463	287	491,619	5,407,314	54.9
30-35	0.00312	98,175	306	490,144	4,915,694	50.1
35-40	0.00459	97,869	448	488,307	4,425,550	45.2
40-45	0.00723	97,421	704	485,482	3,937,243	40.4
45-50	0.01144	96,717	1,106	481,056	3,451,761	35.7
50-55	0.01920	95,611	1,835	473,836	2,970,706	31.1
55-60	0.03072	93,776	2,880	462,257	2,496,870	26.6
60-65	0.05082	90,895	4,619	443,778	2,034,613	22.4
65-70	0.08063	86,276	6,956	415,087	1,590,835	18.4
70-75	0.12446	79,320	9,872	373,064	1,175,748	14.8
75-80	0.17900	69,449	12,431	317,504	802,684	11.6
80-85	0.28578	57,018	16,294	244,914	485,180	8.5
85+	1.00000	40,723	40,723	240,267	240,267	5.9

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.25
Abridged Life Table for Blacks
Michigan Residents, 1989

Age	$nqx(1)^1$	$lx(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$Tx(5)^1$	$ex(6)^1$
0-1	0.02611	100,000	2,611	97,678	6,687,599	66.9
1-5	0.00268	97,389	260	388,969	6,589,921	67.7
5-10	0.00199	97,129	193	485,112	6,200,953	63.8
10-15	0.00170	96,935	164	484,405	5,715,840	59.0
15-20	0.00883	96,771	854	481,907	5,231,435	54.1
20-25	0.01099	95,917	1,054	477,030	4,749,528	49.5
25-30	0.01296	94,863	1,229	471,398	4,272,498	45.0
30-35	0.01917	93,634	1,795	463,968	3,801,100	40.6
35-40	0.02823	91,839	2,592	453,032	3,337,132	36.3
40-45	0.03707	89,247	3,308	438,214	2,884,100	32.3
45-50	0.04406	85,939	3,786	420,504	2,445,886	28.5
50-55	0.05632	82,153	4,627	399,686	2,025,382	24.7
55-60	0.07911	77,526	6,133	373,170	1,625,696	21.0
60-65	0.12344	71,393	8,812	335,864	1,252,526	17.5
65-70	0.16911	62,581	10,583	286,968	916,662	14.6
70-75	0.21732	51,999	11,300	231,967	629,693	12.1
75-80	0.28645	40,699	11,658	174,144	397,726	9.8
80-85	0.35549	29,040	10,323	118,767	223,582	7.7
85+	1.00000	18,717	18,717	104,815	104,815	5.6

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.26
Abridged Life Table for Black Males
Michigan Residents, 1989

Age	$nqx(1)^1$	$lx(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$Tx(5)^1$	$ex(6)^1$
0-1	0.02763	100,000	2,763	97,562	6,233,593	62.3
1-5	0.00301	97,237	292	388,267	6,136,031	63.1
5-10	0.00202	96,945	195	484,187	5,747,764	59.3
10-15	0.00204	96,749	197	483,491	5,263,578	54.4
15-20	0.01374	96,553	1,327	479,751	4,780,086	49.5
20-25	0.01734	95,226	1,651	472,108	4,300,336	45.2
25-30	0.01954	93,575	1,828	463,517	3,828,228	40.9
30-35	0.02901	91,748	2,662	452,484	3,364,711	36.7
35-40	0.04207	89,086	3,747	436,469	2,912,227	32.7
40-45	0.05410	85,339	4,616	415,422	2,475,757	29.0
45-50	0.06243	80,722	5,039	391,291	2,060,335	25.5
50-55	0.07854	75,683	5,944	363,952	1,669,045	22.1
55-60	0.09948	69,739	6,937	332,147	1,305,093	18.7
60-65	0.15537	62,802	9,757	290,522	972,945	15.5
65-70	0.21276	53,045	11,285	237,393	682,423	12.9
70-75	0.27756	41,759	11,590	179,582	445,031	10.7
75-80	0.33602	30,169	10,137	124,754	265,449	8.8
80-85	0.39948	20,032	8,002	79,343	140,694	7.0
85+	1.00000	12,030	12,030	61,351	61,351	5.1

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Table 4.27
Abridged Life Table for Black Females
Michigan Residents, 1989

