



Michigan Health Statistics

1997

Michigan Department
of Community Health

M DCH

John Engler, Governor
James K. Haveman, Jr., Director

SYMBOLS USED IN TABLES

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**MICHIGAN
HEALTH STATISTICS**

1997

Division for Vital Records and Health Statistics

Michigan Department of Community Health
Lansing, Michigan May 1999

John Engler, Governor
State of Michigan



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INTRODUCTION

The 1997 edition of Michigan Health Statistics is a statistical summary of vital events for calendar year 1997. 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 1997, 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, 1998, and all in-state certificates and records received prior to March 15, 1998. Although a few additional records for the calendar year 1997 were received after these filing dates, their exclusion from this report is statistically insignificant.

This report is composed of 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 division. The Division for Vital Records and Health Statistics will make every attempt to comply with requests for data within the limitations of staff and resources.

Additional statistical information for the state of Michigan as well as individual Michigan communities can be found on the Internet. The web site address is:

<http://www.mdch.state.mi.us>

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TECHNICAL NOTES, DEFINITIONS, RATES AND RATIOS

DEFINITIONS

ANCESTRY - National origin for mother, father or decedent is as stated on certificate. First collected in 1989. If more than one ancestry is reported, the first listed is used. If "American" is given with any other ancestry, the other ancestry is used.

BIRTHWEIGHT - Weight of fetus or infant at time of delivery.

EXTREMELY LOW BIRTHWEIGHT - Births in 1984 or later wherein the birthweight is less than 750 grams (approximately 1 lbs., 10.5 oz.) or births before 1984 wherein the birthweight is 750 grams or less.

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 does not include 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 - Deaths occurring to individuals less than 7 days of age.

INFANT DEATH - Deaths occurring to individuals less than 1 year of age.

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.

KESSNER INDEX -

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.

Intermediate prenatal 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 with fewer visits than would be appropriate for the length of gestation.

Inadequate prenatal care is when no care was received or if care began during the third trimester. It is also 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 is 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.

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.

T_x = 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 BIRTHWEIGHT - Births in 1984 or later wherein the birthweight is less than 2,500 grams (approximately 5 lbs., 8 oz.) or births before 1984 wherein the birthweight 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 - Deaths occurring to individuals less than 28 days of age.

OCCURRENCE - Place where the event actually occurred.

PERINATAL DEATH - Fetal deaths plus deaths to individuals less than 7 days of age.

POSTNEONATAL DEATH - Deaths occurring to individuals 28-364 days of age.

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 plus fetal deaths.

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

VERY LOW BIRTHWEIGHT - Births in 1984 or later wherein the birthweight is less than 1,500 grams (approximately 3 lbs., 4 oz.) or births before 1984 wherein the birthweight is 1,500 grams or less.

YEARS OF POTENTIAL LIFE LOST - The number of years between the age at death and 75 years of age for individuals dying before age 75.

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 x 1,000.

AGE-SPECIFIC DEATH RATE - Number of resident deaths in specific age group divided by total resident population in specific age group x 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 x 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 x 1,000.

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

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

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

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

CRUDE DEATH RATE - Number of resident deaths divided by total resident population x 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 plus 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 BIRTHWEIGHT RATIO - Number of resident low birthweight live births divided by total resident live births x 1,000.

MARRIAGE RATE - Number of persons with occurrent marriages divided by total resident population x 1,000.

MATERNAL DEATH RATE - Number of resident maternal deaths divided by total resident live births x 100,000.

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.

RELIABILITY OF RATES

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

POSTNEONATAL DEATH RATE - Number of resident postneonatal deaths divided by total resident live births 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.

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

UNDER-REGISTRATION OF EVENTS

The under-registration 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 indeterminate 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 underreporting 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 1979 to date. Certain ICD-9 codes are grouped in order to classify selected causes of death. The codes for selected causes used in this report are:

<u>ICD codes</u>	<u>Selected Causes</u>
42-44	AIDS
36	Meningococcal Infections
140-208	Cancer
250	Diabetes Mellitus
260-269	Nutritional Deficiencies
390-398, 402,	Heart Disease
404-429	
430-438	Cerebrovascular Diseases
480-487	Pneumonia and Influenza
490-496	Chronic Obstructive Pulmonary Diseases
571	Chronic Liver Disease and Cirrhosis
500-589	Kidney Disease
740-759	Congenital Anomalies
760-779	Certain Conditions Originating in the Perinatal Period
798.0	Sudden Infant Death Syndrome
E800-E949	Accidents and Adverse Effects
E950-E959	Suicide
E960-E978	Homicide

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 were obtained from the April 1, 1970 census counts. 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 Division for Vital Records and 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 1980 through 1997 by age, race and sex were developed by the Office of the State Demographer, Michigan Department of Management and Budget, using a mathematical model which reflects current Census Bureau statewide estimates by single year of age and its county estimates of total population. They also reflect deviations observed from 1980 to 1990 in the growth of each county/age/race/sex category relative to the growth of county total population and statewide population by age.

The age-adjusted rates for Michigan presented in this report for years 1970-1997 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 death rates for Michigan and the United States have been revised for 1971-1980 based on the 1980 census enumeration, 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 estimated populations used for 1997 provisional data are based on the 1990 census enumeration and therefore are comparable to those used for the 1996 final data. Rates for 1981-1989 have been recomputed based on populations for those years that are consistent with the 1990 census levels.

NATALITY

SECTION I



NATALITY

KEY TRENDS

Demographic Between 1900 and 1997, the number of live births has varied considerably. The general trend has been increasing numbers of live births from 1900 through 1957, declining numbers through 1976 and fairly stable numbers until 1989. During 1989 through 1991 there were more live births each year in Michigan than had been born to Michigan residents in any year since 1971. There was a 13 percent drop in the number of live births between 1990 and 1997.

In the last twenty-five years fertility rates (births per 1,000 women ages 15-44) for white and black women decreased with the fertility rates for white women reaching a low level by about 1975 and for black women by about 1985. Fertility rates for white women have remained fairly stable since 1975, while rates for black women rose after 1985, peaked in 1990 and have generally declined since then. During this time period there has been an increase in the percent of births to minority race populations from 17 percent in 1977 to 21 percent of the births in 1997.

Since 1980 birth rates for white teenage women have fluctuated from a low in 1983 of 35.3 births per 1,000 white women 15 to 19 years of age to a high of 43.6 in 1990. Rates for black teenage women have fluctuated from a low of 85.9 in 1982 to a high of 137.8 in 1991. The rates have declined to 35.5 and 90.4 in 1997 for white and black teens, respectively.

Prenatal Care A national goal is to increase to at least 90 percent the proportion of pregnant women who initiate prenatal care in the first trimester of pregnancy by the year 2000. In Michigan, the percentage of mothers who initiated care early rose from 69 percent in 1970 to 81 percent in 1985 and has remained at approximately 80 percent since that time. In 1997, the highest percentages of mothers who initiated care early occurred among white and Asian and Pacific Islander mothers and mothers of Arab ancestry (81 to 86 percent). The lowest percentages occurred among black and American Indian mothers and mothers of Hispanic ancestry (65 to 73 percent).

An Overview, 1997

Total Resident Live Births	133,549
Resident Live Births per Day	365.9
Crude Birth Rate (births per 1,000 population)	13.7
Fertility Rate (births per 1,000 women 15-44)	60.0
First Births (percent of total live births)	39.1
Median Birthweight in Grams (live births)	3,374
Low Birthweight Live Births	10,335
Low Birthweight Ratio (per 1,000 live births)	77.4
Median Age of Mother (live births)	27
Live Births with Congenital Anomalies	1,503
Congenital Anomalies per 10,000 Live Births	113
Live Births with No Prenatal Care	1,366
No Prenatal Care Ratio (per 1,000 live births)	10.2
Home Births	881
Live Born Sets of Twins	1,921
Live Born Sets of Triplets	72
Live Born Multiple Births of Four or More	9
Male Live Births per 100 Female Live Births	103.9
Total Resident Fetal Deaths	798

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Birth Outcome A national goal is to have the percentage of infants with low birthweight be no more than 5 percent overall and 9 percent among infants born to black mothers by the year 2000. The low birthweight percentage in Michigan declined from 8.0 percent in 1966 to a low of 6.8 percent in 1985. It increased to 7.7 percent in 1997. The percent for white mothers decreased from 6.6 in 1970 to 6.5 in 1997, while the percent for black mothers fell from 14.3 in 1970 to 13.2 in 1997. Of more concern is the percent of births with extremely low birthweight (less than 750 grams) where about 65 percent of the live births will die within one year, usually in the first day of life. While 0.2 to 0.4 percent of the infants born to white and Asian and Pacific Islander mothers and mothers of Arab and

Hispanic ancestry had extremely low birthweight in 1997, 1.3 percent of the live births to black mothers had extremely low birthweight.

Tobacco Use A national goal is to reduce tobacco use by pregnant women to less than 10 percent of the births by the year 2000. In 1997 17.4 percent of the pregnant Michigan women used tobacco during their pregnancy.

Tobacco use during pregnancy was highest among American Indian mothers (36 percent). About 3 percent of the Asian and Pacific Islander mothers and 4 percent of the mothers of Arab ancestry smoked. About 9 percent of the mothers of Hispanic ancestry smoked, while 16 and 18 percent of the black and white mothers smoked, respectively.

LIVE BIRTHS

Michigan Trend 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.

Live births generally increased from 43,699 in 1900 to 208,488 in the peak year of 1957 with major declines occurring during the first years of the Great Depression and towards the end of the Second World War (Figure 1.1). Between 1957 and 1976, live births decreased by 37 percent to 131,378, the lowest total since 1945. Between 1977 and 1988 the number of births fluctuated between a high of 145,162 live births in 1980 and a low of 133,026 in 1983. There was an increase in the number of live births in both 1989 and 1990. Since the recent high of 153,080 live births in 1990, the number of births declined every year to 133,231 in 1996, and rose slightly to 133,549 births in 1997.

United States The national pattern of birth trends was similar to that observed in Michigan. For 1997, the provisional figure was 3,894,970, an increase of less than one percent from 1996.

Crude Birth Rates Another view of the historic pattern in live births may be obtained through examination of changes in the crude birth rate, the number of births per 1,000 Michigan residents. The historic low rate of 13.7 was achieved in 1996, and remained in 1997. Prior to 1996, in this century, the crude birth rate ranged from a low of 13.9 per 1,000 residents in 1995 to a high of 27.4 in 1956 (Figure 1.2). Between 1976 and 1988, the rate fluctuated between the high of 15.7 in 1980 and a low of 14.7 in 1983. From 1989 through 1991 the crude birth rate was about 16 live births per 1,000 residents. The 1997 rate of 13.7 is 14 percent lower than the rate in 1991.

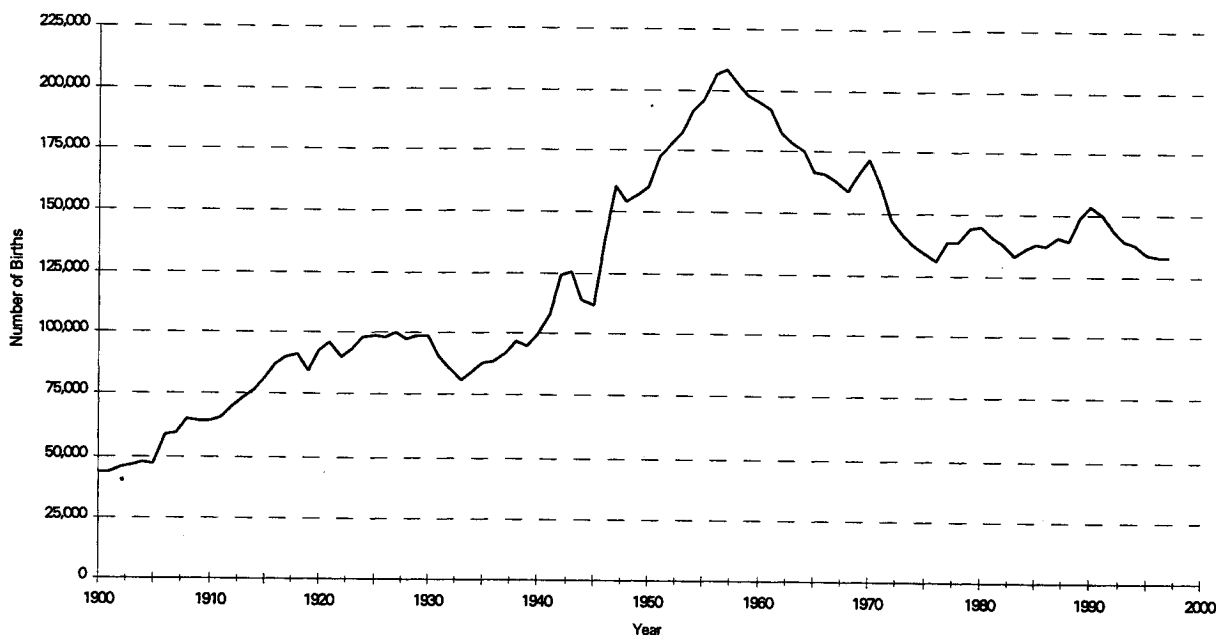
Table 1.1
Live Births and Crude Birth Rates
Michigan and United States Residents
Selected Years, 1900 - 1997

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
3,731,386	18.4	1970	171,667	19.3
3,612,258	15.9	1980	145,162	15.7
4,158,212	16.7	1990	153,080	16.4
4,110,907	16.3	1991	149,478	15.9
4,065,014	15.9	1992	143,827	15.2
4,000,240	15.5	1993	139,560	14.7
3,952,767	15.2	1994	137,844	14.4
3,899,589	14.8	1995	134,169	13.9
3,891,494	14.7	1996	133,231	13.7
3,894,970	14.6	1997	133,549	13.7

Note: Rates are live births per 1,000 population.
1997 U.S. data are provisional.

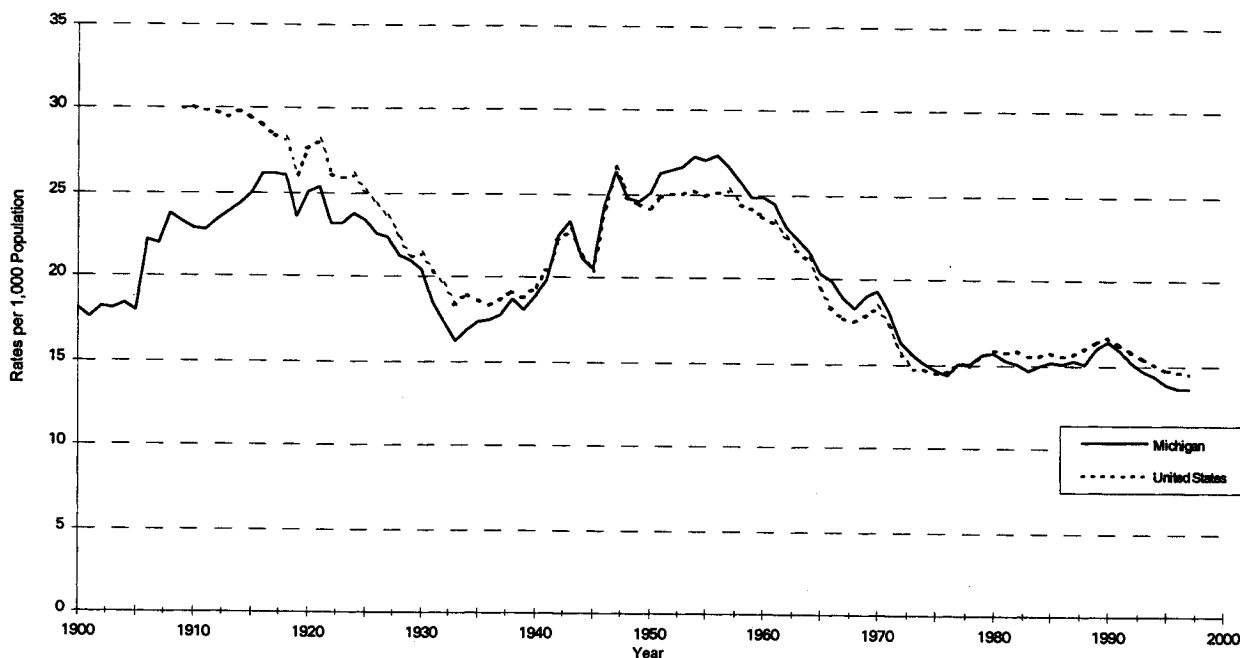
Source: 1900-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Figure 1.1
Live Births
Michigan Residents, 1900-1997



Source: 1900-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Figure 1.2
Live Birth Rates
Michigan Residents, 1900-1997 and United States Residents, 1909-1997



Note: Rates are live births per 1,000 population. United States rates prior to 1909 are not available. 1997 U.S. data are provisional.

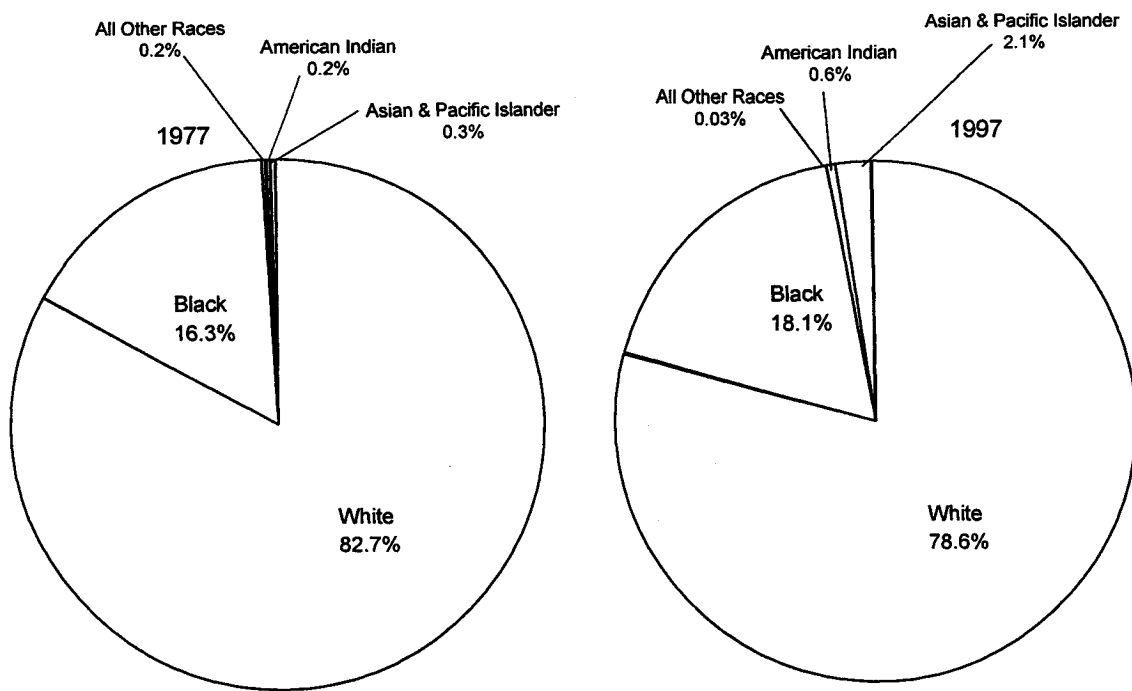
Source: 1900-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

AGE, RACE AND ANCESTRY

Racial Composition As part of the changing demographics in Michigan, the racial composition of women having live births in Michigan changed over the period 1977 through 1997 (Figure 1.3). Live births to white women declined from 82.7 percent of

all live births in 1977 to 76.6 percent in 1997. The percentages of live births born to mothers of minority race groups increased from 17 to 21 percent during the 20-year interval.

Figure 1.3
Live Birth Percents by Mother's Race
 Michigan Residents, 1977 and 1997



Note: Totals may not add to 100 percent due to rounding.

Source: 1977 and 1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

Mother's Age In 1997, about 35 percent of all live births were to women less than 25 years of age (Table 1.2). Less than 2 percent occurred to women over 39 years of age. The median age of Michigan mothers was 27 years. Black, American Indian and Hispanic mothers were younger (median: 24 to 25 years), while white, Asian and Pacific Islander and Arab mothers were older (median: 27 to 29 years).

Teenage Mothers Differences are reflected in the proportion of teenage births in each race or ancestry group. Although over 60 percent of the births to teens are to white mothers, only about 1 in 10 births to white mothers were born to a teen. Even lower proportions of Asian and Pacific Islander mothers and mothers of Arab ancestry were under age 20, about 1 in 26 and 1 in 14 respectively. About 1 in 6 births to mothers of Hispanic ancestry and 1 in 5 births to American Indian and black mothers were born to teenage mothers.

Table 1.2
Live Births and Percent Distribution by Age, Race and Ancestry of Mother
Michigan Residents, 1997

Age of Mother in Years	Race												Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		All Other Races		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<15	278	0.2	90	0.1	179	0.7	2	*	6	0.2	-	-	2	*	24	0.4
15 - 19	15,358	11.5	9,964	9.5	5,097	21.1	143	18.8	102	3.6	9	23.7	204	7.0	969	17.8
20 - 24	31,164	23.3	22,778	21.7	7,573	31.3	256	33.6	425	15.0	8	21.1	755	26.0	1,722	31.7
25 - 29	39,403	29.5	32,115	30.6	5,816	24.0	191	25.1	1,039	36.7	12	31.6	900	31.0	1,468	27.0
30 - 34	31,664	23.7	26,941	25.7	3,539	14.6	118	15.5	859	30.4	6	15.8	653	22.5	858	15.8
35 - 39	13,327	10.0	11,164	10.6	1,669	6.9	43	5.7	332	11.7	2	*	301	10.4	330	6.1
40+	2,333	1.7	1,914	1.8	323	1.3	8	1.1	65	2.3	1	*	86	3.0	68	1.3
Not stated	22	0.0	14	0.0	5	*	-	-	1	*	-	-	-	-	1	*
Total	133,549	100.0	104,980	100.0	24,201	100.0	761	100.0	2,829	100.0	38	100.0	2,901	100.0	5,440	100.0
Median age at last birthday	27		28		24		24		29		25		27		25	

Note: Totals may not add to 100 percent due to rounding. Records with race not stated are included only in the "All Races" column. Asterisk (*) indicates that the data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

FERTILITY

The fertility rate relates the number of live births to the female population of childbearing age, 15 through 44 years. Similarly, age-specific rates which relate the number of live births to the females in a specific age group provide more detail on the fertility of women in the age group.