Age	$nqx(1)^1$	$lx(2)^1$	$ndx(3)^1$	$nLx(4)^1$	$Tx(5)^1$	$ex(6)^1$
0-1	0.02455	100,000	2,455	97,797	7,135,060	71.4
1-5	0.00234	97,545	228	389,688	7,037,263	72.1
5-10	0.00197	97,317	191	486,060	6,647,575	68.3
10-15	0.00135	97,126	131	485,342	6,161,515	63.4
15-20	0.00390	96,995	378	484,102	5,676,173	58.5
20-25	0.00493	96,617	475	481,961	5,192,071	53.7
25-30	0.00716	96,142	688	479,107	4,710,110	49.0
30-35	0.01094	95,454	1,043	474,850	4,231,003	44.3
35-40	0.01695	94,410	1,600	468,284	3,756,153	39.8
40-45	0.02323	92,811	2,156	458,880	3,287,869	35.4
45-50	0.02909	90,655	2,637	446,936	2,828,989	31.2
50-55	0.03834	88,018	3,374	432,207	2,382,053	27.1
55-60	0.06244	84,644	5,285	410,902	1,949,846	23.0
60-65	0.09655	79,359	7,662	378,529	1,538,944	19.4
65-70	0.13303	71,698	9,538	335,257	1,160,415	16.2
70-75	0.17052	62,160	10,599	285,016	825,158	13.3
75-80	0.25135	51,561	12,959	225,828	540,142	10.5
80-85	0.32704	38,601	12,624	161,048	314,314	8.1
85+	1.00000	25,977	25,977	153,266	153,266	5.9

¹ Definitions of life table values are contained in the Technical Notes.
Source: Office of the State Registrar and Center for Health Statistics, MDPH

Figure 4.2

FORM Alignment

PLEASE TYPEWRITE OR PRINT - EXCEPT SIGNATURES
ALL COPIES MUST BE LEGIBLE - USE ONLY BLACK INK

FORM Alignment



STATE OF MICHIGAN
DEPARTMENT OF PUBLIC HEALTH 49

CERTIFICATE OF
LIVE BIRTH

121 - STATE FILE NUMBER
0416925

LF _____ CF _____

1 CHILD - NAME (FIRST, MIDDLE, LAST)

2 CHILD SEX 3a PLURALITY - SINGLE, TWIN, TRIPLET, ETC (SPECIFY) 3b IF NOT SINGLE - BORN 1ST, 2ND, 3RD, ETC (SPECIFY) 4a DATE OF BIRTH (Month, Day, Year) 4b TIME OF BIRTH

5a HOSPITAL NAME - (IF NOT HOSPITAL GIVE STREET AND NUMBER) 5b CITY, VILLAGE, OR TOWNSHIP OF BIRTH 5c COUNTY OF BIRTH

6a I CERTIFY THAT THE ABOVE NAMED CHILD WAS BORN ALIVE AT THE PLACE AND TIME AND ON THE DATE STATED ABOVE

6b NAME AND TITLE OF ATTENDANT IF OTHER THAN CERTIFIER (If MOTHER, ADDRESS OF HOME (STREET NO., CITY OR VILLAGE, STATE ZIP))

7a REGISTRAR'S SIGNATURE 7b DATE RECEIVED BY LOCAL REGISTRAR (Month, Day, Year)

8a MOTHER'S NAME (FIRST, MIDDLE, LAST) 8b SOCIAL SECURITY NUMBER 8c STATE OF BIRTH - NAME, COUNTRY IF NOT USA 8d DATE OF BIRTH (Month, Day, Year)

8e MOTHER - SURNAME BEFORE FIRST MARRIED 8f RESIDENCE (Check one box and specify) 8g COUNTY 8h STATE
 INSIDE CITY OR VILLAGE OF _____
 TWP. OF _____

9a FATHER'S NAME (FIRST, MIDDLE, LAST) 9b SOCIAL SECURITY NUMBER 9c STATE OF BIRTH - NAME, COUNTRY IF NOT USA 9d DATE OF BIRTH (Month, Day, Year)

10a I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THIS CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF
SIGNATURE (PARENT OR OTHER INFORMANT)

10b THE PARENT(S) REQUEST THAT INFORMATION ON THIS BIRTH BE RELEASED TO THE SOCIAL SECURITY ADMINISTRATION FOR ISSUANCE OF A SOCIAL SECURITY NUMBER AND CARD
 YES NO