Trends A comparison of fertility rates since 1900 for Michigan with those for the United States since 1910 is presented in Table 1.3 and since 1970 in Figure 1.4. The crude birth rate changes discussed above understate the recent decline in fertility for both regions. The fertility rate for Michigan in 1997 was 51 percent below the 1960 rate, while the crude birth rate decreased 45 percent over the 37 years.

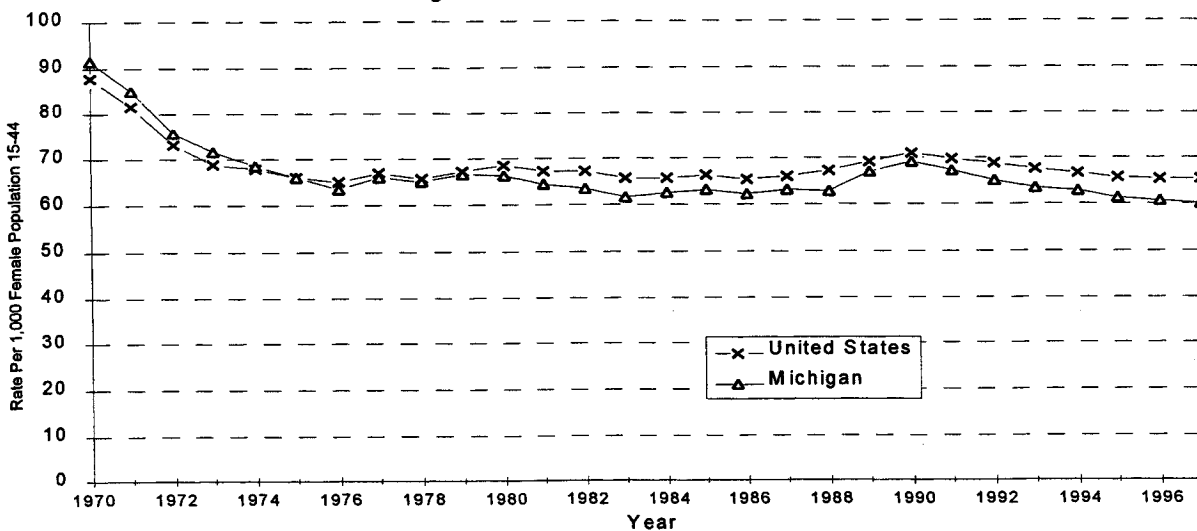
Table 1.3
Fertility Rates
Michigan and United States Residents
Selected Years, 1900-1997

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
87.9	1970	91.7
68.4	1980	66.2
70.9	1990	68.9
69.6	1991	67.0
68.9	1992	64.7
67.6	1993	63.0
66.7	1994	62.2
65.6	1995	60.4
65.3	1996	59.7
65.3	1997	60.0

Note: Fertility rates are live births per 1,000 women 15-44.
1997 U.S. data are provisional.

Source: 1900-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Figure 1.4
Fertility Rates
Michigan and United States Residents, 1970-1997



Note: Fertility rates are live births per 1,000 female population ages 15-44. 1997 U.S. data are provisional.

Source: 1970-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Fertility Rates by Race Table 1.4 provides a comparison between fertility rates for white and black women in Michigan for the period since 1970.

The fertility rate for black women was 40 percent above the rate for white women in 1970, fell sharply to 10 percent higher in 1985, increased to 45 percent higher in 1991 then decreased again to 14 percent higher in 1997. Since 1970 the fertility rate for black women has declined 46 percent compared with a 34 percent drop for white women.

The fertility rates for white women declined to a low level of 60.8 per 1,000 white females ages 15-44 in 1976, then rose to a high of 64.5 in 1990. Similarly, rates for black women declined to 68.5 in 1985 and then increased to a high of 92.7 in 1990. Since then, the rates have declined to 58.1 for white women and the lowest rate (66.4) for black women since 1985.

Table 1.4
Fertility Rates by Race of Mother
Michigan Residents, Selected Years, 1970-1997

Year	Fertility Rate	
	White	Black
1970	87.9	123.5
1975	62.6	89.5
1980	64.3	77.9
1985	62.4	68.5
1990	64.5	92.7
1991	62.6	90.9
1992	61.0	85.0
1993	59.6	80.5
1994	59.0	76.7
1995	58.1	69.7
1996	57.8	66.4
1997	58.1	66.4
Percent Change 1970-1997	-33.9	-46.2

Note: Rates are per 1,000 females ages 15-44.

Source: 1970-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

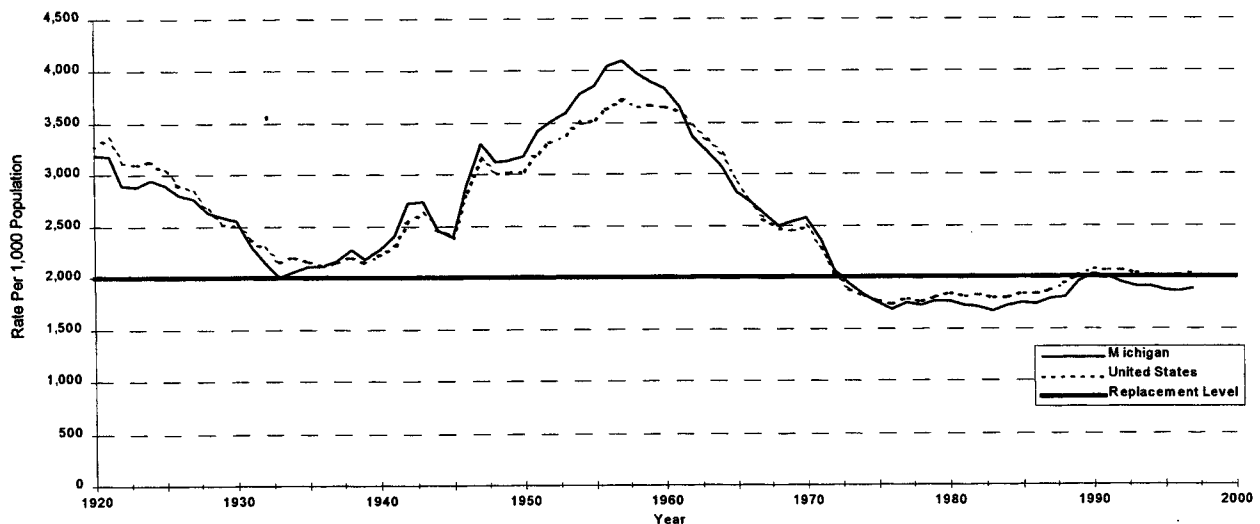
Replacement Level Figure 1.5 displays the changes in the fertility rate between 1920 and 1997 for Michigan and the United States. (See also Table 4.4) The total fertility rate is a hypothetical measure of the number of live births that would occur to every 1,000 women during their reproductive life, if these women experienced the age-specific birth rates observed in a given year. 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 will eventually occur.

Michigan's total fertility rate has generally paralleled that of the nation. The Michigan rate dropped from 3,196 in 1920 to 2,007 in 1933 and then increased between 1933 and 1957, reaching 4,100 in

the latter year. Between 1957 and 1997, the total fertility rate in Michigan declined to a low of 1,676 in 1983 and increased to 1,882 in 1997. The rate was 2,040 in 1997 for the United States. The national rates have been higher than the Michigan rates since 1975.

In 1990, for the first time since 1972, both Michigan and national total fertility rates were above 2,000. In 1992 through 1997, the Michigan total fertility rate was again below 2,000. It should be noted that although the total fertility rate has almost always been below 2,000 since 1973, the rate of natural increase for Michigan remains positive. During the period 1973 through 1997, there were 1,531,125 persons added to the population of Michigan through the excess of live births over deaths. During that period, there has been a net migration of 829,233 people out of Michigan.

Figure 1.5
Total Fertility Rates
Michigan and United States Residents, 1920-1997



Note: Total Fertility rate is total children born to 1,000 women in their lifetime assuming constant live birth rates. 1997 U.S. data are provisional.

Source: 1920-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

AGE-SPECIFIC LIVE BIRTH RATES

All Women Figure 1.6 displays age-specific live birth rates for the period 1970-1997. Live birth rates in all age groups dropped between 1970 and 1976. For women under 20 years of age the rate continued to decline throughout the years 1976-1983 reaching a low of 43.1 in 1983. The rate increased after 1983 to a high of 60.5 in 1990 then declined to 44.6 in 1997.

After declining between 1970 and 1976, live birth rates for women between 20-24 and 25-29 years of age remained stable until 1980. The rates decreased through 1983 and then increased to relatively high levels in 1990. These rates are decreasing again.

For women in the age groups 30-34 and 35-39, live birth rates decreased from high levels in 1956 and 1957 to century low rates in 1976, then increased by 69 and 94 percent, respectively, by 1997 (Appendix Table 4.4).

Black and White Women Figures 1.7 and 1.8 present the trends in age-specific rates for white and

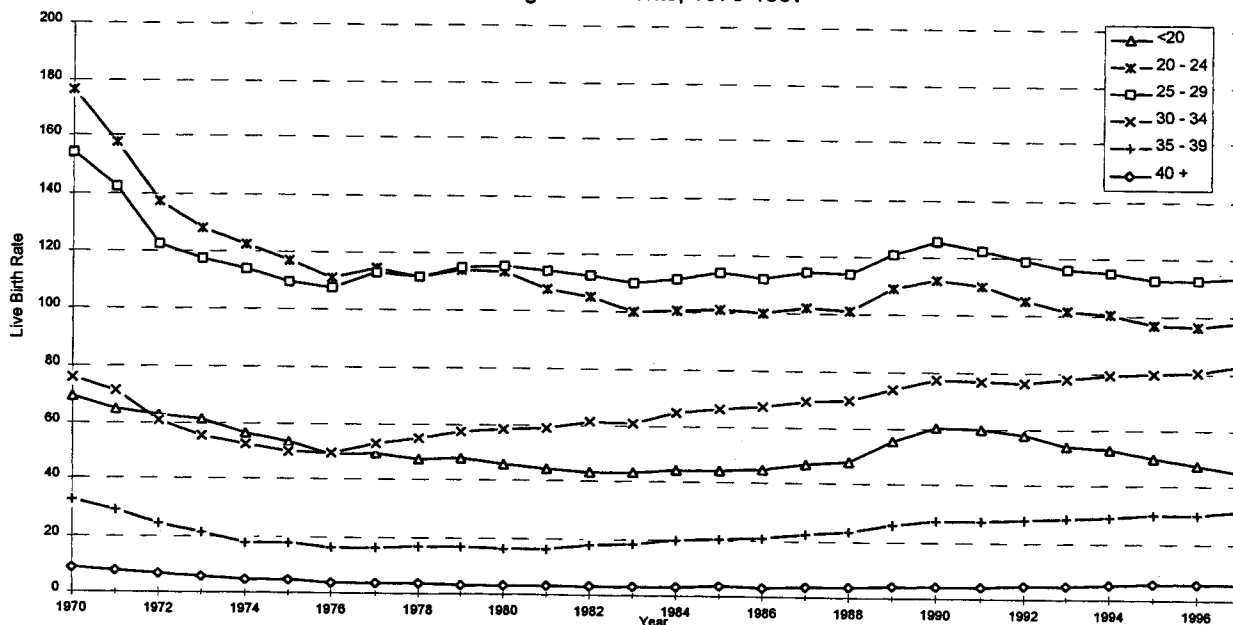
black women respectively for the period 1980-1997. Rates for black women under age 25 were above those for white women during these years. The live birth rates for white and black women aged 25 and over were similar.

Between 1980 and 1997, rates for white females increased for all age groups, ages 30 and over. For black females ages 20-29, rates increased through 1990 then decreased through 1996. There was a gradual increase in rates for ages 30 and above between 1980 and 1997 for both groups.

For black teenage women, birth rates fluctuated between 1980 and 1985, increased from 1986 to 1991, and decreased by 34.4 percent in 1997. The rates for white teenagers fell from 1980 through 1983, remained fairly constant until 1988, rose through 1990 and decreased by 18.6 percent in 1997.

Rates for black and white teens were mirrored by their counterparts ages 20-29 for most years between 1980 and 1997.

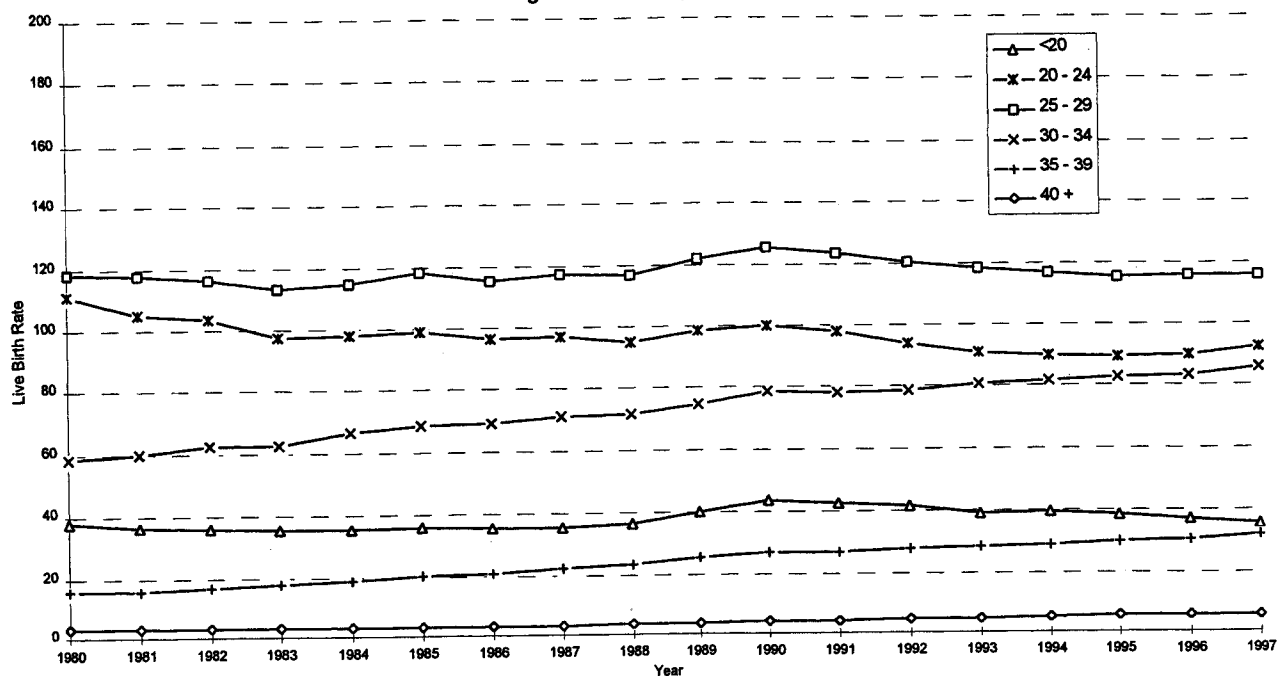
Figure 1.6
Age-Specific Live Birth Rates
Michigan Residents, 1970-1997



Note: Age-specific birth rate is the number of resident live births to women of a specific age group per 1,000 female population of that specific age group. Rate for ages under 20 is based on live births to women under 20 and population of females 15-19. Rate for ages 40 or over is based on live births to women 40 and over and population of females 40-44.

Source: 1970-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

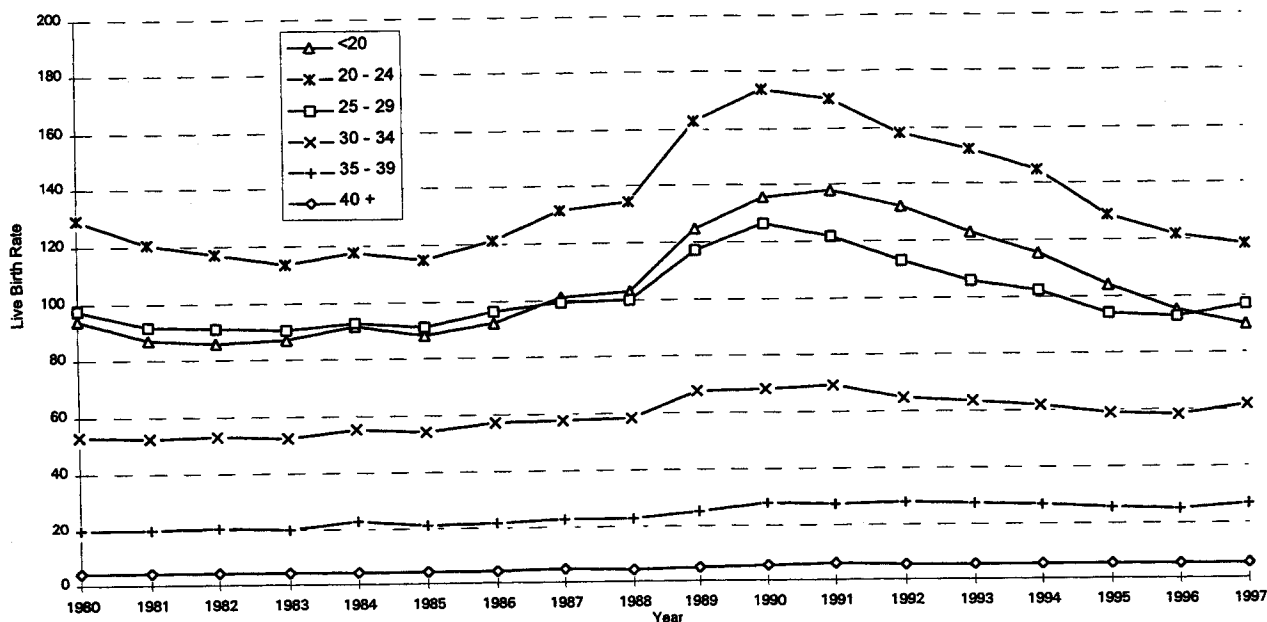
Figure 1.7
Age-Specific Live Birth Rates to White Mothers
Michigan Residents, 1980-1997



Note: Age-specific birth rate is the number of resident live births to women of a specific age group per 1,000 female population of that specific age group. Rate for ages under 20 is based on live births to women under 20 and population of females 15-19. Rate for ages 40 or over is based on live births to women 40 and over and population of females 40-44.

Source: 1980-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

Figure 1.8
Age-Specific Live Birth Rates to Black Mothers
Michigan Residents, 1980-1997

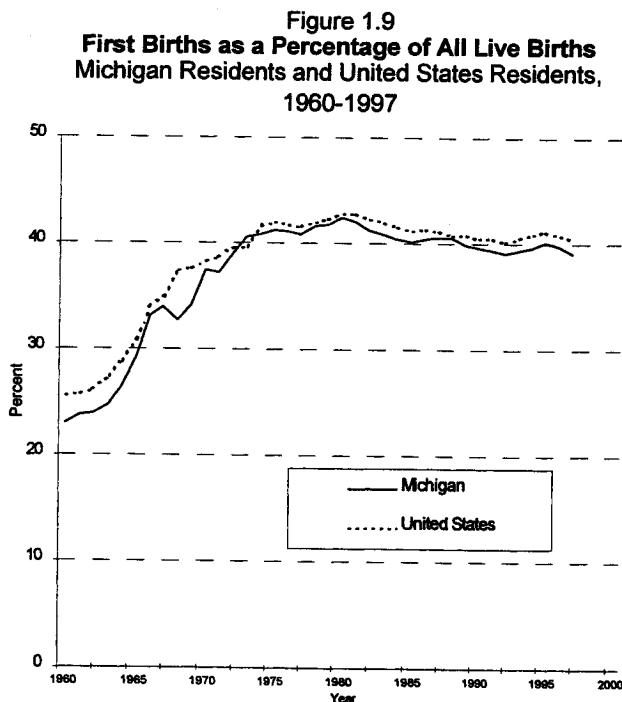


Note: Age-specific birth rate is the number of resident live births to women of a specific age group per 1,000 female population of that specific age group. Rate for ages under 20 is based on live births to women under 20 and population of females 15-19. Rate for ages 40 or over is based on live births to women 40 and over and population of females 40-44.

Source: 1980-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

BIRTH ORDER

About 60 percent of the births in 1997 were to women who had given birth previously; 39.1 percent of the births were to first time mothers. The percent of live births which were first-order births is displayed in Figure 1.9 for Michigan and the United States for the period 1960 to 1997. Between 1960 and 1980, the percent of first-order births increased from 22.9 to 42.4 in Michigan. Then the percentage generally decreased to 39.1 in 1997. Percentages for the United States followed a similar pattern.



Note: 1997 U.S. data are provisional.

Source: 1960-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

INTERPREGNANCY TIME PERIOD

In 1997, women having live births whose most recent prior termination was a miscarriage, fetal death or induced abortion had a median time span of 1 year and 9 months between their previous termination and current birth (Table 1.5). This compares to a median of 2 years 10 months for women having prior live births. A spacing of less than one year was observed for 13 percent of all women reporting their most recent prior pregnancy was a fetal death, but less than two percent of all women reporting their most recent prior pregnancy was a live birth.

Table 1.5
Live Births to Women Reporting Prior
Pregnancy Terminations by Time Span
Between Last and Current Termination and
by Whether Prior Termination Resulted
in a Live Birth or Other Termination
Michigan Residents, 1997

Time Span In Years	Total		Prior Live Birth		Other Prior Termination	
	Number	%	Number	%	Number	%
Total	86,213	100.0	66,447	100.0	19,766	100.0
<1	3,719	4.3	1,117	1.7	2,602	13.2
1 - 2	25,467	29.7	17,180	25.9	8,287	41.9
2 - 3	20,138	23.4	17,203	25.9	2,935	14.8
3 - 5	20,014	23.2	17,367	26.1	2,647	13.4
5 +	16,875	19.6	13,580	20.4	3,295	16.7
Median Time Span	2 yrs., 7 mos.		2 yrs., 10 mos.		1 yrs., 9 mos.	

Note: Terminations with time spans of zero years (*i.e.*, second or later births in plural deliveries) and terminations with unknown time spans are excluded. Other prior terminations include miscarriages, fetal deaths or induced abortions. The methodology for calculating interpregnancy time span was altered slightly in 1984. Hence, median time spans and percentages are not comparable to statistics published prior to 1984.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

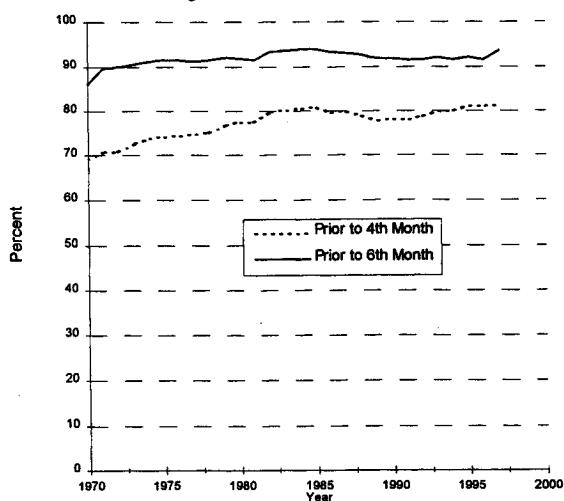
PRENATAL CARE

Trend Pregnant women are encouraged to initiate prenatal care during the first trimester and to receive care on a regular, prescribed basis until delivery occurs. The percentage of women delivering live born infants who initially obtained prenatal care in the first trimester of pregnancy increased steadily between 1970, when the figure was 69 percent and 1985 when it rose to 81 percent (Figure 1.10). Between 1986 and 1997 it fluctuated between 78.0 percent and 81.3 percent.

Race, Ancestry and Age The proportion of live births to women receiving early prenatal care varied considerably by race, ancestry and age of mother (Table 1.6). In 1997, 85.1 percent of infants born to white women were born to mothers who began their prenatal care in the first trimester. Similar percentages of Asian and Pacific Islander mothers and mothers of Arab ancestry initiated care early, 80.9 and 86.2 percent respectively. Lower percentages of black and American Indian mothers and mothers of Hispanic ancestry initiated care early, 64.8 to 72.8 percent.

Eighty-one or more percent of live births to women aged 25 or over were to women who sought care promptly. The proportion fell to 45.3 percent for women under 15 years. About two in three (65.0 percent) infants born to mothers 15-19 years of age were to mothers who received care early.

Figure 1.10
Percent of Women Having Live Births Who Received Care Prior to the 4th Month and 6th Month of Pregnancy Michigan Residents, 1970-1997



Source: 1970-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

Similar patterns in the proportion of mothers initiating care early by age of mother are evident for the race and ancestry groups. However, the proportions were generally highest in each age group for white mothers and mothers of Arab ancestry, and next highest for Asian and Pacific Islander mothers. In each age group lower proportions of American Indian mothers, mothers of Hispanic ancestry and black mothers initiated care early.

Table 1.6
Numbers and Percents of Live Births with Prenatal Care Beginning in the First Trimester by Age, Race and Ancestry of Mother Michigan Residents, 1997

Age of Mother in Years	Race										Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<15	126	45.3	53	58.9	72	40.2	-	-	1	*	2	*	12	50.0
15 - 19	9,984	65.0	7,058	70.8	2,750	54.0	87	60.8	66	64.7	156	76.5	590	60.9
20 - 24	23,512	75.4	18,075	79.4	4,854	64.1	188	73.4	304	71.5	646	85.6	1,122	65.2
25 - 29	33,559	85.2	28,297	88.1	4,095	70.4	141	73.8	849	81.7	780	86.7	1,098	74.8
30 - 34	27,817	87.9	24,273	90.1	2,549	72.0	100	84.7	728	84.7	580	88.8	671	78.2
35 - 39	11,505	86.3	9,930	88.9	1,165	69.8	32	74.4	287	86.4	262	87.0	263	79.7
40+	1,897	81.3	1,619	84.6	205	63.5	6	75.0	53	81.5	74	86.0	54	79.4
Not stated	13	59.1	9	64.3	3	*	-	-	1	*	-	-	-	-
Total	108,413	81.2	89,314	85.1	15,693	64.8	554	72.8	2,289	80.9	2,500	86.2	3,810	70.0

Note: Percents are calculated by using the numbers in Table 1.2 as the denominator. Records of other races or with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

No Prenatal Care In 1997, 1,366 resident live births, or 10.2 of every 1,000, occurred with the mother having had no prenatal care (Table 1.7). This figure includes only those where it was specified on the birth record that the mother received no prenatal care. The comparative statistics were 6.3 in 1985 and 22.6 in 1970.

Those who received no prenatal care were for the most part younger mothers (median age of 24). Also, the lack of prenatal care was disproportionately high among black mothers (25.7 per 1,000 live births).

Table 1.7
Live Births and Birth Ratios with No Prenatal Care by Age and Race of Mother
Michigan Residents, 1997

Age of Mother in Years	Race							
	All Races		White		Black		All Other Races	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
<15	15	54.0	3	*	11	61.5	1	*
15-19	295	19.2	138	13.8	150	29.4	6	23.6
20-24	402	12.9	222	9.7	170	22.4	8	11.6
25-29	308	7.8	168	5.2	129	22.2	10	8.1
30-34	216	6.8	120	4.5	94	26.6	1	*
35-39	103	7.7	45	4.0	56	33.6	1	*
40+	26	11.1	13	6.8	11	34.1	1	*
Total	1,366	10.2	710	6.8	621	25.7	28	7.7
Median Age at Last Birthday	24		24		24		24	

Note: Records with race not stated are included in the "All Races" column only. Ratios are per 1,000 live births to mothers in the specific age and race group (Table 1.2). Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Adequacy of Care A measure of the quality of care developed by Dr. D. W. Kessner combines information on the month prenatal care began, the gestational age at birth and the number of prenatal visits (see Technical Notes). Adequate prenatal care was obtained by mothers of 75.9 percent of the live births (Table 1.8). The proportions of live births to white mothers and mothers of Arab ancestry who received adequate care (80.0 and 82.0 percent) were higher than the corresponding proportions for black and American Indian mothers (59.3 and 65.0 percent) and mothers of Hispanic ancestry (62.7 percent).

Inadequate care was received by the mothers of 8.1 percent of all live births. The proportions of live births to mothers who received inadequate care were

5.7 percent for white mothers, 8.2 to 11.4 percent for Asian and Pacific Islander mothers, American Indian mothers and mothers of Arab and Hispanic ancestry and 17.4 percent for black mothers.

Although the mothers of 81.2 percent of all live births received prenatal care during the first trimester, only 75.9 percent received adequate care as defined by the *Kessner Index*. Overall, this means that of the mothers who initiated prenatal care most promptly, 6.5 percent (7,024 women) did not receive the minimum number of visits they should have received (Tables 1.6 and 1.8).

Considered as a proportion of the live births to mothers who did not receive adequate care (31,412

women), 22.4 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.

Table 1.8
Numbers and Percents of Live Births by Level of Prenatal Care, Race and Ancestry of Mother
Michigan Residents, 1997

Level of Prenatal Care (Kessner Index)	Race										Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Adequate	101,389	75.9	83,950	80.0	14,344	59.3	495	65.0	2,123	75.0	2,378	82.0	3,413	62.7
Intermediate	20,649	15.5	14,545	13.9	5,404	22.3	193	25.4	385	13.6	276	9.5	1,351	24.8
Inadequate	10,763	8.1	6,017	5.7	4,209	17.4	66	8.7	300	10.6	237	8.2	622	11.4
Unknown	748	0.6	468	0.4	244	1.0	7	0.9	21	0.7	10	0.3	54	1.0
Total	133,549	100.0	104,980	100.0	24,201	100.0	761	100.0	2,829	100.0	2,901	100.0	5,440	100.0

Note: 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.) Records of other races or with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

BIRTHWEIGHT

The mean weight for all live births was 3,334 grams or approximately 7 pounds 6 ounces (Table 1.9). The median birthweight was 3,374 grams or about 7 pounds 7 ounces. The median birthweight was lowest for infants born to black mothers, and highest for white and American Indian mothers. The medians were somewhat lower for mothers of Arab and Hispanic ancestry. The median birthweight for infants born to Asian and Pacific Islander mothers was about 193 grams lower than the medians for infants born to white and American Indian mothers

and 62 grams higher than the median for infants born to black mothers.

Infants born to black mothers had a higher proportion of birthweights with extremely low birthweight below 750 grams (1.3 percent). Other race and ancestry groups ranged from 0.2 to 0.4 percent of the births below 750 grams. Infants born with this extremely low birthweight have very high mortality rates (approximately 65 percent mortality).

Table 1.9
Numbers and Percents of Live Births by Birthweight, Race and Ancestry of Mother
Michigan Residents, 1997

Weight at Birth in Grams	Race										Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<750	684	0.5	356	0.3	307	1.3	3	*	6	0.2	12	0.4	18	0.3
750 - 1,499	1,411	1.1	881	0.8	489	2.0	13	1.7	22	0.8	20	0.7	46	0.8
1,500 - 2,499	8,240	6.2	5,551	5.3	2,407	9.9	30	3.9	188	6.6	151	5.2	301	5.5
2,500+	122,928	92.0	98,005	93.4	20,916	86.4	715	94.0	2,607	92.2	2,712	93.5	5,066	93.1
Not stated	286	0.2	187	0.2	82	0.3	-	-	6	0.2	6	0.2	9	0.2
Total	133,549	100.0	104,980	100.0	24,201	100.0	761	100.0	2,829	100.0	2,901	100.0	5,440	100.0
Mean weight	3,334		3,391		3,102		3,394		3,226		3,305		3,333	
Median weight	3,374		3,430		3,175		3,430		3,237		3,345		3,353	

Note: Records of other races or with race not stated are included only in the "All Races" column. In order to conform to national standards, the definition of low birthweight was changed in 1984 to less than 2,500 grams. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

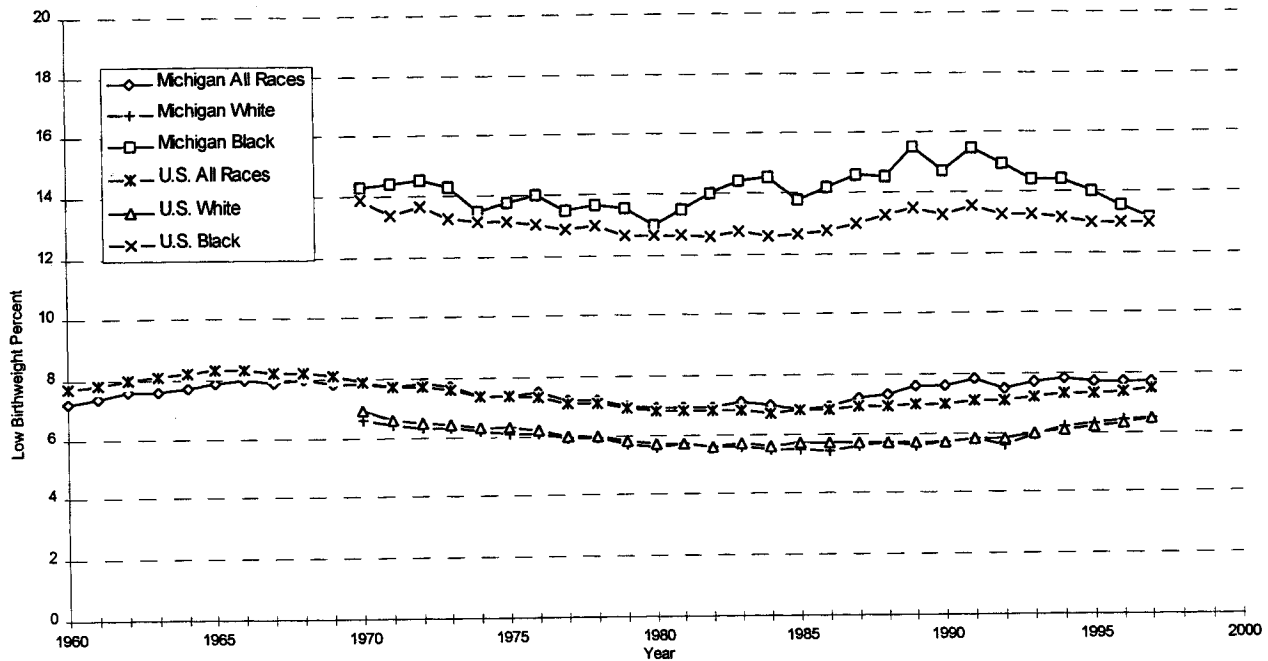
Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Low Birthweight A subgroup of major importance when analyzing historical birthweight 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.

residents over the last thirty-seven years. In 1960 7.2 percent of the live births in Michigan had low birthweight. Between 1960 and 1968, the percentage increased, reaching a high for the 37 year period in both 1966 and 1968 (8.0). The percentage generally declined until 1985 when the percent was 6.8, the lowest rate since 1982. It rose to 7.7 in 1997. The pattern for the United States was similar. By 1997 the low birthweight percentage for the nation had increased to 7.5 percent.

Figure 1.11 displays the percent of low birthweight infants born to Michigan and the United States

Figure 1.11
Percent of Low Birthweight Live Births by Race
Michigan and United States Residents, 1960-1997



Note: Low birthweight data are not available by race prior to 1970. Low birthweight for 1960-1969 is 2500 grams or less and for 1970-current low birthweight is less than 2500 grams. 1997 U.S. data are provisional.

Source: 1960-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH
 Monthly Vital Statistics Report, National Center for Health Statistics

The low birthweight percentage for infants of black mothers was 13.2 percent compared with 6.0 to 6.5 percent for infants born to mothers of other races and ancestry groups (Table 1.10).

The low birthweight percent varied by adequacy of prenatal care as indicated by the *Kessner Index*. For the race and ancestry groups, the low birthweight percentages were between 1.4 and 1.9 times higher for infants born to mothers with inadequate care than to mothers with adequate prenatal care.

At birth, 13.2 percent of the infants born to black women weighed less than 2,500 grams. Of infants born to black women with adequate care, a lower percentage (11.4) weighed less than 2,500 grams. The low birthweight percentage for infants born to black women with adequate care was higher than the percentage for infants born to women of other race and ancestry groups at all levels of prenatal care. The low birthweight percentage was 1.6 to 2.4 times higher for infants born to black women with adequate care than for corresponding women of almost all other race and ancestry groups.

Table 1.10
Numbers and Percents of Low Birthweight Live Births
by Level of Prenatal Care, Race and Ancestry of Mother
Michigan Residents, 1997

Level of Prenatal Care (Kessner Index)	Race										Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Adequate	6,836	6.7	4,970	5.9	1,639	11.4	24	4.8	155	7.3	146	6.1	209	6.1
Intermediate	1,884	9.1	1,092	7.5	734	13.6	16	8.3	28	7.3	16	5.8	90	6.7
Inadequate	1,524	14.2	675	11.2	792	18.8	6	9.1	31	10.3	20	8.4	63	10.1
Total	10,335	7.7	6,788	6.5	3,203	13.2	46	6.0	216	7.6	183	6.3	365	6.7

Note: Records with unknown level of care are included only in the "Total" row. Percents are calculated by using the numbers in Table 1.8 as the denominator. 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). Records of other races or with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

CONGENITAL ANOMALIES

One or more congenital anomalies were reported on the birth certificate for 1,503 of the 133,549 resident live births in 1997 (Table 1.11). This translates to a rate of 112.5 per 10,000 live births.

The method of reporting congenital anomalies on the birth record was altered with the 1989 birth certificate. The 1989 and later rates, based on check-box format reporting, are not comparable to rates obtained in previous years by literal entries.

While the check-box reporting format may help reduce the level of under reporting of congenital anomalies, 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. A more complete reporting of congenital anomalies is provided by the Birth Defects Registry in the Division for Vital Records and Health Statistics.

The congenital anomaly rate of 148.8 per 10,000 live births to black mothers was 43 percent higher than the rate of 104.1 for live births to white mothers and 15 percent higher than the rate of 129.5 for live births to mothers of races other than black or white.

The rates for all races varied with the age of the mother. Rates generally were higher for mothers over 35 years of age.

Table 1.11
Live Births with Congenital Anomalies Reported and Congenital Anomaly Rates
by Age and Race of Mother
Michigan Residents, 1997

Age of Mother in Years	Race							
	All Races		White		Black		All Other Races	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<15	3	*	-	-	3	*	-	-
15-19	182	118.5	105	105.4	73	143.2	4	*
20-24	345	110.7	223	97.9	115	151.9	7	101.6
25-29	424	107.6	318	99.0	87	149.6	17	136.9
30-34	348	109.9	282	104.7	53	149.8	13	132.2
35-39	172	129.1	140	125.4	26	155.8	5	*
40+	29	124.3	25	130.6	3	*	1	*
Total	1,503	112.5	1,093	104.1	360	148.8	47	129.5
Median age at last birthday	27		28		24		28	

Note: Records with race not stated are included in the "All Races" column only. Rates are number of live births with congenital anomalies reported per 10,000 live births (Table 1.2). Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

MEDICAL FACTORS ASSOCIATED WITH DELIVERY AND/OR LABOR

Complications of Pregnancy There were 38,600 deliveries (28.9 percent) reported with one or more complications of labor and/or delivery in 1997 (Table 1.12). Among the most commonly reported complications were moderate/heavy meconium (6,728 cases), premature rupture of membranes (5,838 cases) breech/malpresentation of fetus (5,758 cases), fetal distress (5,390 cases), and dysfunctional labor (4,704 cases).

The proportions of live births for which there was at least one complication were relatively similar for

women of different races and ancestry groups (Table 1.12). The types of complications which were most common were also very similar among mothers of different race and ancestry groups, although the exact ordering by frequency of occurrence varied. The rates for complications which are related to the mechanics of labor, *i.e.*, breech/malpresentation, dysfunctional labor, precipitate labor and cephalopelvic disproportion were less frequent for births to black women than to white women.

**Table 1.12
Numbers and Percents of Live Births by
Complications of Labor/Delivery, Race and Ancestry of Mother
Michigan Residents, 1997**

Complications of Labor/Delivery	Race													
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Meconium, moderate/heavy	6,728	5.0	4,578	4.4	1,935	8.0	34	4.5	147	5.2	130	4.5	351	6.5
Premature rupture of membranes (>12 hours)	5,838	4.4	4,560	4.3	1,036	4.3	32	4.2	172	6.1	93	3.2	201	3.7
Breech/malpresentation	5,758	4.3	4,796	4.6	811	3.4	29	3.8	95	3.4	95	3.3	255	4.7
Fetal distress	5,390	4.0	4,265	4.1	893	3.7	34	4.5	145	5.1	102	3.5	211	3.9
Dysfunctional labor	4,704	3.5	3,877	3.7	611	2.5	36	4.7	140	4.9	72	2.5	188	3.5
Precipitate labor (<3 hours)	3,830	2.9	3,145	3.0	561	2.3	21	2.8	77	2.7	109	3.8	138	2.5
Cephalopelvic disproportion	2,540	1.9	2,219	2.1	227	0.9	26	3.4	58	2.1	22	0.8	114	2.1
Prolonged labor	985	0.7	843	0.8	113	0.5	8	1.1	18	0.6	9	0.3	45	0.8
At least one complication	38,600	28.9	30,395	29.0	6,838	28.3	227	29.8	895	31.6	673	23.2	1,590	29.2
Total live births	133,549	100.0	104,980	100.0	24,201	100.0	761	100.0	2,829	100.0	2,901	100.0	5,440	100.0

Note: Records of other race or with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Maternal Risk Factors Women who smoked while pregnant accounted for 17.4 percent (23,218) of the live births in 1997 (Table 1.13). These data are consistent with statewide sample survey data. The reported percentage of live births to mothers who smoked while pregnant was highest for American Indian mothers (36.0 percent), was lower and relatively similar for white and black mothers (18.1 and 15.9 percent, respectively). Fewer mothers of Hispanic ancestry reported smoking during pregnancy (9.2 percent) than white or black mothers. Asian and Pacific Islander mothers and mothers of Arab ancestry had the lowest percentages of reported smoking during their pregnancy (2.7 and 4.3 percent respectively).

Only 1,791 (1.3 percent) of the 1997 birth certificates indicated the mother drank alcohol while pregnant. Based on other studies it is generally believed that reported numbers of mothers who drank while pregnant as obtained from birth certificates, underreport the frequency of this risk factor.

A weight gain during pregnancy of less than sixteen pounds was reported for mothers of 10.4 percent (13,951) of the live births. The percentage for American Indian mothers (14.3) was higher than any other race/ancestry category.

Table 1.13
Numbers and Percents of Live Births by Maternal Risk Factors, Race and Ancestry of Mother Michigan Residents, 1997

Maternal Risk Factors	Race										Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Smoked tobacco while pregnant	23,218	17.4	18,962	18.1	3,848	15.9	274	36.0	76	2.7	126	4.3	502	9.2
Drank alcohol while pregnant	1,791	1.3	1,272	1.2	475	2.0	29	3.8	9	0.3	8	0.3	43	0.8
Weight gain less than 16 pounds while pregnant	13,951	10.4	10,133	9.7	3,339	13.8	109	14.3	268	9.5	228	7.9	758	13.9
Total live births	133,549	100.0	104,980	100.0	24,201	100.0	761	100.0	2,829	100.0	2,901	100.0	5,440	100.0

Note: Records of other race or with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Medical Risk Factors For 23.6 percent (31,523) of the 133,549 resident live births occurring in 1997, the mother had at least one medically relevant risk factor (Table 1.14). The most commonly specified medical risk factor was pregnancy-related hypertension which occurred in mothers of 3.7 percent (4,880) of the live births. The next most common maternal medical risk factors were diabetes and hydramnios/ogligohydramnios which occurred in mothers of 2.7 percent (3,600) and 1.7 percent (2,311) of the live births. Drug use was reported on one percent of all live birth records.

associated hypertension and diabetes were the most common risk factors for white, American Indian and Hispanic mothers; pregnancy-associated hypertension and hydramnios/ogligohydramnios were the most common for black mothers; diabetes was most common for Asian and Pacific Islander mothers and for mothers of Arab ancestry.