SAMPLE COPY

BY AUTHORITY
ACT 368, P.A.
1976
0213 (11-69)
MOPH

CONFIDENTIAL INFORMATION FOR PUBLIC HEALTH USE ONLY

11 ANCESTRY - Mexican, Puerto Rican, Cuban, Central or South American, Chinese, other Hispanic, Afro American, Arab, English, French, Finnish, etc. (Specify below)

12 RACE - American Indian, Black, White, etc. If Asian, give nationality, e.g., Chinese, Filipino, Asian Indian, etc. (Specify below)

13 EDUCATION (Specify any highest grade completed) Elementary/Secondary (0-12) College (14 or 5, 1, 1)

14 EXPECTED SOURCE OF PAYMENT FOR MEDICAL SERVICES (Private Insurance, Medicaid, etc.)

15 MOTHER'S MAILING ADDRESS (STREET NUMBER, CITY OR VILLAGE, STATE, ZIP)

16a MEDICAL RECORD NUMBER OF MOTHER 16b MEDICAL RECORD NUMBER OF CHILD 17 DATE LAST NORMAL MENSTRUATION BEGAN (Month, Day, Year) 18 MONTH OF PREGNANCY PRENATAL CARE BEGAN 19 TOTAL PRENATAL VISITS

20 LIVE BIRTHS (Do not include the Child) 20a OTHER TERMINATIONS (Spontaneous and induced of any kind after conception) 21a MOTHER TRANSFERRED PRIOR TO DELIVERY (If you enter name of facility, specify) 22 ATTENDANT AT BIRTH
 20b NEW BIRTHS 20c NEW DEATHS
 Number _____ Name _____
 Number _____ Name _____
 Number _____ Name _____

21b INFANT EXAMINED 21c INFANT ADMITTED TO HOSPITAL
 YES NO
 YES NO

20d DATE OF LAST LIVE BIRTH (Mo., Year) 20e DATE OF LAST OTHER TERMINATION (Mo., Year)

24 BIRTHWEIGHT (Specify unit) 25 ESTIMATED WEIGHT AT BIRTH 26 PLACE OF BIRTH
 Hospital _____
 Free-standing Birth Center _____
 Clinic/Doctor's Office _____
 Bedside _____
 Other (Specify) _____

SAMPLE COPY

MEDICAL AND HEALTH INFORMATION

28 MEDICAL RISK FACTORS FOR THIS PREGNANCY (Check all that apply)

29 OTHER RISK FACTORS FOR THIS PREGNANCY

30 OBSTETRIC PROCEDURES (Check all that apply)

31 INDICATIONS OF LABOR AND/OR DELIVERY (Check all that apply)

32 METHOD OF DELIVERY (Check all that apply)

33 ABNORMAL CONDITIONS OF THE NEWBORN (Check all that apply)

34 APPARENT CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply)

Figure 4.3

MICHIGAN DEPARTMENT OF PUBLIC HEALTH
REPORT OF FETAL DEATH
(TYPE OR PRINT IN INK)

FETUS

1a DATE OF DELIVERY (Month, Day, Year) 1b TIME 1c SEX OF FETUS 1d WEIGHT OF FETUS 1e ESTIMATED WEEKS GESTATION 1f ATTENDANT AT DELIVERY

MOTHER

2a RESIDENCE - STATE, IF OUTSIDE USA ENTER COUNTRY 2b RESIDENCE - COUNTY 2c RESIDENCE - LOCAL (Check one box and specify) 2d ZIP CODE

MOTHER

3 ANCESTRY 4 RACE 5 EDUCATION 6 OCCUPATION AND BUSINESS INDUSTRY 7 AGE (At Time of Delivery)

FATHER

8a 8b 8c 8d 8e 8f 8g 8h

MEDICAL AND PREGNANCY HISTORY INFORMATION

9 EXPECTED SOURCE OF PAYMENT FOR MEDICAL SERVICES 9a MOTHER TRANSFERRED PRIOR TO DELIVERY 10 PREGNANCY HISTORY 11 DATE LAST NORMAL MENSES BEGAN

11a NOW LIVING 11b NOW DEAD 11c NOW TERMINATED 12 PLURALITY 13 IF NOT SINGLE BIRTH 14a MONTH OF PREGNANCY PRENATAL CARE BEGAN 14b PRENATAL VISITS - Total Number

15a MEDICAL RISK FACTORS FOR THIS PREGNANCY 15b OTHER RISK FACTORS FOR THIS PREGNANCY 16 OBSTETRIC PROCEDURES 17 COMPLICATIONS OF LABOR AND/OR DELIVERY 18 APPARENT FETAL ANOMALIES IN FETUS

20 PART I: Fetal or maternal condition directly causing fetal death. IMMEDIATE CAUSE. a. DUE TO (OR AS A CONSEQUENCE OF) b. DUE TO (OR AS A CONSEQUENCE OF) c. Fetal and/or maternal conditions, if any, giving rise to the immediate cause listed in the underlying cause box. PART II: Other significant conditions of fetus or mother contributing to fetal death but not resulting in the underlying cause given in Part I.

21 FETUS DIED BEFORE LABOR DURING LABOR OR DELIVERY UNKNOWN (Specify)

PLACE

22a HOSPITAL WHERE FETUS WAS DELIVERED (IF NOT HOSPITAL - GIVE ADDRESS OF PERSON COMPLETING REPORT) 22b CITY, VILLAGE, OR TOWNSHIP OF DELIVERY 22c COUNTY OF DELIVERY

23 NAME OF PERSON COMPLETING REPORT (TYPE OR PRINT) 24 DATE REPORT COMPLETED (Month, Day, Year) 25 DATE REPORT RECEIVED BY DEPARTMENT (Month, Day, Year)

SAMPLE COPY

Figure 4.4

STATE OF MICHIGAN
DEPARTMENT OF PUBLIC HEALTH
CERTIFICATE OF DEATH

STATE FILE NUMBER
№ 0187597

LF _____
CF _____

TYPE, PRINT TO PERMANENT BLACK INK

NAME OF DECEDENT FOR USE BY PHYSICIAN OR INSTITUTION

1. DECEDENT'S NAME (First, Middle, Last)		2. SEX	3. DATE OF DEATH (Month, Day, Year)
4a. AGE - Last Birthday (Years)	4b. UNDER 1 YEAR MONTHS DAYS	4c. UNDER 1 DAY HOURS MINUTES	5. DATE OF BIRTH (Month, Day, Year)
7a. LOCATION OF DEATH (Enter place officially pronounced dead in 7a, 7b, 7c.) HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number)		7b. IF HOSP OR INST. Inpatient, Outpatient, Emergency Room, OOA (Specify)	7c. CITY, VILLAGE, OR TOWNSHIP OF DEATH
8. SOCIAL SECURITY NUMBER	9a. USUAL OCCUPATION (Give kind of work done during most of working life. Do not use retired)	9b. KIND OF BUSINESS OR INDUSTRY	
10a. CURRENT RESIDENCE - STATE	10b. COUNTY	10c. LOCALITY (Check one box and specify) <input type="checkbox"/> INSIDE CITY OR VILLAGE OF <input type="checkbox"/> TWP OF	10d. STREET AND NUMBER
10e. ZIP CODE	11. BIRTHPLACE (City and State or Foreign Country)	12. MARITAL STATUS - Married, Never Married, Widowed, Divorced (Specify)	13. SURVIVING SPOUSE (If living, give name and date of first marriage)
14. WAS DECEDENT EVER IN U.S. ARMED FORCES? (Specify Yes or No)	15. ANCESTRY - Mexican, Puerto Rican, Cuban, Central or South American, Chinese, other Hispanic, Afro-American, Arab, English, French, Finnish, etc. (Specify above)	16. RACE - White, Negro, American Indian, Alaska Native, Hawaiian, Other Pacific Islander, etc. (Specify above)	17. DECEDENT'S EDUCATION (Specify only highest grade completed) Elementary/Secondary (0-12) College (1-4 or 5+)
18. FATHER'S NAME (First, Middle, Last)		19. MOTHER'S NAME (First, Middle, Surname before first marriage)	
20a. INFORMANT'S NAME (Type/Print)		20b. ADDRESS (Street and Number or Rural Route Number, City or Village, State, ZIP Code)	
21. METHOD OF DISPOSITION - Burial, Cremation, Removal, Donation, Other (Specify)		22a. PLACE OF DISPOSITION (Name of Cemetery, Crematory, or other place)	22b. LOCATION - City or Village, State
23. SIGNATURE OF FUNERAL SERVICE LICENSEE		24. LICENSE NUMBER (of Licensee)	25. NAME AND ADDRESS OF FACILITY
26. PART I Enter the diseases, injuries, or complications that caused the death. Do NOT enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line. IMMEDIATE CAUSE (Final disease or condition resulting in death) Subsequently list conditions, IF ANY, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury that initiated events resulting in death) LAST. PART II Other significant conditions contributing to death but not resulting in the underlying cause given in Part I			27a. WAS AN AUTOPSY PERFORMED? (Yes or No)
			27b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or No)
28. ACTUAL PLACE OF DEATH (Home, Nursing Home, Hospital, Ambulance) (Specify)		29. WAS CASE REFERRED TO MEDICAL EXAMINER? (Specify Yes or No)	
30a. To the best of my knowledge death occurred at the time, date and place and due to the cause(s) stated. (Signature and Title)		31a. <input type="checkbox"/> The case reviewed and determined not to be a medical examiner's case (Check one only) <input type="checkbox"/> On the basis of examination and investigation, in my opinion death occurred (of the time, date and place and due to the cause(s) and manner stated	
30b. DATE SIGNED (Mo, Day, Yr)		30c. TIME OF DEATH	
30d. NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print)		31b. DATE SIGNED (Mo, Day, Yr)	
		31c. CASE NUMBER	
		31d. PRONOUNCED DEAD (Mo, Day, Yr)	
		31e. TIME OF DEATH	
32a. NAME AND ADDRESS OF PERSON WHO COMPLETED CAUSE OF DEATH (ITEM 26) (Type or Print)		32b. LICENSE NUMBER	
33a. ACC. SUICIDE, HOW NATURAL OR PENDING INVEST (Specify)		33b. DATE OF INJURY (Mo, Day, Yr)	33c. TIME OF INJURY
		33d. DESCRIBE HOW INJURY OCCURRED	
33e. INJURY AT WORK (Specify Yes or No)		33f. PLACE OF INJURY At home, farm, street, factory, office, building, etc. (Specify)	
		33g. LOCATION - Street or RFD No, City, Village or Twp, State	
34a. REGISTRAR'S SIGNATURE		34b. DATE FILED (Month, Day, Year)	