The most common maternal medical risk factors varied among race and ancestry groups. Pregnancy-

The percent of births born to women with pregnancy-associated hypertension, diabetes, previous large or small infants and uterine bleeding were lower for births to black mothers than white mothers. The percent of births to women using drugs was highest for births to black mothers.

Table 1.14
Numbers and Percents of Live Births by Medical Risk Factors, Race and Ancestry of Mother
Michigan Residents, 1997

Risk Factors	Race													
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Hypertension, pregnancy-associated	4,880	3.7	3,990	3.8	772	3.2	32	4.2	55	1.9	52	1.8	174	3.2
Diabetes	3,600	2.7	2,895	2.8	523	2.2	33	4.3	125	4.4	71	2.4	196	3.6
Hydramnios/ogligohydramnios	2,311	1.7	1,483	1.4	756	3.1	11	1.4	52	1.8	52	1.8	103	1.9
Anemia (Hct.30/Hgb.10)	2,154	1.6	1,475	1.4	589	2.4	13	1.7	51	1.8	40	1.4	117	2.2
Previous infant 4000+ grams	1,888	1.4	1,791	1.7	58	0.2	15	2.0	17	0.6	21	0.7	52	1.0
Uterine bleeding	1,741	1.3	1,484	1.4	190	0.8	7	0.9	42	1.5	48	1.7	50	0.9
Lung disease	1,721	1.3	1,113	1.1	566	2.3	12	1.6	20	0.7	10	0.3	63	1.2
Previous preterm or small-for-gestational age infant	1,508	1.1	1,289	1.2	173	0.7	10	1.3	26	0.9	29	1.0	49	0.9
Herpes	1,403	1.1	1,036	1.0	339	1.4	7	0.9	12	0.4	9	0.3	34	0.6
RH Sensitive	1,324	1.0	1,171	1.1	127	0.5	4	*	16	0.6	18	0.6	27	0.5
Drug use	1,287	1.0	599	0.6	666	2.8	13	1.7	3	*	4	*	34	0.6
Hypertension, chronic	1,028	0.8	729	0.7	280	1.2	5	*	7	0.2	7	0.2	15	0.3
At least one medical risk	31,523	23.6	23,715	22.6	6,853	28.3	211	27.7	570	20.1	434	15.0	1,189	21.9
Total live births	133,549	100.0	104,980	100.0	24,201	100.0	761	100.0	2,829	100.0	2,901	100.0	5,440	100.0

Note: Records of other race or with race not stated are included only in the "All Races" column. Births with at least one medical risk does not equal the sum of all the risk factors specified because mothers may have multiple risk factors. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Method of Delivery Vaginal delivery was the most common method of delivery in 1997, accounting for 79.4 percent of the live births (Table 1.15). A national goal is to have a vaginal delivery for at least 35 percent of the mothers with a previous C-section by the year 2000. In 1997 about 27 percent of Michigan mothers with a previous C-section had a vaginal delivery.

Lowering C-section rates to no more than 15 per 100 deliveries including no more than 12 primary C-sections is a national goal for the year 2000. In 1989 the first year comparable data were available in Michigan, 13.6 percent of the deliveries were by

primary C-section and 9.1 percent were repeat C-section. By 1997, primary C-sections were performed in 12.6 percent of the live births and repeat C-sections were performed in 7.4 percent of the live births for a total of 20.0 percent of all deliveries performed by C-section.

Mothers of Arab and Hispanic ancestry had lower proportions of live births delivered by primary C-section. These groups have achieved the national goal for primary C-sections. White, black, American Indian and Asian and Pacific Islander mothers had somewhat higher proportions of live births delivered by primary C-section.

Table 1.15
Numbers and Percents of Live Births by Method of Delivery, Race and Ancestry of Mother
Michigan Residents, 1997

Procedures During and Method of Delivery	Race										Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Procedures														
Vacuum	6,099	4.6	5,277	5.0	556	2.3	27	3.5	205	7.2	102	3.5	243	4.5
Forceps	2,887	2.2	2,276	2.2	507	2.1	7	0.9	73	2.6	67	2.3	120	2.2
Method														
Vaginal birth	105,998	79.4	83,149	79.2	19,346	79.9	585	76.9	2,289	80.9	2,456	84.7	4,337	79.7
Vaginal birth after previous C-section	3,695	2.8	3,017	2.9	587	2.4	21	2.8	63	2.2	52	1.8	175	3.2
Primary C-section	16,786	12.6	13,111	12.5	3,117	12.9	102	13.4	361	12.8	272	9.4	655	12.0
Repeat C-section	9,941	7.4	7,999	7.6	1,675	6.9	69	9.1	162	5.7	148	5.1	422	7.8
Unknown method	824	0.6	721	0.7	63	0.3	5	*	17	0.6	25	0.9	26	0.5
Total live births	133,549	100.0	104,980	100.0	24,201	100.0	761	100.0	2,829	100.0	2,901	100.0	5,440	100.0

Note: Records of other race or with race not stated are included only in the "All Races" column. Vaginal birth method includes "Vaginal birth after previous C-section". Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Abnormal Conditions at Birth In 1997, 11,420 babies were born with at least one recorded abnormal condition at birth (Table 1.16). The highest percentage for a specified abnormal condition was associated with live born infants who received assisted ventilation for less than 30 minutes (1.9 percent). The next

two most frequent abnormal conditions were a five minute Apgar score under 7 and hyaline membrane disease/RDS (Respiratory Distress Syndrome), respectively. These three conditions, were generally also the most frequently seen for each race and ancestry group.

Table 1.16
Numbers and Percents of Live Births with Abnormal Conditions
by Race and Ancestry of Mother
Michigan Residents, 1997

Abnormal Conditions	Race												Ancestry			
	All Races		White		Black		Amer. Indian		Asian & P.I.		Arab		Hispanic			
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%		
Assisted ventilation <30 minutes	2,564	1.9	1,955	1.9	543	2.2	11	1.4	51	1.8	32	1.1	69	1.3		
5 minute Apgar score <7	1,688	1.3	1,140	1.1	495	2.0	8	1.1	27	1.0	25	0.9	58	1.1		
Hyaline membrane disease /RDS	1,349	1.0	971	0.9	341	1.4	8	1.1	20	0.7	17	0.6	63	1.2		
Assisted ventilation >30 minutes	1,229	0.9	944	0.9	258	1.1	8	1.1	16	0.6	12	0.4	43	0.8		
Birth injury	485	0.4	435	0.4	34	0.1	4	*	12	0.4	7	0.2	16	0.3		
At least one condition	11,420	8.6	8,826	8.4	2,269	9.4	60	7.9	218	7.7	184	6.3	464	8.5		
Total live births	133,549		104,980		24,201		761		2,829		2,901		5,440			

Note: Records of other race or with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Multiple Births Of the 133,549 Michigan resident births in 1997, there were 1,921 sets of twins, 72 sets of triplets and 9 sets of multiple births of 4 or more born. This compares to 1,495 sets of twins, 23 sets of triplets and 1 set of multiple births of 4 or more born in 1980 from a total of 145,162 births (Table 1.17).

Table 1.17
Live Births by Plurality
Michigan Residents, 1980 - 1997

Year	Live Births	Sets of Twins	Sets of Triplets	Sets of 4 or More
1980	145,162	1,495	23	1
1981	140,579	1,426	25	1
1982	137,950	1,377	16	-
1983	133,026	1,415	14	-
1984	135,782	1,413	19	-
1985	138,052	1,506	21	1
1986	137,626	1,555	27	1
1987	140,466	1,549	27	2
1988	139,635	1,584	30	2
1989	148,164	1,858	42	8
1990	153,080	1,897	41	1
1991	149,478	1,933	38	1
1992	143,827	1,842	43	2
1993	139,560	1,748	60	2
1994	137,844	1,901	69	6
1995	134,169	1,795	62	1
1996	133,231	1,809	77	12
1997	133,549	1,921	72	9

Source: 1980-1997 Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

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 boundaries, is collected in order to obtain the full scope of activity for the state population.

Resident Births In 1997 1,489 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 1.1 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 1.18 shows that births in the four border states comprise 92.6 percent of all resident live births that occurred out of state. Live births to Michigan residents occurred in 35 of the 50 states in 1997.

Non-resident Births The number of nonresident live births that occurred in Michigan in 1997 was 458. 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. Infants born in Michigan to mothers from the four border states and Canada comprised 81.8 percent of these events, as shown in Table 1.18. There were live births in Michigan to residents of 29 states, and at least 11 foreign countries.

Table 1.18
Michigan Live Births
Occurring Outside Michigan to Michigan Residents by Place of Occurrence
and Occurring in Michigan to Non-Michigan Residents by Place of Residence, 1997

Geographic Area	Live Births to Residents Occurring Outside Michigan		Live Births to Non-Residents Occurring in Michigan	
	Number	Percent	Number	Percent
Total	1,489	100.0	458	100.0
Ohio	686	46.1	50	10.9
Indiana	517	34.7	61	13.3
Wisconsin	148	9.9	152	33.2
Illinois	28	1.9	19	4.1
Minnesota	13	0.9	1	*
Florida	11	0.7	13	2.8
Texas	9	0.6	12	2.6
New York	7	0.5	4	*
Arizona	6	0.4	1	*
Kentucky	5	*	1	*
Maryland	5	*	2	*
Alabama	4	*	-	-
Georgia	4	*	-	-
Louisiana	4	*	1	*
Tennessee	4	*	-	-
California	3	*	7	1.5
Missouri	3	*	1	*
North Carolina	3	*	3	*
Pennsylvania	3	*	2	*
South Carolina	3	*	-	-
Washington	3	*	3	*
West Virginia	3	*	-	-
Other States	17	1.1	15	3.3
Canada	-	-	93	20.3
Other Countries	-	-	12	2.6
Unknown	-	-	5	*

Note: Asterisk (*) indicates that data do not meet standards of reliability or precision.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

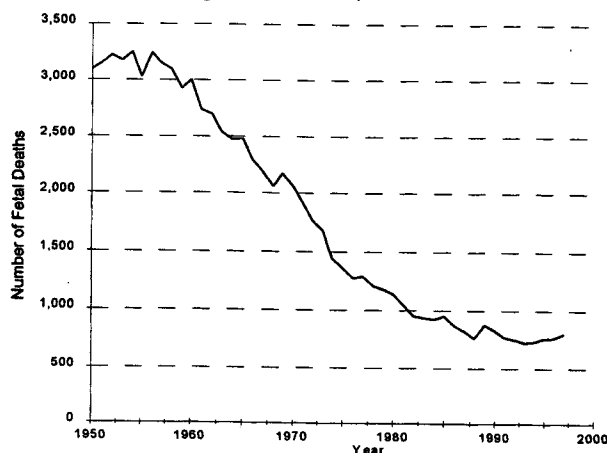
FETAL DEATHS

The requirements for reporting of fetal death information has varied over time in Michigan. Reports of fetal deaths prior to 1927 were received in conjunction with the reporting of live births. The statute required reporting of all births with no distinctions made as to whether the child was live born or stillborn. There were also no specific definitions when a child should be considered stillborn nor when a stillborn should be reported. In 1927, legislation was enacted to require reporting of all stillborns defined as follows: "A stillbirth shall mean a child in which there is no movement of voluntary muscles or effort to breathe after birth. Both a birth and death certificate and a burial or removal permit shall be required for each stillborn child which has advanced to the fifth month of uterogestation." This definition and reporting procedure remained in effect until 1952 when a separate certificate of stillbirth was initiated by Act 66 of 1952. The definition for when to report, while similar, was changed to read as follows: "Death prior to the complete extraction from its mother of a

product of conception, having passed through at least the 20th week of gestation; the fetus shows no signs of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles." This procedure currently remains in effect, though the definition of a fetal death was changed again in 1989 to the following: "Fetal death means the death of a fetus which has completed at least 20 weeks of gestation or weighs at least 400 grams."

The number of fetal deaths in Michigan has declined from 3,095 in 1950 to 798 in 1997 (Figure 1.12). The fetal death ratio has also declined, from 19.3 per 1,000 live births in 1950 to 5.9 in 1997. The fetal death ratio for Michigan has been lower than the national fetal death ratio since 1950 (Figure 1.13). In 1996, the Michigan ratio of 5.7 was 17 percent lower than the national rate of 6.9 (Table 1.19). It should be noted that the definition of a fetal death used in Michigan differs slightly from that used in most states.

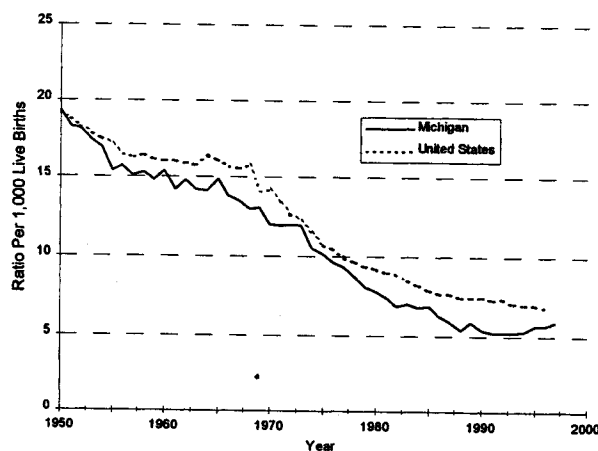
Figure 1.12
Fetal Deaths
Michigan Residents, 1950-1997



Note: A fetal death is death prior to the complete expulsion or extraction from its mother, having passed through at least the 20th week of gestation or weighing 400 grams. Fetal death does not include induced terminations.

Source: 1950-1997 Michigan Resident Fetal Death Files, Division for Vital Records and Health Statistics, MDCH

Figure 1.13
Fetal Death Ratios
Michigan Residents, 1950-1997 and
United States Residents, 1950-1996



Note: A fetal death is death prior to the complete expulsion or extraction from its mother, having passed through at least the 20th week of gestation or weighing 400 grams. Fetal death does not include induced terminations. 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 death regardless of period of gestation.
2. 1942 to 1968; fetal deaths with gestational 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.

Source: 1950-1997 Michigan Resident Fetal Death Files, Division for Vital Records and Health Statistics, MDCH

Table 1.19
Fetal Deaths and Fetal Death Ratios
 Michigan and United States Residents
 Selected Years, 1900-1997

United States		Year	Michigan	
Fetal Deaths	Fetal Death Ratio		Fetal Deaths	Fetal Death Ratio
-	-	1900	1,325	30.3
-	-	1910	2,559	39.9
70,010	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	1960	3,008	15.4
52,961	14.2	1970	2,060	12.0
33,796	10.7	1975	1,356	10.1
33,353	9.2	1980	1,135	7.8
31,386	7.5	1990	830	5.4
30,160	7.3	1991	775	5.2
30,256	7.4	1992	755	5.2
28,766	7.1	1993	726	5.2
27,937	7.0	1994	731	5.3
27,294	7.0	1995	767	5.7
27,069	6.9	1996	759	5.7
---	---	1997	798	5.9

Note: A fetal death is death prior to the complete expulsion or extraction from its mother, having passed through at least the 20th week of gestation or weighing 400 grams. Fetal death does not include induced terminations. United States data for 1922 is used for 1920.

Source: 1900-1997 Michigan Resident Fetal Death Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

CAUSES OF FETAL DEATH

A classification of fetal deaths by underlying cause of death is contained in Table 1.20. In 1997, 355 of the total 798 deaths were assigned to the category of "other and ill-defined conditions originating in the perinatal period". More than a third (37 percent) of the remaining fetal deaths for which a specific cause was stated were attributed to complications of 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.

Third 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.

Table 1.20
Fetal Deaths and Fetal Death Ratios by Underlying Cause of Death
 Michigan Residents, 1997

Cause of Death (ICD-9 codes)	Frequency	Ratio
Other and ill-defined conditions originating in the perinatal period (779)	355	265.8
Fetus or newborn affected by complications of placenta, cord and membranes (762)	164	122.8
Fetus or newborn affected by maternal complications of pregnancy (761)	82	61.4
Fetus or newborn affected by maternal conditions which may be unrelated to present pregnancy (760)	29	21.7
All congenital anomalies combined (740-759)	88	65.9
All other causes	80	59.9
Total	798	597.5

Note: A fetal death is death prior to the complete expulsion or extraction from its mother, having passed through at least the 20th week of gestation or weighing 400 grams. Fetal death does not include induced terminations. ICD refers to codes defined in Ninth Revision of the International Classification of Diseases, WHO. Ratios are the number of resident fetal deaths per 100,000 resident live births.

Source: 1997 Michigan Resident Fetal Death Files, Division for Vital Records and Health Statistics, MDCH

MORTALITY

SECTION II



MORTALITY

OVERVIEW

In 1997 there were 82,994 deaths recorded for Michigan residents, 502 fewer than in the previous year. The crude death rate per 1,000 population was 8.5, down from 8.6 for the first time since 1993 (Table 2.1). The age-adjusted death rate decreased in 1997, being 2 percent lower than the age-adjusted rate for 1996. The age-adjusted rate serves as a better measure for comparing mortality over time 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.

There were 1,085 infant deaths in 1997, 13 more than in 1996. The 1997 infant death rate of 8.1 was slightly higher than the 1996 rate of 8.0, while the neonatal death rate rose from 5.3 to 5.6 in 1997 (6 percent increase). The infant mortality rate has decreased more in the seven years since 1990 than in the 1950s, 1960s and 1980s. Only the decade between 1970 and 1980 had a larger decrease (37 percent) than has been observed during the last six years (24 percent).

The median age at death for Michigan residents in 1997 was 76 years. Females dying in 1997 had a median age at death of 79 years, six years higher than the median age at death of 73 years for males.

The leading cause of death in 1997 was diseases of the heart, accounting for 27,150 deaths or an average of 74 deaths per day. There were 19,504 deaths due to cancer, the second leading cause of death in 1997, or an average of 53 deaths per day. The other leading causes of death were cerebrovascular diseases (stroke), chronic obstructive pulmonary diseases, unintentional injuries, pneumonia and influenza, diabetes mellitus, kidney disease, suicide and chronic liver disease and cirrhosis.

An Overview, 1997

Resident Deaths	82,994
Crude Death Rate (deaths per 1,000 population)	8.5
Infant Deaths	1,085
Infant Death Rate (infant deaths per 1,000 live births)	8.1
Neonatal Deaths	748
Neonatal Death Rate (neonatal deaths per 1,000 live births)	5.6
Perinatal Deaths	1,385
Perinatal Death Rate (perinatal deaths per 1,000 total births)	10.3
Maternal Deaths	12
Maternal Death Rate (maternal deaths per 100,000 live births)	9.0
Median Age at Death	76
Median Age at Death for Males	73
Median Age at Death for Females	79
Deaths from Heart Disease per Day	74
Deaths from Cancer per Day	53
Deaths from Stroke per Day	16
Deaths from C.O.P.D. per Day	10

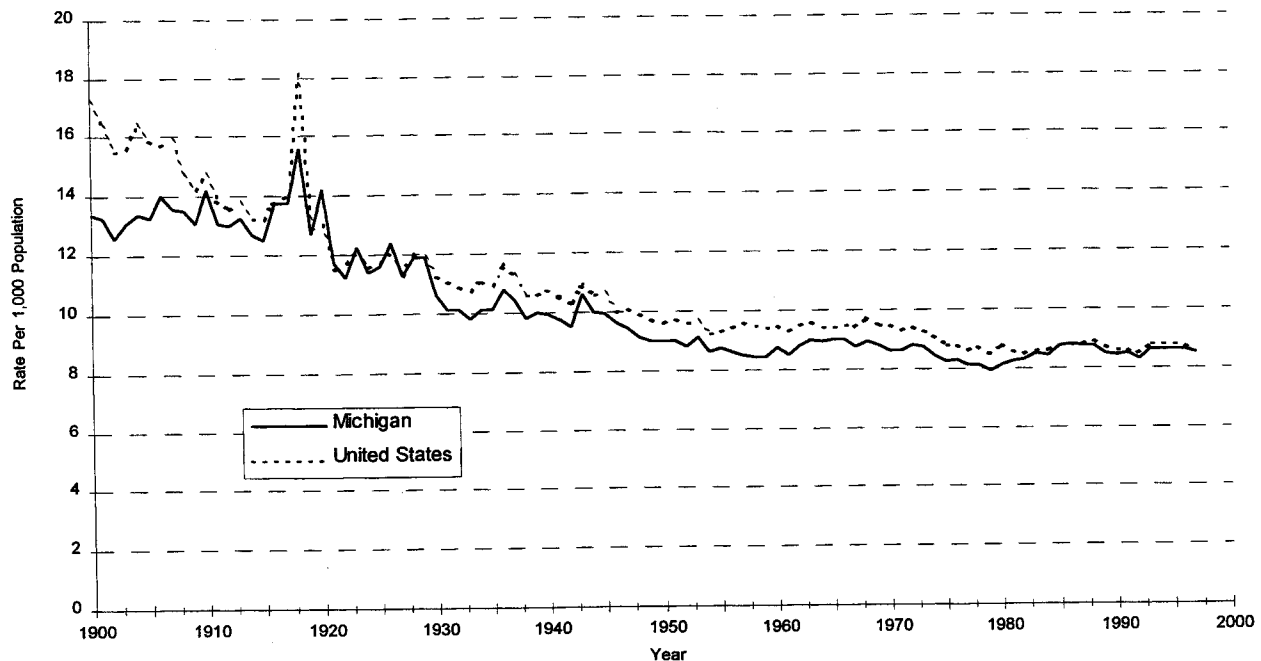
Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

TRENDS IN MICHIGAN

Between 1900 and 1997 the number of deaths occurring to Michigan residents increased from 32,453 to 82,994. 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 1996 was the greatest number of resident deaths ever recorded in Michigan (Table 4.1).