0 36 Rev. 1-89

Section 2843 of Act 368 Public Acts of 1978 requires that the attending physician shall fill out and sign the medical certificate of death within 48 hours after death.

In the absence of the attending physician and in the absence of a physician representing the attendant, medical certification must be provided as follows:

For deaths pronounced within a hospital, by the chief medical officer of the hospital based on the available records or by a pathologist.

For deaths pronounced outside a hospital, by the county medical examiner.

The funeral director is responsible for completing all other portions of the certificate and obtaining a burial or removal permit prior to disposing of the body or removing from the registration district where the death occurred.

This document must be typewritten (except signatures) or printed in black indelible ink. Alterations to the document must be accomplished using a lift off process. Damaged or folded documents are not acceptable.

Failure to provide the required information is a misdemeanor punishable by imprisonment of not more than 1 year or a fine of not more than \$1,000.00 or both.

NOTE: If the decedent is suspected of having had an infectious condition notification of the funeral director to whom the body is released may be required by Act 185 of 1986

Figure 4.5

Except for signature, spaces left blank must be completed by typewriter or printed legibly.

STATE FILE NO. _____
LOCAL FILE NO. 0166087

Marriage License

State of Michigan

State of Michigan

To any person legally authorized to solemnize marriage in the State of Michigan, Marriage must be solemnized in the State of Michigan on or before _____ DATE _____ between _____ and _____

FULL NAME OF MALE FIRST, MIDDLE, LAST: _____ FULL NAME OF FEMALE FIRST, MIDDLE, LAST: _____
LAST NAME BEFORE FIRST MARRIAGE, IF DIFFERENT: _____

PRESENT AGE _____ DATE OF BIRTH _____ PRESENT AGE _____ DATE OF BIRTH _____
RESIDENCE NO. _____ STREET _____ RESIDENCE NO. _____ STREET _____

CITY, STATE, AND ZIP CODE _____ CITY, STATE, AND ZIP CODE _____
RESIDENCE COUNTY _____ NUMBER OF YEARS PREVIOUSLY MARRIED _____ RESIDENCE COUNTY _____ NUMBER OF YEARS PREVIOUSLY MARRIED _____

SHIPPLACE - CITY AND STATE _____ SHIPPLACE - CITY AND STATE _____
FATHER'S FULL NAME _____ MOTHER'S FULL NAME _____
MOTHER'S FULL NAME SECOND SURNAME _____ MOTHER'S FULL NAME SECOND SURNAME _____

FATHER'S SIGNATURE _____ MOTHER'S SIGNATURE _____
DATE OF SIGNATURE _____ DATE OF SIGNATURE _____

An affidavit has been filed in _____ office by which it appears that said statements are true. This marriage license authorizes the marriage of the parties named above within the State of Michigan by any person authorized to perform a marriage ceremony under the laws of the State of Michigan.