Although the total number of deaths increased between 1900 and 1997, the increase is due to an aging and increasing population. The crude death rate decreased from 13.4 (per 1,000 population) in 1900 to 8.5 in 1997. 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).

Figure 2.1
Crude Death Rates
Michigan and United States Residents, 1900 - 1997



Note: United States rates for 1971-1979 have been revised using population estimates based on the 1980 Census enumeration. 1997 U.S. data are provisional.

Source: 1900-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Reports, National Center for Health Statistics

**MICHIGAN AND UNITED STATES
MORTALITY**

A comparison of the number of deaths and crude death rates for Michigan and the United States for the period 1970-1997 is presented in Table 2.1 and Figure 2.1. Between 1970 and 1984, the Michigan rates were below the United States rates. Since 1985 Michigan and United States rates have been equal or close. The Michigan rates decreased only slightly between 1970 and 1996 (from 8.6 per 1,000 population to 8.5), while national rates decreased nearly 10 percent (from 9.5 per 1,000 population to 8.6) in the same time period

Table 2.1
Number of Deaths and Crude Death Rates
Michigan and United States Residents, 1970 - 1997

United States		Year	Michigan	
Number	Rate		Number	Rate
1,921,031	9.5	1970	76,321	8.6
1,989,841	8.8	1980	74,991	8.1
2,148,463	8.6	1990	78,501	8.4
2,169,518	8.6	1991	79,738	8.5
2,175,613	8.5	1992	78,916	8.3
2,268,553	8.8	1993	82,286	8.6
2,278,994	8.8	1994	82,644	8.6
2,312,132	8.8	1995	83,405	8.6
2,314,690	8.7	1996	83,496	8.6
2,314,729	8.6	1997	82,994	8.5

Note: Crude death rates are deaths per 1,000 population. 1997 U.S. data are provisional.

Source: 1970-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Reports, National Center for Health Statistics

MORTALITY DIFFERENCES BY SEX AND RACE

During the period 1970-1997 the age-adjusted death rates for Michigan males and females were usually slightly higher than the national rates (Figure 2.2).

In 1970, the age-adjusted death rate for males was about 75 percent higher than for females in both Michigan and the United States. The difference has decreased to about 56 percent in 1997.

The national and Michigan age-adjusted death rates displayed in Figure 2.3 were similar for white males until 1988. Since 1989 the rates for Michigan white males have been slightly lower than the national white male rates. In contrast, the Michigan white female rates were slightly higher than the national white female rates during this 27 year period.

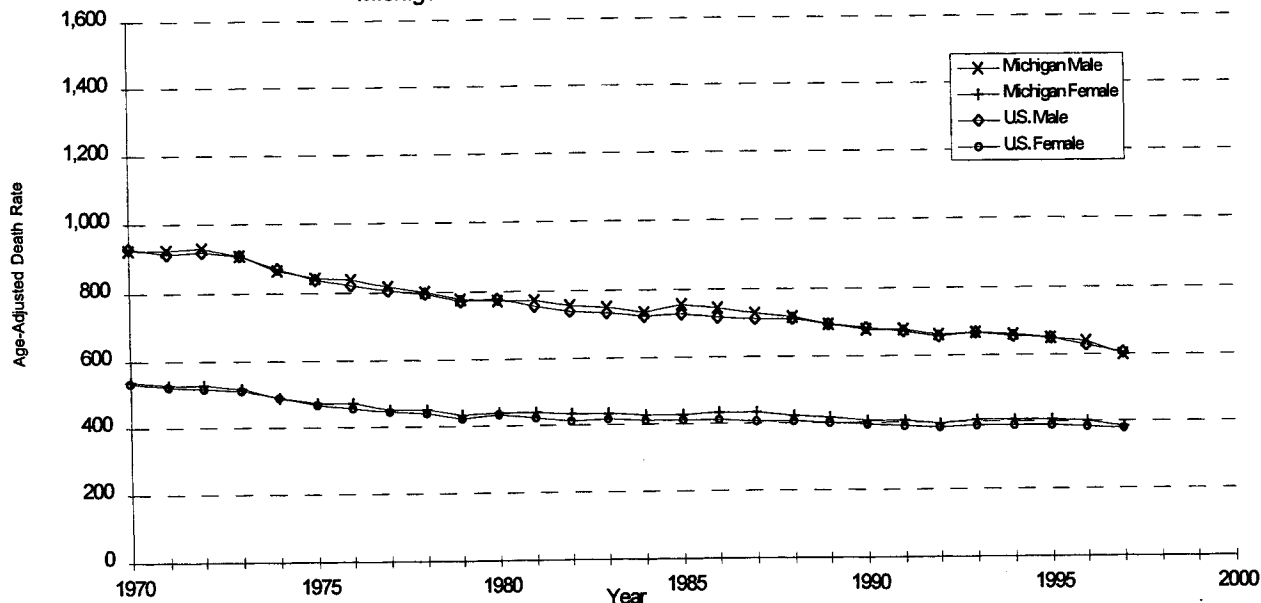
During the period 1970-1997, Michigan age-adjusted death rates for black males were higher than their national counterparts (Figure 2.4). The rates for Michigan black females were slightly lower than the

national rates prior to 1981, were higher from 1981 to 1995, and were again slightly lower in 1996 and 1997.

Mortality rate disparities between the black male and white male population increased during the last twenty-seven years. Michigan age-adjusted rates for black males were 43 percent higher than their white counterparts in 1970. By 1997 black male rates were 63 percent higher than rates for their white counterparts.

Steady declines have generally occurred since 1970 both in Michigan and the United States in age-adjusted death rates in each race-sex group. For Michigan black persons, male and female age-adjusted rates declined 29 and 32 percent, respectively. The United States rates for these groups declined by 32 and 34 percent, respectively, during this period. The Michigan rates for white males and females declined 37 and 30 percent, while national rates dropped 36 and 29 percent, respectively.

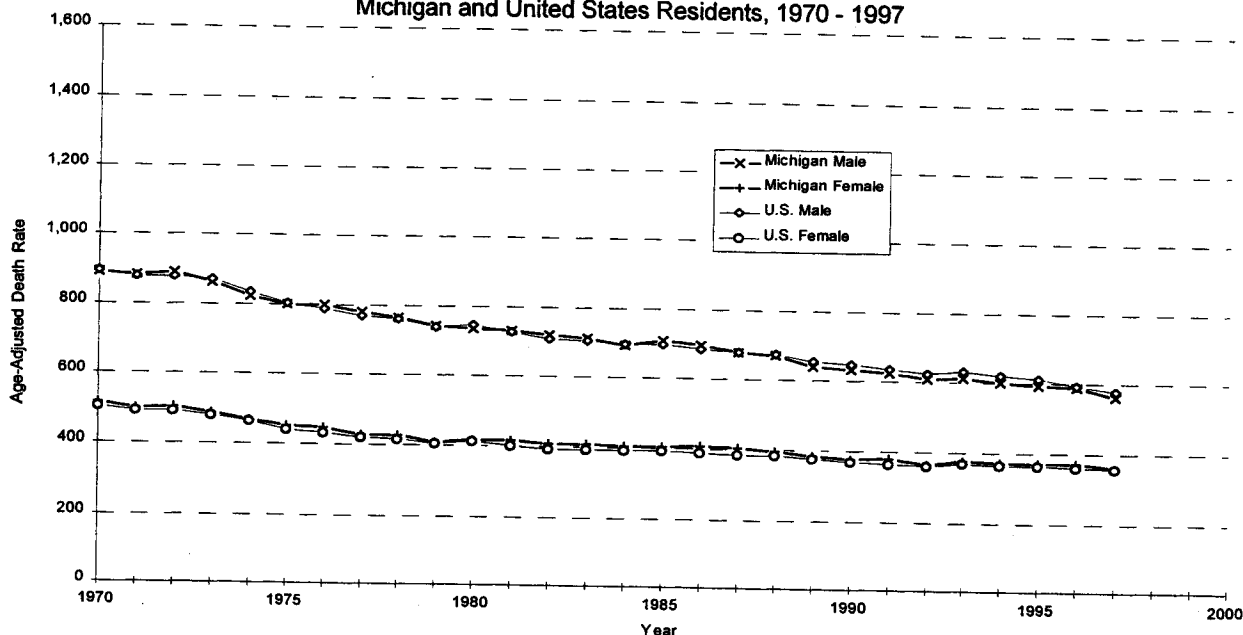
Figure 2.2
Total Age-Adjusted Death Rates by Sex
Michigan and United States Residents, 1970 - 1997



Note: Age-adjusted death rates are based on age-specific death rates per 100,000 population in specified group. Age-adjusted death rates are 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). 1997 U.S. data are provisional.

Source: 1970-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Reports, National Center for Health Statistics

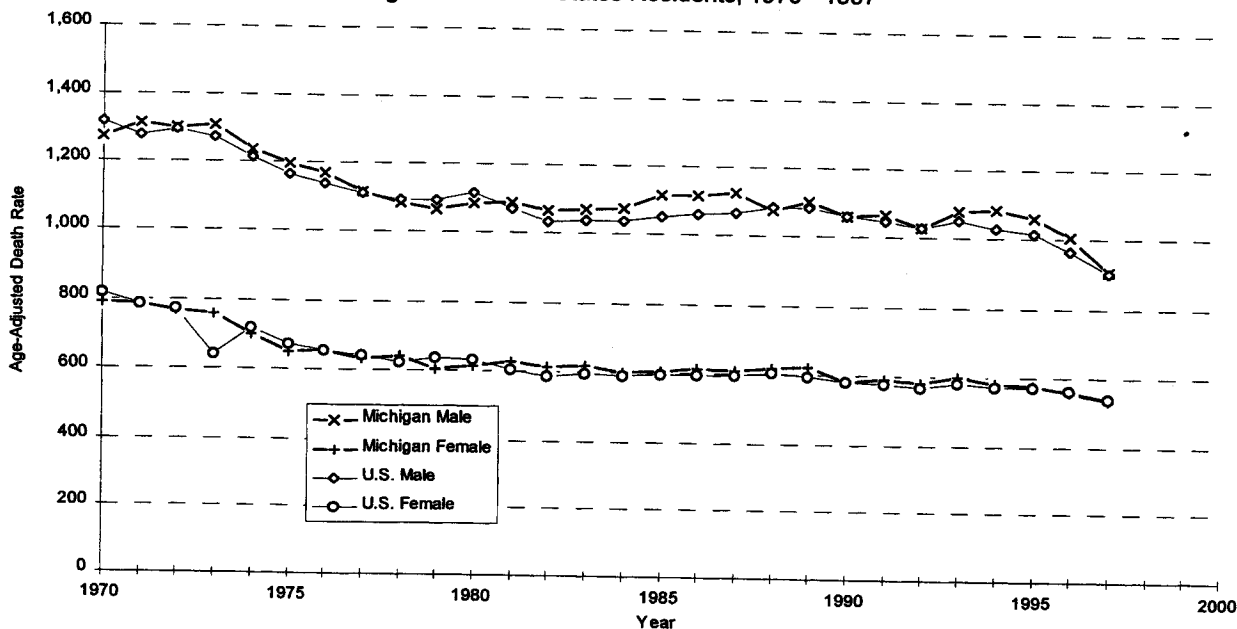
Figure 2.3
White Age-Adjusted Death Rates by Sex
 Michigan and United States Residents, 1970 - 1997



Note: Age-adjusted death rates are based on age-specific death rates per 100,000 population in specified group. Age-adjusted death rates are 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). 1997 U.S. data are provisional.

Source: 1970-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 Monthly Vital Statistics Reports, National Center for Health Statistics

Figure 2.4
Black Age-Adjusted Death Rates by Sex
 Michigan and United States Residents, 1970 - 1997



Note: Age-adjusted death rates are based on age-specific death rates per 100,000 population in specified group. Age-adjusted death rates are 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). 1997 U.S. data are provisional.

Source: 1970-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 Monthly Vital Statistics Reports, National Center for Health Statistics

MORTALITY BY RACE AND ANCESTRY

Table 2.2 presents data on the number of deaths by race for the period 1980-1997 and ancestry since 1989. In 1997 deaths of white persons (70,193) accounted for 84.6 percent of all deaths, while deaths of black persons (12,037) constituted 14.5 percent of the state total. For less than one percent of the deaths, the race was reported as American Indian or Asian and Pacific Islander. For 0.8 percent and 0.9 percent of the deaths, the ancestry was listed as Arab or Hispanic, respectively.

It should be noted that data on race and ancestry are derived from the death certificates filed by funeral directors. Data from sources where race is self-enun-

merated, when matched with death data, indicate that there are larger numbers of American Indians and persons of races other than white and black dying than are reported as members of those groups on the death certificate.

However, the major increase in 1989 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 that year. By requesting information about ancestry, certifiers may be identifying American Indian decedents who might otherwise be identified as white. The increase in Asian and Pacific Islanders between 1988 and 1990 may also be due to the change in the death certificate.

Table 2.2
Number of Deaths by Race and Ancestry
Michigan Residents, Selected Years, 1980 - 1997

Year	Race						Ancestry	
	All Races	White	Black	American Indian	Asian/Pacific Islander	All Other Races	Arab	Hispanic
1980	74,991	64,897	9,704	137	92	1	---	---
1985	78,635	67,426	10,903	130	115	1	---	---
1986	80,177	68,602	11,283	139	132	2	---	---
1987	79,795	67,831	11,614	137	144	2	---	---
1988	80,075	68,191	11,569	132	149	3	---	---
1989	78,566	66,031	11,939	335	183	2	486	612
1990	78,501	66,156	11,739	352	215	5	471	603
1991	79,738	67,182	11,980	324	208	2	547	627
1992	78,916	66,377	11,868	389	233	2	508	635
1993	82,286	69,044	12,515	433	240	5	605	694
1994	82,644	69,409	12,572	385	240	6	604	710
1995	83,405	70,091	12,618	392	265	7	600	698
1996	83,496	70,665	12,069	428	304	1	576	764
1997	82,994	70,193	12,037	422	292	6	653	750

Note: Death records with race not stated are included only in the "All Races" column.

Source: 1980, 1985-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

NUMBER OF DEATHS BY AGE, RACE AND SEX

Except for infancy and early childhood years, the numbers of deaths generally increased with age until about age 85. In Michigan, half of all deaths in 1997 occurred below or at age 76. For males half the deaths occurred below or at 73, while for females, half occurred below or at age 79. Males represented

slightly less than half the deaths (49.7 percent) in 1997. Among black persons a higher percentage of deaths (52.4 percent) were to males.

Until age 79 more males than females died in each age group. After age 79 more females died.

Table 2.3
Number of Deaths by Age, Race and Sex
Michigan Residents, 1997

Age in Years	All Races			White			Black			All Other Races		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	1,085	594	487	640	361	276	425	219	205	17	13	4
1-4	169	105	64	105	68	37	61	35	26	3	2	1
5-9	158	86	72	105	62	43	49	22	27	4	2	2
10-14	168	109	59	122	87	35	41	19	22	3	1	2
15-19	536	387	149	373	257	116	153	123	30	9	6	3
20-24	593	462	131	357	272	85	221	179	42	14	10	4
25-29	680	471	209	436	301	135	236	167	69	7	2	5
30-34	870	590	280	600	411	189	251	164	87	19	15	4
35-39	1,331	860	471	926	611	315	386	233	153	18	15	3
40-44	1,812	1,153	659	1,228	797	431	552	334	218	30	20	10
45-49	2,454	1,532	922	1,691	1,078	613	733	437	296	29	16	13
50-54	2,908	1,709	1,199	2,191	1,310	881	664	368	296	52	30	22
55-59	3,633	2,135	1,498	2,862	1,666	1,196	691	421	270	75	44	31
60-64	4,826	2,755	2,071	3,898	2,249	1,649	871	469	402	56	36	20
65-69	7,210	4,223	2,987	6,072	3,595	2,477	1,055	578	477	78	46	32
70-74	10,100	5,580	4,520	8,558	4,777	3,781	1,449	760	689	89	40	49
75-79	11,837	6,121	5,716	10,420	5,386	5,034	1,343	690	653	68	41	27
80-84	12,378	5,781	6,597	11,131	5,223	5,908	1,180	529	651	63	26	37
85-89	10,412	3,987	6,425	9,467	3,636	5,831	888	322	566	52	27	25
90+	9,830	2,599	7,231	9,009	2,349	6,660	786	239	547	34	11	23
Not Stated	4	4	-	2	2	-	2	2	-	-	-	-
All Ages	82,994	41,243	41,747	70,193	34,498	35,692	12,037	6,310	5,726	720	403	317

Notes: Death records with race and/or sex not stated are included only in the "Total" column.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

AGE-SPECIFIC MORTALITY BY RACE

The race and age-specific mortality rates were lowest in Asian and Pacific Islanders and generally next lowest for the white population below age 85 years (Table 2.4). Age-specific rates were highest for the black population below age 55 years and highest for American Indians at 55-84 years of age.

Similarly, for both males and females the age-specific mortality rates are generally lowest for the white and Asian and Pacific Islander populations (Tables 2.5 and 2.6). Below 65 years of age, these rates are highest for black males and females. Between the ages of 55 and 84, they are highest for American Indian males and females. The age-adjusted rates

indicate the same pattern of differences between the race and ancestry groups.

Caution must be exercised when interpreting the low age-adjusted rates for Asian and Pacific Islanders. They may be low due to inaccurate identification of the race. Also since this population increased by 68 percent between 1980 and 1990, predominately through in-migration, the low mortality rates for people over 45 years of age may be due in part to selective migration. Healthier older people may be more likely to migrate to another state or country than the less healthy people.

Table 2.4
Death Rates by Age and Race
Michigan Residents, 1997

Age in Years	Race				
	Total	White	Black	Amer. Indian	Asian/ P.I.
Crude Rate	849.1	865.4	827.6	610.8	210.2
<1	812.4	609.6	1,756.1	1,182.7	282.8
1-14	25.5	21.7	41.7	*	18.7
15-24	83.1	67.9	152.0	88.9	49.3
25-34	108.1	87.7	226.8	135.0	32.5
35-44	191.6	155.7	421.1	244.1	87.5
45-54	425.3	359.9	888.4	615.5	190.4
55-64	1,061.5	972.6	1,750.7	1,799.8	604.8
65-74	2,606.0	2,512.8	3,315.2	3,982.5	1,496.9
75-84	5,802.6	5,785.8	5,977.5	6,132.5	3,843.4
85+	15,280.8	15,684.7	11,821.2	16,000.0	17,692.3
Age-Adjusted Rate	481.8	449.0	695.6	657.2	297.0

Note: Death records with sex and/or race not stated were randomly allocated prior to computation of age-specific death rates. Records with age not stated were included in the "85 +" row. Death records with all other races stated are included only in the "Total" column. Rates are based on age-specific death rates per 100,000 population in specified group. Age-adjusted death rates are 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. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.5
Death Rates by Age and Race
 Michigan Male Residents, 1997

Age in Years	Race				
	Total	White	Black	Amer. Indian	Asian/P.I.
Crude Rate	865.6	865.9	931.5	695.2	233.1
<1	872.7	673.7	1,797.6	1,799.5	398.9
1-14	30.2	27.7	41.6	*	*
15-24	123.2	96.7	244.3	109.8	73.9
25-34	150.3	120.9	339.5	183.5	*
35-44	248.0	202.2	578.2	360.4	128.6
45-54	524.0	444.6	1,150.9	744.1	235.3
55-64	1,277.8	1,160.5	2,285.4	2,016.1	841.1
65-74	3,292.6	3,174.9	4,277.2	4,991.7	1,606.7
75-84	7,306.9	7,265.1	7,690.4	8,444.4	4,812.8
85+	17,449.6	17,888.6	13,739.9	23,809.5	15,126.1
Age-Adjusted Rate	600.0	557.5	908.4	836.4	350.1

Note: Death records with sex and/or race not stated were randomly allocated prior to computation of age-specific death rates. Records with age not stated were included in the "85 +" row. Death records with all other races stated are included only in the "Total" column. Rates are based on age-specific death rates per 100,000 population in specified group. Age-adjusted death rates are 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. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.6
Death Rates by Age and Race
 Michigan Female Residents, 1997

Age in Years	Race				
	Total	White	Black	Amer. Indian	Asian/P.I.
Crude Rate	833.4	864.8	736.8	528.6	187.5
<1	743.7	537.0	1,705.8	*	*
1-14	20.6	15.5	41.8	*	*
15-24	41.8	38.0	58.8	*	*
25-34	67.1	54.7	133.1	*	*
35-44	136.3	108.5	297.6	135.1	*
45-54	330.3	275.9	678.1	500.4	152.9
55-64	861.7	795.5	1,336.6	1,594.1	355.4
65-74	2,048.3	1,964.7	2,635.1	3,194.3	1,418.1
75-84	4,839.5	4,832.0	4,947.3	4,774.2	3,206.7
85+	14,416.6	14,810.5	11,043.9	12,048.2	20,000.0
Age-Adjusted Rate	384.7	359.4	534.9	517.7	249.6

Note: Death records with sex and/or race not stated were randomly allocated prior to computation of age-specific death rates. Records with age not stated were included in the "85 +" row. Death records with all other races stated are included only in the "Total" column. Rates are based on age-specific death rates per 100,000 population in specified group. Age-adjusted death rates are 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. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

LIFE EXPECTANCY

In 1997, the life expectancy at birth was 73.2 years for males and 78.7 years for females. Females demonstrated a significantly greater longevity than males, due to the higher mortality rates of males at all ages.

TRENDS IN LIFE EXPECTANCY

Life expectancies by sex in selected years for Michigan and United States residents are presented in Table 2.7. It can be seen that longevity has increased greatly in Michigan since 1901, by 19.8 years for males and by 23.6 years for females. Females born in Michigan 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 7.4 years by 1970. Since 1970 male life expectancy has risen faster than female life expectancy and the disparity has decreased to 5.5 years.

The life expectancy of Michigan residents was well above that for the nation in 1901, but this differential had virtually disappeared by 1950. Between 1980 and 1997 both males and females in Michigan had lower life expectancy than corresponding sex groups in the nation. By 1997, the life expectancies of males and females in Michigan were 0.4 and 0.5 years, respectively, below the national provisional life expectancy.

LIFE EXPECTANCY BY RACE

White persons have had a greater life expectancy than black persons of the same sex since 1950 (Table 2.8). The life expectancy of white males was 8.2 years greater than black males in 1997 compared to a differential of 5.8 years in 1950. The life expectancy for white males increased slowly after 1950, while the life expectancy of black males fluctuated over the period from 1950 to 1997. The black male life expectancy rose from 63.6 to 66.2 years from 1980 to 1997, while life expectancy for white males rose from 71.0 in 1980 to 74.4 years in 1997.

Table 2.7
Life Expectancy at Birth by Sex
Michigan and United States Residents
Selected Years, 1901 - 1997

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	56.0
58.1	61.6	1930	59.8	62.8
60.8	65.2	1940	63.4	64.4
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
68.8	76.6	1975	68.5	75.7
70.0	77.4	1980	70.0	76.9
71.8	78.8	1990	71.8	78.1
72.0	78.9	1991	71.8	78.1
72.3	79.1	1992	72.2	78.4
72.2	78.8	1993	71.3	78.3
72.4	79.0	1994	72.4	78.4
72.5	78.9	1995	72.7	78.5
73.1	79.1	1996	73.1	78.7
73.6	79.2	1997	73.2	78.7

Note: Michigan data for years 1920, 1930 and 1940 are for white persons only. 1997 U.S. data are provisional.

Source: 1901-1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

In 1950, Michigan resident white females had an average longevity 8.5 years greater than black females. This disparity declined to 5.3 years by 1980 and decreased to 4.7 years by 1997. Life expectancy generally increased for white and black females between 1950 and 1997. For white and black females, life expectancy generally rose from 1950 through 1990, then fluctuated until 1997 when white females could be expected to live 79.5 years compared to 74.8 for black females.

Table 2.8
Life Expectancy at Birth by Sex and Race
Michigan Residents, Selected Years, 1950 - 1997

Population Subgroup	Year of Death											
	1950	1960	1970	1980	1990	1991	1992	1993	1994	1995	1996	1997
White												
Male	66.2	67.5	68.2	71.0	73.1	73.2	73.6	73.6	73.8	74.1	74.3	74.4
Female	71.9	74.0	75.3	77.6	79.0	78.9	79.4	79.2	79.3	79.3	79.4	79.5
Black												
Male	60.4	63.6	59.9	63.6	63.9	63.7	64.6	64.1	64.2	64.8	66.0	66.2
Female	63.4	67.7	68.3	72.3	73.3	73.1	73.3	73.3	73.8	74.0	74.6	74.8

Note: Data for 1950 and 1960 are for persons of white and other than white race.

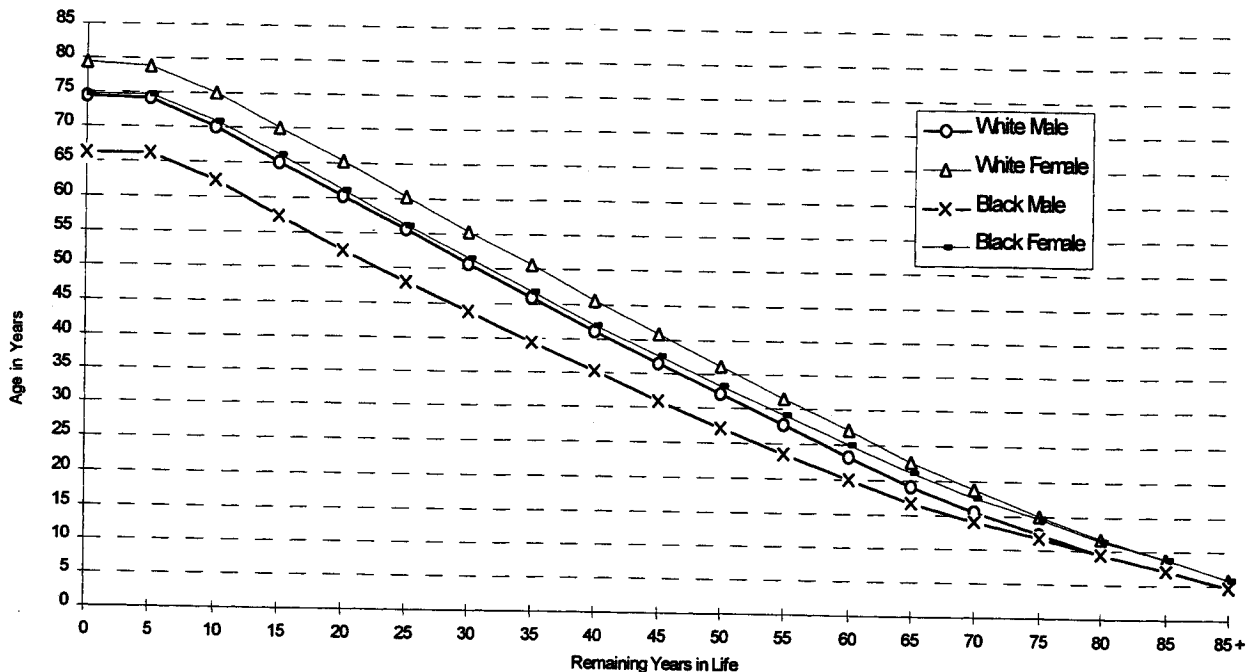
Source: 1950-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

YEARS OF LIFE REMAINING

The expected number of years of life remaining are presented graphically by age, race, and sex in Figure 2.5. 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, with advancing age the race disparity in years of life remaining diminished, so that black persons displayed similar expected years of life remaining with their white counterparts in age intervals over 69 years. (See Tables 4.19-4.27 for the values used in Figure 2.5)

Figure 2.5
Remaining Years of Life by Age, Sex and Race
Michigan Residents, 1997



Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

MARITAL STATUS

The numbers of deaths by marital status for men and women are displayed in Table 2.9. 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 time of death (56 percent compared to 26 percent). Conversely, women were over three times as likely to be widows at the time of death as men were to be widowers (56 percent compared to 19 percent).

Table 2.9
Deaths by Sex and Marital Status
Michigan Residents, 1997

Marital Status	Males		Females	
	Number	Percent	Number	Percent
Total	41,243	100.0	41,747	100.0
Never Married	5,748	13.9	3,686	8.8
Divorced	4,647	11.3	3,956	9.5
Widowed	7,774	18.8	23,391	56.0
Married	22,923	55.6	10,652	25.5
Unknown	151	0.4	62	0.1

Note: Divorced includes legally separated.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

PLACE OF OCCURRENCE

There were 1,979 Michigan resident deaths in 1997 that occurred outside the state (Table 2.10). This represents 2.4 percent of all resident deaths. The states with the highest number of Michigan resident deaths were Florida and Ohio. The surrounding areas of Illinois, Indiana, Ohio, Wisconsin and Canada accounted for almost half of all resident deaths occurring outside Michigan.

Of the 1,055 non-residents who died in Michigan in 1997, 42 percent were from the surrounding areas while 21 percent were Floridians.

Table 2.10
Michigan Deaths
Occurring Outside Michigan to Michigan
Residents by Place of Occurrence and
Occurring in Michigan to Non-Michigan
Residents by Place of Residence, 1997

Geographic Area	Residents Dying Outside Michigan		Non-Residents Dying in Michigan	
	Number	Percent	Number	Percent
Total	1,979	100.0	1,055	100.0
Florida	492	24.9	222	21.0
Ohio	336	17.0	159	15.1
Indiana	223	11.3	75	7.1
Wisconsin	221	11.2	99	9.4
Arizona	102	5.2	20	1.9
Illinois	89	4.5	80	7.6
Texas	55	2.8	23	2.2
Minnesota	51	2.6	9	0.9
Tennessee	31	1.6	24	2.3
Nevada	31	1.6	6	0.6
Georgia	28	1.4	6	0.6
Kentucky	24	1.2	27	2.6
New York	22	1.1	31	2.9
Pennsylvania	21	1.1	25	2.4
Alabama	21	1.1	13	1.2
North Carolina	21	1.1	10	0.9
All Other States	201	10.2	171	16.2
Canada	2	*	26	2.5
All Other Areas	8	0.4	18	1.7
Unknown	-	-	11	1.0

Note: Asterisk (*) indicates that data do not meet standards of reliability or precision. Ranking of top 15 of residents occurring outside Michigan. Combine rest for Other States. Puerto Rico is added to the Other Areas

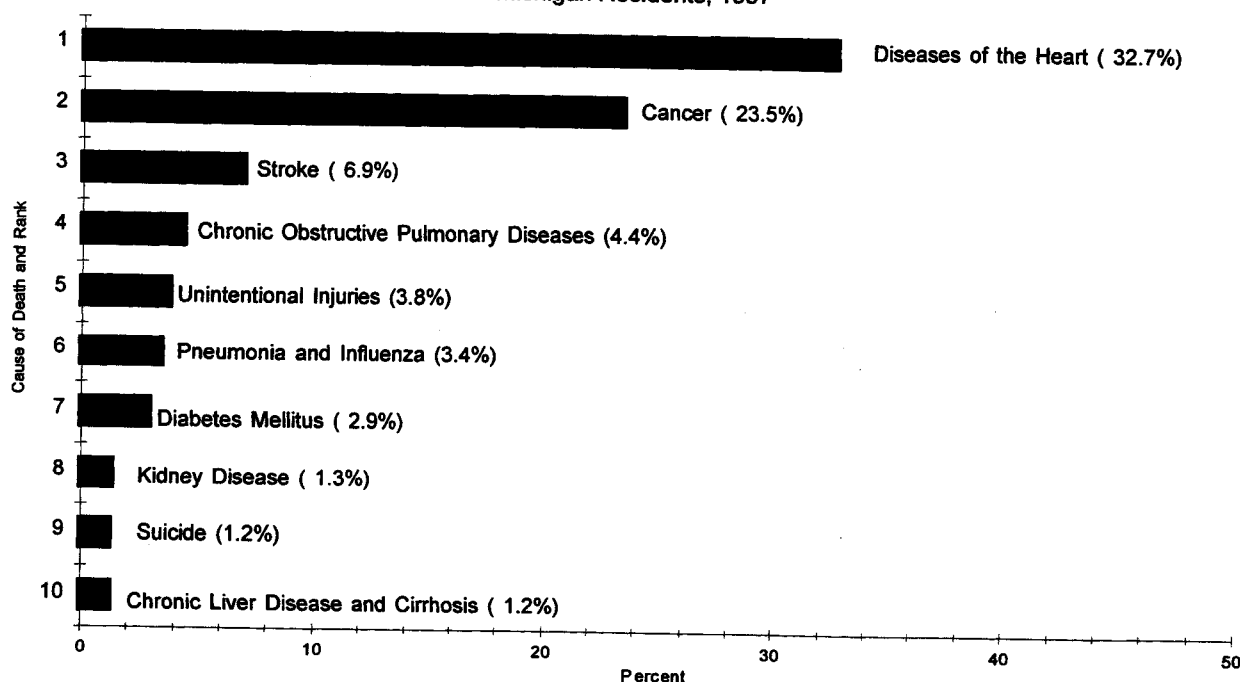
Source: 1997 Resident and Occurrence Death Files, Division for Vital Records and Health Statistics, MDCH

LEADING CAUSES OF DEATH

Ten Leading Causes of Death Deaths due to the 10 leading causes accounted for more than 80 percent of all Michigan resident deaths in 1997. Diseases of the heart was the leading cause of death with 33 percent of all deaths. Another 24 percent of the deaths were due to cancer. Together these two causes of death were responsible for 57 percent of all Michigan resident deaths. The third leading cause of death was stroke with 7 percent of all deaths. The percentage of total deaths resulting from each of the 10 leading causes of death in 1997 is illustrated in Figure 2.6.

The ranking of leading causes changed in 1997 with suicide moving from the eighth to the ninth leading cause of death. Nephritis, nephrotic syndrome and nephrosis (kidney disease) was one of the ten leading causes of death, for the first time in 1996. Homicide was not one of the leading causes of death in Michigan in 1996 for the first time since 1988. The numbers of deaths and the death rates for the 10 leading causes in 1997 are shown in Table 2.11.

Figure 2.6
Leading Causes of Death
Michigan Residents, 1997



Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Cause-Specific Crude Death Rates Rates in Michigan were higher in 1997 than in 1996 for three of the ten leading causes: unintentional injuries, diabetes mellitus, and kidney disease. The rates were lower in 1997 for diseases of the heart, cancer, stroke, chronic obstructive pulmonary diseases and allied conditions, pneumonia and influenza, and suicide.

The order of the leading causes of death for Michigan and the United States were very similar in 1997 (Table 2.11). Suicide, the ninth leading cause of death in Michigan was the eighth in the United

States, while kidney disease ranked ninth in the United States and eighth in Michigan.

Michigan's mortality rates for heart disease, diabetes mellitus and kidney disease were higher than the comparable national rates. The Michigan death rates for chronic obstructive pulmonary disease, pneumonia and influenza, and unintentional injuries were lower than the national rates. The Michigan and national rates for cancer, stroke, suicide and chronic liver disease and cirrhosis were almost identical.

Table 2.11
Leading Causes of Death and Cause-Specific Rates
Michigan and United States Residents, 1997

Michigan Rank	Cause of Death	Number of Deaths		Rate	
		Michigan	U.S.	Michigan	U.S.
1	Diseases of the Heart	27,150	725,790	277.8	271.2
2	Cancer	19,504	537,390	199.6	200.8
3	Stroke	5,725	159,877	58.6	59.7
4	Chronic Obstructive Pulmonary Diseases and Allied Conditions	3,635	110,637	37.2	41.3
5	Unintentional Injuries	3,118	92,191	31.9	34.4
6	Pneumonia and Influenza	2,813	88,383	28.8	33.0
7	Diabetes Mellitus	2,435	62,332	24.9	23.3
8	Kidney Disease	1,095	25,570	11.2	9.6
9	Suicide	1,003	29,725	10.3	11.1
10	Chronic Liver Disease and Cirrhosis	966	24,765	9.9	9.3
Sub Total		67,444	1,856,660	690.0	693.7
All Other Causes		15,550	458,069	159.1	171.2
Total		82,994	2,314,729	849.1	864.9

Note: Rates are per 100,000 population. 1997 U.S. data are provisional.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Leading Causes of Death by Race and Sex The numbers of deaths and crude death rates are presented by race and sex for the 10 leading causes of death in Tables 2.12 and 2.13. The order of the leading causes for each group was similar with some notable exceptions. Suicide, the overall ninth leading cause of death, was the fourteenth leading cause for white females. Unintentional injuries, the fifth leading

cause of death overall, was the seventh leading cause for white females. Homicide was the third and eighth leading cause of death for black males and females, respectively, but not one of the ten leading causes of death overall. Finally, diabetes, the seventh leading cause overall, was the fourth leading cause for black females.

Table 2.12
Leading Causes of Death by Race and Sex
Michigan Residents, 1997

Cause of Death	All Races			White			Black			All Other Races		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Diseases of the Heart	27,150	13,155	13,995	23,398	11,279	12,119	3,562	1,756	1,806	179	112	67
Cancer	19,504	10,125	9,379	16,746	8,690	8,056	2,569	1,344	1,225	185	89	96
Stroke	5,725	2,247	3,478	4,940	1,913	3,027	735	315	420	46	17	29
Chronic Obstructive Pulmonary Diseases and Allied Conditions	3,635	1,940	1,695	3,368	1,788	1,580	236	134	102	29	16	13
Unintentional Injuries	3,118	1,914	1,204	2,524	1,536	988	540	343	197	49	31	18
Pneumonia/Influenza	2,813	1,370	1,443	2,426	1,175	1,251	364	182	182	23	13	10
Diabetes Mellitus	2,435	1,118	1,317	1,982	916	1,066	419	186	233	34	16	18
Kidney Disease	1,095	524	571	887	423	464	202	98	104	6	3	3
Suicide	1,003	825	178	898	735	163	86	75	11	18	14	4
Chronic Liver Disease and Cirrhosis	966	625	341	757	484	273	196	133	63	12	7	5
All Other Causes	15,550	7,400	8,146	12,267	5,559	6,705	3,128	1,744	1,383	139	85	54
Total	82,994	41,243	41,747	70,193	34,498	35,692	12,037	6,310	5,726	720	403	317

Note: Death records with race/sex not stated are included only in the "Total" column.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.13
Leading Causes of Death and Crude Death Rates by Race and Sex
Michigan Residents, 1997

Cause of Death	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Diseases of the Heart	277.8	276.1	279.4	288.5	283.1	293.6	244.9	259.2	232.4
Cancer	199.6	212.5	187.2	206.5	218.1	195.2	176.6	198.4	157.6
Stroke	58.6	47.2	69.4	60.9	48.0	73.3	50.5	46.5	54.0
Chronic Obstructive Pulmonary Diseases and Allied Conditions	37.2	40.7	33.8	41.5	44.9	38.3	16.2	19.8	13.1
Unintentional Injuries	31.9	40.2	24.0	31.1	38.6	23.9	37.1	50.6	25.3
Pneumonia/Influenza	28.8	28.8	28.8	29.9	29.5	30.3	25.0	26.9	23.4
Diabetes Mellitus	24.9	23.5	26.3	24.4	23.0	25.8	28.8	27.5	30.0
Kidney Disease	11.2	11.0	11.4	10.9	10.6	11.2	13.9	*	*
Suicide	10.3	17.3	3.6	11.1	18.4	3.9	5.9	11.1	*
Chronic Liver Disease and Cirrhosis	9.9	13.1	6.8	9.3	12.1	6.6	13.5	19.6	*
All Other Causes	159.1	155.3	162.6	151.2	139.5	162.5	215.1	257.5	178.0
Total	849.1	865.6	833.4	865.4	865.9	864.8	827.6	931.5	736.8

Note: Rates are per 100,000 population. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Age-Adjusted Rates by Race and Sex These rates are presented for the ten leading causes of death in Table 2.14. These rates adjust for the differences in age distributions among the race/sex groups. When comparing the crude rates of heart disease between white males and females, the rate for females is higher, but when adjusted for age the male rate is nearly double that of females. Crude rates for white females are higher for heart disease, stroke, pneumonia and influenza, kidney disease and diabetes mellitus, but after age-adjusting, the rates are higher in males.

The age-adjusted death rates for white females were lower than the rates for the other three groups for nine of the ten leading causes of death. For deaths due to heart disease, the rates for white males, black males and black females were 76, 158 and 56 percent higher, respectively than for white females.

For cancer deaths these differentials were 36, 86 and 20 percent. The greatest differentials between black and white female rates occurred for diabetes, chronic liver disease and cirrhosis, and kidney disease where the black female rates were 90 percent, 73 percent and 133 percent higher, respectively, than rates for white females.

Rates for black males and females were lower for suicides and chronic obstructive pulmonary diseases and allied conditions than their white counterparts. Black male and female rates were higher than white male and female rates, for the remaining eight leading causes of death. The greatest differentials between black and white male rates occurred for kidney disease and chronic liver disease and cirrhosis, where black male rates were 140 percent and 132 percent higher.

Table 2.14
Leading Causes of Death and Age-Adjusted Death Rates by Race and Sex
Michigan Residents, 1997

Cause of Death	All Races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Diseases of the Heart	137.7	178.8	103.8	130.3	170.3	97.0	193.2	250.2	151.7
Cancer	126.4	150.2	109.2	122.5	144.8	106.4	156.3	198.2	128.1
Stroke	26.0	28.2	24.1	24.3	26.3	22.5	38.0	43.8	33.8
Chronic Obstructive Pulmonary Diseases and Allied Conditions	19.9	25.2	16.3	20.7	26.1	17.1	12.7	17.6	9.6
Unintentional Injuries	26.7	36.7	17.2	25.2	34.6	16.0	36.2	51.9	23.1
Pneumonia/Influenza	12.3	16.3	9.5	11.5	15.3	8.9	17.9	23.9	13.7
Diabetes Mellitus	14.5	16.1	13.2	13.0	14.5	11.9	25.0	28.0	22.6
Kidney Disease	5.3	6.6	4.5	4.6	5.7	3.9	11.0	13.7	9.1
Suicide	9.5	16.1	3.1	10.0	16.8	3.5	6.2	11.8	*
Chronic Liver Disease and Cirrhosis	7.8	11.0	4.9	6.9	9.6	4.4	14.0	22.3	7.6
All Other Causes	95.7	112.9	77.9	79.8	93.1	68.0	185.0	246.9	134.3
Total	481.8	600.0	384.7	449.0	557.5	359.4	695.6	908.4	534.9

Note: Age-adjusted death rates are based on age-specific death rates per 100,000 population in specified group. Age-adjusted death rates are 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). Asterisk (*) indicates that data do not meet standards of reliability or precision.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Five Leading Causes by Age, Race and Sex
Age-specific mortality rates for the leading causes of death among residents of different ages, sexes and races are more varied than age-adjusted rates for the race-sex groups (Tables 2.15-2.19).

Leading causes of death for infants under one year are generally different than the causes observed for other age groups. The leading cause for all four race-sex groups of infants is certain conditions originating in the perinatal period. Congenital anomalies and sudden infant death syndrome were the second or third leading cause for infants in each group.

were the leading cause of death for white males and females from ages 1-34 years. Unintentional injuries were among the top leading causes of death for black males and females ages 1-34 years and were the leading cause for black males and females ages 1-14 years.

Homicide was the second leading cause of death for ages 15-34 years, the third leading cause for ages

5-14 years, and the fourth leading cause for ages 1-4 overall; however, it was the leading cause of death for black males and black females ages 15-34 years. Nearly fifty percent of the homicides among Michigan residents occurred among black males 15-49 years of age. Compared to homicide rates in 1987 (222.5), the rates for black males ages 15-24 has decreased by 39 percent in 1997.