In witness whereof, I have signed and sealed these presents, this _____ day of _____ 19____

COUNTY CLERK _____ COUNTY DEPUTY CLERK _____

Certificate of Marriage

Between Mr. _____ and M _____
I hereby certify that, in accordance with the above license, the persons herein mentioned were joined in marriage by me, in _____ CITY, TOWNSHIP OR TOWNSHIP _____ county of _____ MICHIGAN, on the _____ day of _____ A. D. 19____, in the presence of _____

SIGNATURE OF WITNESS _____ SIGNATURE OF WITNESS _____
NAME OF WITNESS (TYPE OR PRINT) _____ NAME OF WITNESS (TYPE OR PRINT) _____
SIGNATURE OF MAGISTRATE OR CLERK _____ NAME AND TITLE OF MAGISTRATE OR CLERK (TYPE OR PRINT) _____
POST OFFICE ADDRESS OF MAGISTRATE OR CLERK _____

THIS ORIGINAL must be returned WITHIN TEN DAYS AFTER THE MARRIAGE to the COUNTY CLERK, who issued the same under severe penalty. This provision must be complied with to insure a PROPER LEGAL RECORD of the marriage.

No. _____ 19____
LICENSE AND CERTIFICATE OF MARRIAGE

ORIGINAL

County of _____
Clerk's Office _____

Received for record this _____ day of _____ A. D. 19____ and recorded

in _____ of marriages, on page _____

Clerk _____
THIS ORIGINAL must be returned WITHIN TEN DAYS AFTER THE MARRIAGE, to the County Clerk who issued the same, under severe penalty. This provision must be complied with to insure a PROPER LEGAL RECORD of the marriage. THE DUPLICATE must be delivered to one of the parties joined in marriage.

This Space Reserved for Binding

Figure 4.6

**RECORD OF
DIVORCE OR ANNULMENT**

MICHIGAN DEPARTMENT OF PUBLIC HEALTH
By authority of MCL 333.2813.

Court Case Number _____

County Circuit Court _____

State File Number _____

1. Husband's Name _____
First, Middle, Last

2. Husband's Birthdate _____
Month, Day, Year

3. Husband's Residence _____
City, Village or Township County State

4. Husband's Birthplace _____
State or Foreign Country

5. Number of this Marriage _____
First, Second, etc. (Specify)

6. Wife's Name _____
First, Middle, Last

7. Wife's Birthdate _____
Month, Day, Year

8. Wife's Last Name Before First Married _____

9. Wife's Residence _____
City, Village or Township State

10. Wife's Birthplace _____
State or Foreign Country

11. Number of this Marriage _____
First, Second, etc. (Specify)

12. Place of this Marriage _____
City, Village or Township County State or Foreign Country

13. Date of this Marriage _____
Month, Day, Year

14. Date Couple Last Resided in Same Household _____
Month, Day, Year Check if Not Separated

15. Number of Minor Children in Household at Separation Date (Filing Date if Not Separated) _____
Number Check if None

16. Plaintiff Husband Wife Other

17. Plaintiff's Attorney _____
Name (Type or Print) Bar Number

18. Attorney's Address _____
Number and Street City State ZIP Code

19. Judgement of _____
Divorce Annulment (Specify)

20. Number of Minor Children whose Physical Custody was Awarded to: Husband _____ Wife _____ Joint _____ Other _____
Number Number Number Number No Children

21. Judgement Recorded on _____
Month, Day, Year

22. I certify that this Divorce was granted on _____
Month, Day, Year

23. Certifying Official _____
Signature Title Date Signed

SAMPLE COPY

Failure to provide the required information is a misdemeanor punishable by imprisonment of not more than 1 year or a fine of not more than \$1,000.00 or both.

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