Suicide was the third leading cause of death overall for ages 15-34 and second among white males 15-34. Suicide was the third leading cause among black males 15-24 and the fourth leading cause for white females ages 35-49 years.

Among persons 35 years and over, chronic conditions are responsible for the majority of deaths. Cancer was the leading cause of death for white and black females ages 35-64 years.

Diseases of the heart was the leading cause of death for all decedents ages 65 years or over.

Table 2.15
Leading Causes of Death and Cause-Specific Rates by Age
Michigan Residents, 1997

Age	Rank and Cause of Death	Number	Rate
All Ages	1. Diseases of the Heart	27,150	277.8
	2. Cancer	19,504	199.6
	3. Stroke	5,725	58.6
	4. Chronic Obstructive Pulmonary Diseases & Allied Conditions	3,635	37.2
	5. Unintentional Injuries	3,118	31.9
	All Causes	82,994	849.1
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	574	40.0
	2. Congenital Anomalies	211	14.7
	3. Sudden Infant Death Syndrome	138	9.6
	4. Unintentional Injuries	33	2.3
	5. Homicide	14	1.0
	All Causes	1,085	75.6
1-4 Years	1. Unintentional Injuries	54	10.3
	2. Congenital Anomalies	20	3.8
	3. Cancer	12	2.3
	4. Homicide	11	2.1
	5. Stroke	7	1.3
	All Causes	169	32.3
5-14 Years	1. Unintentional Injuries	137	9.7
	2. Cancer	40	2.8
	3. Homicide	21	1.5
	4. Diseases of the Heart	16	1.1
	5. Congenital Anomalies	15	1.1
	All Causes	326	23.0
15-24 Years	1. Unintentional Injuries	447	32.9
	2. Homicide	241	17.7
	3. Suicide	159	11.7
	4. Cancer	65	4.8
	5. Diseases of the Heart	37	2.7
	All Causes	1,129	83.1
25-34 Years	1. Unintentional Injuries	390	27.2
	2. Homicide	212	14.8
	3. Suicide	165	11.5
	4. Cancer	164	11.4
	5. Diseases of the Heart	122	8.5
	All Causes	1,550	108.1
35-49 Years	1. Cancer	1,232	52.7
	2. Diseases of the Heart	1,134	48.5
	3. Unintentional Injuries	596	25.5
	4. Suicide	312	13.4
	5. Chronic Liver Disease & Cirrhosis	297	12.7
	All Causes	5,597	239.6
50-64 Years	1. Cancer	4,224	310.1
	2. Diseases of the Heart	3,283	241.0
	3. Diabetes Mellitus	426	31.3
	4. Stroke	424	31.1
	5. Chronic Obstructive Pulmonary Diseases & Allied Conditions	390	28.6
	All Causes	11,367	834.4
65 and Over	1. Diseases of the Heart	22,538	1,856.5
	2. Cancer	13,764	1,133.8
	3. Stroke	5,054	416.3
	4. Chronic Obstructive Pulmonary Diseases & Allied Conditions	3,167	260.9
	5. Pneumonia and Influenza	2,474	203.8
	All Causes	61,767	5,087.8

Note: Subtotals by sex and race do not add to the grand total as the race was not stated on records for 32 males and 12 females and sex was not stated for 3 white and 1 black. Age groups do not add to respective totals because records with age not stated are included only in the "All Ages" row. Rates may not agree with those shown elsewhere in this section since records with sex and race not stated were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table. Cause-specific rates are per 100,000 population. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.16
**Leading Causes of Death and Cause-Specific Rates by Age,
 Michigan Resident White Males, 1997**

Age	Rank and Cause of Death	Number	Rate
All Ages	1. Diseases of the Heart	11,279	283.1
	2. Cancer	8,690	218.1
	3. Stroke	1,913	48.0
	4. Chronic Obstructive Pulmonary Diseases & Allied Conditions	1,788	44.9
	5. Unintentional Injuries	1,536	38.6
	All Causes	34,498	865.9
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	177	356.8
	2. Congenital Anomalies	79	159.3
	3. Sudden Infant Death Syndrome	49	98.8
	4-6. Unintentional Injuries-Stroke-Homicide	6	12.1
	All Causes	361	727.7
1-4 Years	1. Unintentional Injuries	23	11.0
	2. Congenital Anomalies	11	5.3
	3. Cancer	8	3.8
	4. Homicide	4	*
	5. Stroke	3	*
	All Causes	68	32.6
5-14 Years	1. Unintentional Injuries	65	11.3
	2. Cancer	18	3.1
	3. Suicide	10	1.7
	4. Congenital Anomalies	9	1.6
	5. Diseases of the Heart	6	1.0
	All Causes	149	25.9
15-24 Years	1. Unintentional Injuries	264	48.3
	2. Suicide	112	20.5
	3. Homicide	29	5.3
	4. Cancer	24	4.4
	5. Diseases of the Heart	18	3.3
	All Causes	529	96.7
25-34 Years	1. Unintentional Injuries	227	38.5
	2. Suicide	121	20.5
	3. Cancer	67	11.4
	4. Diseases of the Heart	59	10.0
	5. Homicide	41	7.0
	All Causes	712	120.9
35-49 Years	1. Diseases of the Heart	621	62.6
	2. Cancer	440	44.3
	3. Unintentional Injuries	323	32.5
	4. Suicide	230	23.2
	5. Chronic Liver Disease & Cirrhosis	149	15.0
	All Causes	2,486	250.5
50-64 Years	1. Cancer	1,830	316.4
	2. Diseases of the Heart	1,739	300.7
	3. Unintentional Injuries	188	32.5
	4. Stroke	172	29.7
	5. Chronic Obstructive Pulmonary Diseases & Allied Conditions	169	29.2
	All Causes	5,225	903.5
65 and Over	1. Diseases of the Heart	8,830	1,992.4
	2. Cancer	6,302	1,422.0
	3. Stroke	1,656	373.7
	4. Chronic Obstructive Pulmonary Diseases & Allied Conditions	1,598	360.6
	5. Pneumonia and Influenza	1,049	236.7
	All Causes	24,966	5,633.5

Note: Subtotals by sex and race do not add to the grand total as the race was not stated on records for 32 males and sex was not stated for 3 white. Age groups do not add to respective totals because records with age not stated are included only in the "All Ages" row. Rates may not agree with those shown elsewhere in this section since records with sex and race not stated were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table. Cause-specific rates are per 100,000 population. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.17
Leading Causes of Death and Cause-Specific Rates by Age
 Michigan Resident Black Males, 1997

Age	Rank and Cause of Death	Number	Rate
All Ages	1. Diseases of the Heart	1,756	259.2
	2. Cancer	1,344	198.4
	3. Homicide	437	64.5
	4. Unintentional Injuries	343	50.6
	5. Stroke	315	46.5
	All Causes	6,310	931.5
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	128	832.6
	2. Sudden Infant Death Syndrome	38	247.2
	3. Congenital Anomalies	27	175.6
	4. Unintentional Injuries	5	*
	5-6. Diseases of the Heart-Pneumonia and Influenza	3	*
	All Causes	219	1,424.6
1-4 Years	1. Unintentional Injuries	14	26.0
	2. Homicide	5	*
	3. Congenital Anomalies	3	*
	4-8. Certain Conditions Originating in the Perinatal Period-Cancer-AIDS-Anemia-Bronchitis	1	*
	All Causes	35	65.1
5-14 Years	1. Unintentional Injuries	20	15.5
	2. Homicide	11	8.5
	3. Cancer	2	*
	4-9. Certain Conditions Originating in the Perinatal Period-AIDS-Anemia Diseases of the Heart-Pneumonia & Influenza-Ulcer	1	*
	All Causes	41	31.8
15-24 Years	1. Homicide	167	135.1
	2. Unintentional Injuries	64	51.8
	3. Suicide	24	19.4
	4. Cancer	10	8.1
	5. Diseases of the Heart	6	4.9
	All Causes	302	244.3
25-34 Years	1. Homicide	119	122.1
	2. Unintentional Injuries	58	59.5
	3. AIDS	38	39.0
	4. Diseases of the Heart	23	23.6
	5. Suicide	21	21.5
	All Causes	331	339.5
35-49 Years	1. Diseases of the Heart	208	150.7
	2. Cancer	102	73.9
	3. Homicide	99	71.7
	4. AIDS	91	65.9
	5. Unintentional Injuries	81	58.7
	All Causes	1,004	727.6
50-64 Years	1. Diseases of the Heart	412	597.4
	2. Cancer	350	507.5
	3. Stroke	63	91.3
	4-5. Unintentional Injuries-Diabetes Mellitus	50	72.5
	All Causes	1,258	1,824.1
65 and Over	1. Diseases of the Heart	1,103	2,153.6
	2. Cancer	868	1,694.8
	3. Stroke	208	406.1
	4. Pneumonia and Influenza	114	222.6
	5. Chronic Obstructive Pulmonary Diseases & Allied Conditions	110	214.8
	All Causes	3,118	6,087.9

Note: Subtotals by sex and race do not add to the grand total as the race was not stated on records for 32 males and sex was not stated for 1 black. Age groups do not add to respective totals because records with age not stated are included only in the "All Ages" row. Rates may not agree with those shown elsewhere in this section since records with sex and race not stated were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table. Cause-specific rates are per 100,000 population. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.18
Leading Causes of Death and Cause-Specific Rates by Age
Michigan Resident White Females, 1997

Age	Rank and Cause of Death	Number	Rate
All Ages	1. Diseases of the Heart	12,119	293.6
	2. Cancer	8,056	195.2
	3. Stroke	3,027	73.3
	4. Chronic Obstructive Pulmonary Diseases & Allied Conditions	1,580	38.3
	5. Pneumonia & Influenza	1,251	30.3
	All Causes	35,692	864.8
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	142	300.7
	2. Congenital Anomalies	71	150.4
	3. Sudden Infant Death Syndrome	20	42.4
	4. Unintentional Injuries	13	27.5
	5. Diseases of the Heart	5	*
	All Causes	276	584.5
1-4 Years	1. Unintentional Injuries	7	3.5
	2-3. Congenital Anomalies-Diseases of the Heart	5	*
	4-6. Stroke-Homicide-Cancer	2	*
	All Causes	37	18.7
5-14 Years	1. Unintentional Injuries	28	5.1
	2. Cancer	16	2.9
	3. Diseases of the Heart	6	1.1
	4-5. Congenital Anomalies-Pneumonia & Influenza	4	*
	All Causes	78	14.3
15-24 Years	1. Unintentional Injuries	94	17.8
	2. Cancer	23	4.3
	3-4. Homicide-Suicide	15	2.8
	5. Congenital Anomalies	11	2.1
	All Causes	201	38.0
25-34 Years	1. Unintentional Injuries	81	13.7
	2. Cancer	67	11.3
	3. Diseases of the Heart	22	3.7
	4. Homicide	18	3.0
	5. Suicide	17	2.9
All Causes	324	54.7	
35-49 Years	1. Cancer	536	54.6
	2. Diseases of the Heart	168	17.1
	3. Unintentional Injuries	126	12.8
	4. Suicide	57	5.8
	5. Chronic Liver Disease & Cirrhosis	53	5.4
All Causes	1,359	138.4	
50-64 Years	1. Cancer	1,643	271.6
	2. Diseases of the Heart	800	132.3
	3. Chronic Obstructive Pulmonary Diseases & Allied Conditions	180	29.8
	4. Diabetes Mellitus	151	25.0
	5. Stroke	130	21.5
All Causes	3,726	616.0	
65 and Over	1. Diseases of the Heart	11,105	1,764.6
	2. Cancer	5,769	916.7
	3. Stroke	2,830	449.7
	4. Chronic Obstructive Pulmonary Diseases & Allied Conditions	1,368	217.4
	5. Pneumonia & Influenza	1,157	183.9
All Causes	29,691	4,718.0	

Note: Subtotals by sex and race do not add to the grand total as the race was not stated on records for 12 females and sex was not stated for 3 white. Age groups do not add to respective totals because records with age not stated are included only in the "All Ages" row. Rates may not agree with those shown elsewhere in this section since records with sex and race not stated were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table. Cause-specific rates are per 100,000 population. Asterisk (*) indicates that data do not meet standards of reliability or precision.

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Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.19
Leading Causes of Death and Cause-Specific Rates by Age
Michigan Resident Black Females, 1997

Age	Rank and Cause of Death	Number	Rate	
All Ages	1. Diseases of the Heart	1,806	232.4	
	2. Cancer	1,225	157.6	
	3. Stroke	420	54.0	
	4. Diabetes Mellitus	233	30.0	
	5. Unintentional Injuries	197	25.3	
	All Causes	5,726	736.8	
Under 1 Year	1. Certain Conditions Originating in the Perinatal Period	115	765.1	
	2. Sudden Infant Death Syndrome	30	199.6	
	3. Congenital Anomalies	29	192.9	
	4. Unintentional Injuries	9	59.9	
	5. Homicide	5	*	
	All Causes	205	1,363.8	
1-4 Years	1. Unintentional Injuries	9	16.9	
	2. Certain Conditions Originating in the Perinatal Period	3	*	
	3-4. Stroke-Bronchitis	2	*	
	5-7. Congenital Anomalies-Cancer-Anemia	1	*	
	All Causes	26	48.8	
	5-14 Years	1. Unintentional Injuries	20	15.9
2-3. Cancer-Homicide		3	*	
4-6. Chronic Obstructive Pulmonary Disease & Allied Conditions-Diseases of the Heart-Meningitis		2	*	
All Causes		49	38.8	
15-24 Years		1. Homicide	27	22.0
		2. Unintentional Injuries	15	12.2
	3. Cancer	5	*	
	4. Diseases of the Heart	4	*	
	5-7. Congenital Anomalies-Suicide-Complications of Pregnancy	2	*	
	All Causes	72	58.8	
25-34 Years	1. Homicide	33	28.1	
	2. Unintentional Injuries	21	17.9	
	3-4. Cancer-Diseases of the Heart	17	14.5	
	5. Stroke	5	*	
	All Causes	156	133.1	
	35-49 Years	1. Cancer	136	77.5
2. Diseases of the Heart		121	69.0	
3. Unintentional Injuries		52	29.6	
4. Stroke		37	21.1	
5. Homicide		32	18.2	
All Causes		667	380.2	
50-64 Years	1. Cancer	337	388.1	
	2. Diseases of the Heart	286	329.3	
	3. Stroke	52	59.9	
	4. Diabetes Mellitus	51	58.7	
	5. Unintentional Injuries	23	26.5	
	All Causes	968	1,114.7	
65 and Over	1. Diseases of the Heart	1,375	1,704.2	
	2. Cancer	726	899.8	
	3. Stroke	323	400.3	
	4. Diabetes Mellitus	163	202.0	
	5. Pneumonia & Influenza	139	172.3	
	All Causes	3,583	4,440.8	

Note: Subtotals by sex and race do not add to the grand total as the race was not stated on records for 12 females and sex was not stated for 1 black. Age groups do not add to respective totals because records with age not stated are included only in the "All Ages" row. Rates may not agree with those shown elsewhere in this section since records with sex and race not stated were randomly allocated prior to rate calculation for the other tables, and were not included in calculations for this table. Cause-specific rates are per 100,000 population. Asterisk (*) indicates that data do not meet standards of reliability or precision.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

YEARS OF POTENTIAL LIFE LOST BELOW AGE 75

The years of potential life lost below age 75 is a measure of mortality designed to emphasize mortality which is prevalent among people under age 75. The number of years of potential life lost is calculated as the number of years between the age at death and 75 years of age for persons dying before their 75th year.

Table 2.20 displays the rates of years of potential life lost to the Michigan population in 1997 for selected causes of death, as well as the rankings of these causes based on years of potential life lost for the United States.

The ranking of the leading causes of years of potential life lost was different from the ranking of numbers of deaths presented in Table 2.13. Diseases of the heart was the leading cause of death but was

the second leading cause of years of potential life lost below age 75. Cancer was the leading cause of years of potential life lost below age 75 in Michigan but was the second leading cause of death. Unintentional injuries, which was the fifth leading cause of death, was the third leading cause of years of potential life lost. Suicide, which was the ninth leading cause of death in 1997, was the fifth leading cause of potential years of life lost below age 75 in Michigan. Homicide, which was the eleventh leading cause of death in 1997, was the fourth leading cause of potential life lost below age 75 in Michigan.

Rankings of leading causes of potential life lost were similar for Michigan and the United States, with the exception of deaths due to AIDS which ranked fourth nationally but were ranked eleventh in Michigan.

Table 2.20
Rates of Years of Potential Life Lost Below Age 75
Due to the Ten Leading Causes of Death and Selected Other Causes
Michigan Residents, 1997

Michigan Rank	Cause of Death	Rates of Years of Potential Life Lost			1996 U.S. Rank
		Total	Male	Female	
1	Cancer	1,665.0	1,715.2	1,615.8	1
2	Diseases of the Heart	1,382.7	1,868.9	906.4	2
3	Unintentional injuries	922.9	1,295.3	558.2	3
4	Homicide	361.5	568.9	158.4	6
5	Suicide	331.7	566.1	102.1	5
6	Stroke	226.1	245.9	206.8	7
7	Diabetes Mellitus	177.0	195.1	159.2	9
8	Chronic Liver Disease and Cirrhosis	176.3	246.9	107.2	10
9	Chronic Obstructive Pulmonary Diseases and Allied Conditions	161.4	162.7	160.2	8
10	Pneumonia and Influenza	120.9	146.8	95.5	11
11	(AIDS)	117.1	196.9	38.9	4

Note: Rates are per 100,000 population. Records with sex unspecified are included only in the total column. The U.S. rank is based on a 10 percent sample of provisional data.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH
Health, United States 1996-1997, Table 32.

INFANT DEATHS

Trends Of the 82,994 deaths occurring to Michigan residents in 1997, 1,085 occurred to individuals less than one year of age. The rate of death for infants under the age of one year has dropped considerably since 1900. In that year there were 157 infant deaths for every 1,000 live births (Figure 2.7). This rate fell below 100 by 1914 (96.8), to less than 70 by 1927 (67.7), then to less than 50 by 1935 (47.7).

During the 1940s 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 1950s and 1960s (Table 2.21). It was not until 1971 that the rate dropped below 20 (to 19.5). The rate of decline since 1970 compares favorably with the rate of decline observed before 1950. By 1993 the rate had fallen below 10 (to 9.5) and continued to decline to 8.0 in 1996. The rate increased slightly in 1997 to 8.1. In the seven years since 1990, the infant death rate has fallen 24 percent.

Michigan and United States Comparison During the period 1915-1928, the infant mortality rate for Michigan was above that for the United States for 9 of these 14 years. From 1929 through 1969, Michigan's infant death rate was consistently below the national rate. From 1970 through 1975, the infant mortality rate in Michigan was slightly higher than the rate for the nation. From 1976 through 1980

Table 2.21
Infant Deaths and Infant Death Rates
Michigan and United States Residents
Selected Years, 1950 - 1997

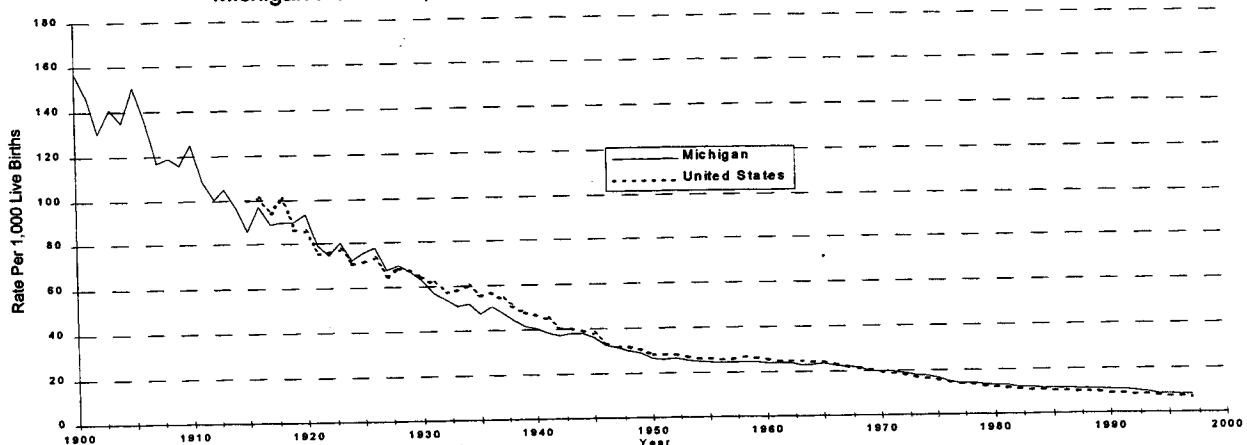
United States		Year	Michigan	
Number	Rate		Number	Rate
103,825	28.6	1950	4,214	26.3
110,873	26.0	1960	4,704	24.1
74,667	20.0	1970	3,492	20.3
45,526	12.6	1980	1,851	12.8
38,351	9.2	1990	1,638	10.7
36,766	8.9	1991	1,554	10.4
34,628	8.5	1992	1,460	10.2
33,466	8.4	1993	1,319	9.5
31,710	8.0	1994	1,184	8.6
29,203	7.6	1995	1,110	8.3
28,487	7.3	1996	1,072	8.0
27,691	7.1	1997	1,085	8.1

Note: Rates are per 1,000 live births. 1997 U.S. data are provisional.

Source: 1950-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

the rates for the state and nation were similar. Since 1980 the rate for Michigan has been 5 to 20 percent above the national rate. The provisional rate for the United States in 1997 was 7.1 infant deaths per 1,000 live births. The Michigan rate of 8.1 was 14 percent higher than the national provisional rate in 1997 (Table 2.21).

Figure 2.7
Infant Mortality Rates
Michigan Residents, 1900 - 1997 and United States Residents, 1915 - 1997



Note: Rates are per 1,000 live births. 1997 U.S. data are provisional.

Source: 1900-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Early Infant Deaths Table 2.22 shows the numbers of infant deaths and infant death rates by age at death for Michigan for the period 1970-1997. The number of infants who died during the first week of life in 1997 (587) is greater than the number of deaths of infants aged 7-364 days (498). In 1997, 69 percent of all Michigan infant deaths occurred

within the first four weeks of life and 41 percent occurred to infants less than one day old.

A review of Table 2.22 reveals that the 60 percent decline in the infant mortality rate since 1970 stems largely from reductions in the rate of death for those under one week of age.

Table 2.22
Infant Deaths and Infant Death Rates by Age at Death
 Michigan Residents, Selected Years, 1970 - 1997

Year	Age at Death									
	Total Infant Deaths		< 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
1980	1,851	12.8	790	5.4	310	2.1	184	1.3	567	3.9
1990	1,638	10.7	673	4.4	219	1.4	181	1.2	565	3.7
1991	1,554	10.4	663	4.4	182	1.2	158	1.1	551	3.7
1992	1,460	10.2	648	4.5	173	1.2	141	1.0	498	3.5
1993	1,319	9.5	551	3.9	157	1.1	148	1.1	463	3.3
1994	1,184	8.6	521	3.8	136	1.0	118	0.9	409	3.0
1995	1,110	8.3	470	3.5	126	0.9	129	1.0	385	2.9
1996	1,072	8.0	444	3.3	126	0.9	133	1.0	369	2.8
1997	1,085	8.1	444	3.3	143	1.1	161	1.2	337	2.5

Note: Infant death rates are per 1,000 live births.

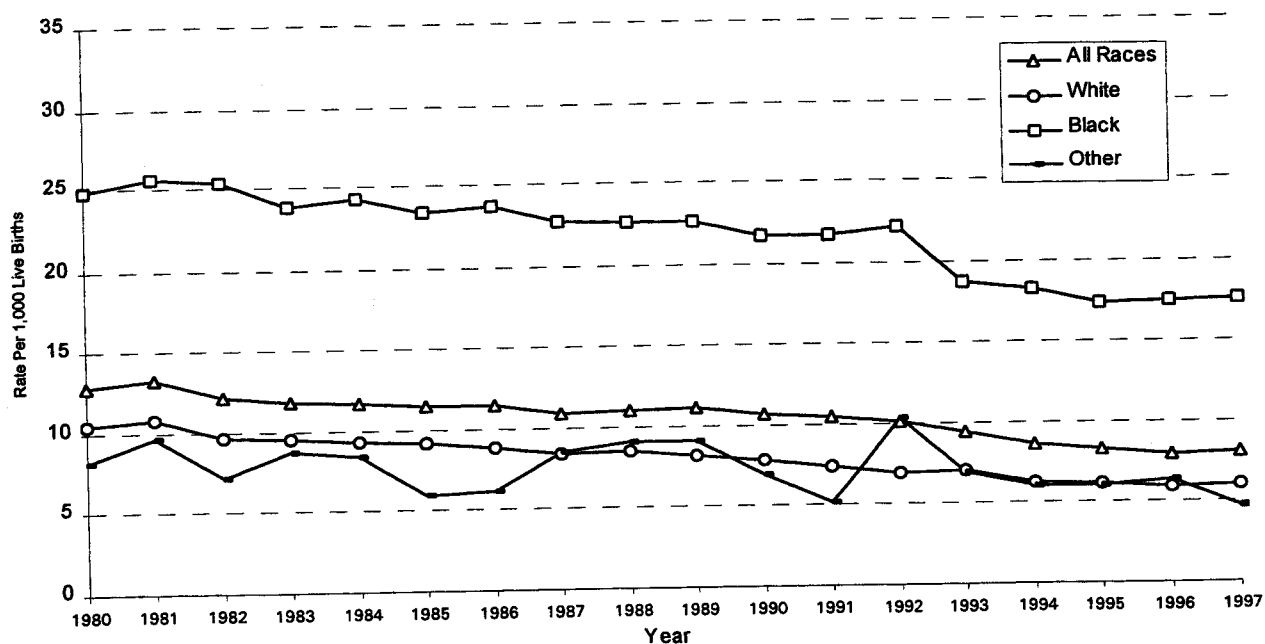
Source: 1970-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Trends in Infant Deaths by Race Infant death rates by race for the years 1980 through 1997 are displayed in Figure 2.8. The rates were calculated using the race of the infant on the death certificate as the numerator and the race of the mother as indicated on the infant's birth record as the denominator.

Black infant death rates were higher than rates for other racial groups throughout the period. The white infant mortality rate dropped 41 percent between

1980 and 1997, while for black infants the decline was 29 percent. The decline in black infant death rates was 20 percent from 1992 to 1997. The white infant death rate fell 13 percent from 1992 to 1997. The rate for black infants of 24.8 in 1980 was 2.4 times higher than that for white infants (10.4). By 1997 the mortality rate for black infants (17.6) was 2.9 times higher than the rate for white infants (6.1) due to the slower decline in the mortality rates experienced by black infants than white infants during the 17-year period.

Figure 2.8
Infant Death Rates by Race
 Michigan Residents, 1980 - 1997



Note: Rates are per 1,000 live births.

Source: 1980-1997 Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Infant Death Rates In Table 2.23 infant, hebdomadal, fetal and perinatal deaths are presented by race and ancestry. Rates for black and American Indian infants and infants of Hispanic ancestry were higher than the white rate.

Hebdomadal Death Rates The death rate during the first week of life was 2.8 times higher for black infants than white infants. It was 2.4 times higher for American Indians and somewhat higher for Arabs and Hispanics.

Fetal Death Rates The fetal death rates were higher for births to black and American Indian mothers than white mothers. Fetal death rates were also lower for births to Hispanic, Arab and races other than white or black mothers.

Perinatal Death Rates Perinatal deaths are fetal deaths plus hebdomadal deaths. Perinatal death rates were 2.5 times higher for fetuses and infants born to black mothers than white mothers. American Indian perinatal death rates were 2.3 times that of their white counterparts.

Table 2.23
Infant, Hebdomadal, Fetal and Perinatal Death Rates by Specified Race and Ancestry
Michigan Residents, 1997

Race/Ancestry	Live Births	Infant Deaths		Hebdomadal Deaths		Fetal Deaths		Perinatal Deaths	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Races	133,549	1,085	8.1	587	4.4	798	6.0	1,385	10.3
White	104,980	640	6.1	350	3.3	488	4.6	838	7.9
Black	24,201	425	17.6	226	9.3	262	10.7	488	19.9
American Indian	761	9	11.8	6	7.9	8	10.4	14	18.2
All Other Races	2,867	8	2.8	3	*	14	4.9	17	5.9
Unknown	740	3	*	2	*	26	33.9	28	36.6
Arab	2,901	17	5.9	12	4.1	25	8.5	37	12.6
Hispanic	5,440	45	8.3	24	4.4	30	5.5	54	9.9

Note: Infant death and hebdomadal rates are per 1,000 live births. Fetal death and perinatal death rates are per 1,000 live births plus fetal deaths. Rates are calculated using live births by race/ancestry of mother as denominator. Live births are by the race/ancestry of the mother on the birth certificate. Hebdomadal deaths are deaths to infants ages zero to six days. Infant and hebdomadal deaths are by the race on the death certificate. Fetal deaths are by the race of the mother on the fetal death certificate. Perinatal deaths are hebdomadal plus fetal deaths. Perinatal deaths are by mother's race/ancestry on the fetal death certificate or the infant's race/ancestry on the death certificate. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Fetal Death File and Birth File, Division for Vital Records and Health Statistics, MDCH

Causes of Infant Deaths Michigan resident infant deaths in 1997 are listed by cause of death classification and age at death in Table 2.24. Disorders relating to short gestation and unspecified low birthweight was listed as the cause of 221 deaths and was the specific disease category most frequently reported. Congenital anomalies was the second leading cause of death to infants, accounting for 211 deaths. Sudden infant death syndrome was responsible for 138 infant deaths in 1997. Over half of all infant deaths were attributed to these three conditions in 1997.

Causes of Neonatal Deaths For those infant deaths which occurred during the first day of life, over half were attributed to disorders relating to short gestation and unspecified low birthweight, respiratory distress syndrome or other respiratory conditions of newborn. About 1 in 6 deaths in the first day of life were due to congenital anomalies.

The leading causes of death between 1 to 27 days of life were congenital anomalies and respiratory distress syndrome.

Causes of Postneonatal Deaths Sudden infant death syndrome was reported as the cause of 45 percent of the deaths to infants from 1-5 months of age. Sudden infant death syndrome, congenital anomalies and unintentional injuries accounted for 62 percent of the deaths to infants 6-11 months of age.

Causes of Death by Race The cause specific infant death rates were higher for blacks in all cause categories than for whites. Disorders relating to short gestation, congenital anomalies and sudden infant death syndrome were the causes of over 50 percent of the black and white infant deaths (Table 2.25). The rate of infant deaths due to sudden infant death syndrome for black infants was 4 times higher than the rate for white infants.

Causes of Death for Male and Female Infants The death rate for male infants was 17 percent greater than that for female infants (Table 2.26). Death rates for males were higher in all cause categories, except for disorders relating to short gestation and unspecified low birthweight, and unintentional injuries, where the rates for females were 11 and 107 percent higher respectively, than the male rates.

Table 2.24
Infant Deaths by Age at Death and Underlying Cause
Michigan Residents, 1997

Cause of Death (ICD-9 Codes)	Age at Death					
	Total <1 Year	<1 Day	1 - 6 Days	7 - 27 Days	1 - 5 Months	6 - 11 Months
Disorders relating to short gestation and unspecified low birthweight (765)	221	207	9	3	2	-
Congenital anomalies (740-759)	211	73	34	43	46	15
Sudden infant death syndrome (798.0)	138	-	-	4	122	12
Respiratory distress syndrome (769)	88	25	33	24	4	2
Other respiratory conditions of newborn (770)	72	33	14	14	9	2
Unintentional injuries (E800-949)	33	1	2	2	16	12
Homicide (E960-969)	14	-	1	2	9	2
All other causes	308	105	50	69	66	18
Total	1,085	444	143	161	274	63

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.25
Infant Deaths and Infant Death Rates by Race and Underlying Cause
 Michigan Residents, 1997

Cause of Death (ICD-9 Code)	Race							
	All Races		White		Black		All Other Races	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Disorders relating to short gestation and unspecified low birthweight (765)	221	165.5	102	97.2	115	475.2	3	*
Congenital anomalies (740-759)	211	158.0	152	144.8	56	231.4	3	*
Sudden infant death syndrome (798.0)	138	103.3	69	65.7	68	281.0	1	*
Respiratory distress syndrome (769)	88	65.9	48	45.7	39	161.2	1	*
Other respiratory conditions of newborn (770)	72	53.9	49	46.7	20	82.6	2	*
Unintentional injuries (E800-949)	33	24.7	19	18.1	14	57.8	-	-
Homicide (E960-969)	14	10.5	7	6.7	7	28.9	-	-
All other causes	308	230.6	194	184.8	106	438.0	7	192.9
Total	1,085	812.4	640	609.6	425	1,756.1	17	468.6

Note: Rates are per 100,000 live births. Numbers of infant deaths are by race of infant; rates are calculated using live births by race of mother as the denominator. Records with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 2.26
Infant Deaths and Infant Death Rates by Sex of Infant and Underlying Cause
 Michigan Residents, 1997

Cause of Death (ICD-9 Code)	Sex of Infant					
	Total		Male		Female	
	Number	Rate	Number	Rate	Number	Rate
Disorders relating to short gestation and unspecified low birthweight (765)	221	165.5	106	155.7	113	172.6
Congenital anomalies (740-759)	211	158.0	108	158.7	101	154.2
Sudden infant death syndrome (798.0)	138	103.3	88	129.3	50	76.4
Respiratory distress syndrome (769)	88	65.9	55	80.8	33	50.4
Other respiratory conditions of newborn (770)	72	53.9	45	66.1	27	41.2
Unintentional injuries (E800-949)	33	24.7	11	16.2	22	33.6
Homicide (E960-969)	14	10.5	8	11.8	6	9.2
All other causes	308	230.6	173	254.2	135	206.2
Total	1,085	812.4	594	872.7	487	743.7

Note: Rates are per 100,000 live births. Numbers of infant deaths are by sex of infant; rates are calculated using live births by sex as the denominator. Records with sex not stated are included only in the "Total" column. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Infant Deaths by Birth Characteristics Infants that died in 1997 were born in 1996 or 1997. These infants can be characterized by the information on their birth certificates. Death rates are calculated using birth characteristics of 1997 live births and 1997 infant deaths.

Infant Deaths by Mother's Age In 1997, the mortality rates were lower for infants born to white women over 19 years of age, than for infants born to white women under 20 years of age. The mortality rates for infants born to black women between 20 and 29 years of age were somewhat higher than the rates for infants born to black women less than 20 and over 29 years of age. Rates for black infants were significantly above those for the white group in all age groups with a sufficient number of events to calculate rates.

Table 2.27
Infant Deaths, Live Births and Infant Death Rates by Age and Race of Mother
 Michigan Residents, 1997

Age of Mother in Years	All Races			White			Black			All Other Races		
	Live Births	Infant Deaths	Infant Death Rate	Live Births	Infant Deaths	Infant Death Rate	Live Births	Infant Deaths	Infant Death Rate	Live Births	Infant Deaths	Infant Death Rate
All Ages	133,549	1,085	8.1	104,980	640	6.1	24,201	425	17.6	3,628	17	4.7
<15	278	7	25.2	90	2	*	179	4	*	8	1	*
15-19	15,358	173	11.3	9,964	88	8.8	5,097	82	16.1	254	3	*
20-24	31,164	264	8.5	22,778	133	5.8	7,573	126	16.6	689	5	*
25-29	39,403	293	7.4	32,115	185	5.8	5,816	107	18.4	1,242	1	*
30-39	44,991	300	6.7	38,105	209	5.5	5,208	83	15.9	1,360	5	*
40 +	2,333	24	10.3	1,914	9	4.7	323	13	40.2	74	2	*

Note: Rates are per 1,000 live births. Records with age of mother not stated are included only in "All Ages" row. Records with race not stated are included only in the "All Races" column. Numbers of infant deaths are by race of infant; rates are calculated using live births by race of mother as the denominator. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth and Infant Death Matched Files, Division for Vital Records and Health Statistics, MDCH

Infant Deaths by Adequacy of Prenatal Care
 Infant death rates increased when the pregnant women received less than adequate prenatal care as measured by the Kessner Index (Table 2.28). The infant death rate was 3 times greater for pregnant women with inadequate care (18.9 deaths per 1,000 live births) than for pregnant women with adequate care (6.3 deaths per 1,000 live births) in 1997.

The pattern was similar for both white and black infants. When the pregnant women 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 (14.5) was still 2.9 times greater than for infants born to white pregnant women (5.0 deaths per 1,000 live births).

Table 2.28
Infant Deaths, Live Births and Infant Death Rates by Level of Prenatal Care and Race
 Michigan Residents, 1997

Level of Care (Kessner Index)	All Races			White			Black			All Other Races		
	Live Births	Infant Deaths	Infant Death Rate	Live Births	Infant Deaths	Infant Death Rate	Live Births	Infant Deaths	Infant Death Rate	Live Births	Infant Deaths	Infant Death Rate
Total	133,549	1,085	8.1	104,980	640	6.1	24,201	425	17.6	3,628	17	4.7
Adequate	101,389	639	6.3	83,950	421	5.0	14,344	208	14.5	2,636	7	2.7
Intermediate	20,649	207	10.0	14,545	104	7.2	5,404	96	17.8	590	7	11.9
Inadequate	10,763	203	18.9	6,017	94	15.6	4,209	106	25.2	374	3	*

Note: Rates are per 1,000 live births. Records with race not stated are included only in the "All Races" column. Records with unknown level of care are included only in the "Total" row. Numbers of infant deaths are by race of infant; rates are calculated using live births by race of mother as the denominator. 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). See Technical Notes. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth and Infant Death Matched Files, Division for Vital Records and Health Statistics, MDCH

Infant Deaths by Birthweight Infant death rates by race, birthweight and age at death are displayed in Table 2.29. While the overall infant death rate for black infants was 2.9 times that of white infants, the rate for black infants born weighing less than 750 grams was only slightly higher than that of white infants. The rates for black infants weighing 750 to 1,499 grams were slightly lower than the rate for their white counterparts. For infants weighing 2,500 grams or more the rate for black infants was 2.2 times the rate 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 infants born to black women were born at weights below 2,500 grams (13.2 percent for infants born to black women compared to 6.5 percent for infants born to white women).

Overall, neonatal death rates were nearly three times higher for black infants than white infants. However the neonatal death rate for white infants with a birthweight below 750 grams was nearly identical to the corresponding black infant death rates. The rates for black infants born between 750 to 1,499 grams were lower than the rates for white infants. The neonatal rate was higher for black infants with birthweights of 1,500 grams or greater. After 28 days of life, the death rates were generally higher for black infants than white infants.

The postneonatal death rates are progressively higher as birthweight is lower but are less progressive than the neonatal rates.

Table 2.29
Live Births, Infant Deaths and Infant Death Rates by Birthweight, Age at Death and Race
Michigan Residents, 1997

Birthweight	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	133,549	1,085	8.1	748	5.6	337	2.5
	White	104,980	640	6.1	453	4.3	187	1.8
	Black	24,201	425	17.6	282	11.7	143	5.9
	All Other	3,628	17	4.7	11	3.0	6	1.7
Less than 750 Grams	All Races	684	441	644.7	423	618.4	18	26.3
	White	356	227	637.6	223	626.4	4	*
	Black	307	205	667.8	192	625.4	13	42.3
	All Other	9	7	777.8	6	666.7	1	*
750-1,499 Grams	All Races	1,411	133	94.3	89	63.1	44	31.2
	White	881	86	97.6	67	76.0	19	21.6
	Black	489	45	92.0	21	42.9	24	49.1
	All Other	35	2	*	1	*	1	*
1,500-2,499 Grams	All Races	8,240	135	16.4	70	8.5	65	7.9
	White	5,551	79	14.2	46	8.3	33	5.9
	Black	2,407	54	22.4	23	9.6	31	12.9
	All Other	221	2	*	1	*	1	*
2,500 + Grams	All Races	122,928	333	2.7	131	1.1	202	1.6
	White	98,005	221	2.3	93	0.9	128	1.3
	Black	20,916	105	5.0	35	1.7	70	3.3
	All Other	3,357	6	1.8	3	*	3	*

Note: Infant death rates are per 1,000 live births. Records with birthweight not stated are included only in the "Total" row. Records with race not stated are included only in the "All races" rows. Numbers of infant deaths are by race of infant; rates are calculated using live births by race of mother as the denominator. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth and Infant Death Matched Files, Division for Vital Records and Health Statistics, MDCH

Causes of Infant Death by Maternal Smoking Status and Race The infant mortality rate for infants born to white women who reportedly smoked or used tobacco products during their pregnancy was 73 percent higher than the rate for infants born to white women who reportedly did not smoke during their pregnancy. Similarly, the rate for infants born to black women who reportedly smoked was 81 percent higher (Table 2.30).

Death rates were higher for most causes if the woman smoked during her pregnancy. The rate of death due to disorders relating to short gestation/low birthweight and SIDS rates were 1.4 and 2.7 times higher, respectively, for black women who smoked. SIDS rates for white infants were 4.3 times greater to women who smoked while pregnant than for women who did not smoke.

Table 2.30
**Infant Deaths and Infant Death Rates by Race of Mother,
 Smoking Status During Pregnancy and Underlying Cause of Death
 Michigan Residents, 1997**

Cause of Death (ICD-9 Code)	All Races				White				Black			
	Smokers		Non-smokers		Smokers		Non-smokers		Smokers		Non-smokers	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Sudden infant death syndrome (798.0)	54	2.3	81	0.7	32	1.7	37	0.4	22	5.7	43	2.1
Congenital anomalies (740-759)	34	1.5	168	1.5	29	1.5	116	1.3	5	*	49	2.4
Disorders relating to short gestation and unspecified low birthweight (765)	48	2.1	154	1.4	24	1.3	68	0.8	22	5.7	84	4.1
Respiratory distress syndrome (769)	21	0.9	61	0.6	11	0.6	31	0.4	10	2.6	29	1.4
Other respiratory conditions of newborn (770)	22	0.9	48	0.4	15	0.8	32	0.4	7	1.8	13	0.6
Other Perinatal Conditions (760-764;766-768;771-779)	35	1.5	149	1.4	20	1.1	9	0.1	14	3.6	53	2.6
Unintentional injuries (E800-949)	19	0.8	12	0.1	12	0.6	6	0.1	7	1.8	6	0.3
All other causes	40	1.7	82	0.7	31	1.6	22	0.3	16	4.2	24	1.2
Total	273	11.8	755	6.8	166	8.8	438	5.1	103	26.8	301	14.8

Note: Infant death rates per 1,000 live births. Numbers of infant deaths are by race of infant; rates are calculated using live births by race of mother as denominator. Records with cause of death pending are included only in the "Total" row. Records for other races or with race not stated are included only in the "All Races" column. Asterisk (*) indicates that data do not meet the standards of precision or reliability. Records with mother's smoking status not stated are not included on this table.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Birth File and Infant Death Matched File. Division for Vital Records and Health Statistics, MDCH

Perinatal Deaths by Maternal Age and Race

Perinatal deaths are fetal deaths plus deaths to individuals less than seven days of age. For total births in 1997, Michigan resident perinatal deaths numbered 1,385 and the perinatal death rate was 10.3 per 1,000 total births (Table 2.31). As with infant death rates, perinatal death rates vary considerably with race and age of woman. The overall perinatal mortality rate for black fetuses and infants was 2.5 times the rate for white fetuses and infants.

There was an increased risk of a perinatal death for women under 20 years of age and over 40 years. These rates are lowest for white women ages 20-29

and for black women 20-24 years. Rates for white and black women increased with the woman's age.

Perinatal Deaths by Adequacy of Prenatal Care

The perinatal death rates increased for women with less than adequate prenatal care (Table 2.32). The death rate was 3.1 times higher for women with inadequate care than for women with adequate care (21.7 vs. 7.0 deaths per 1,000 total births). The perinatal death rate for fetuses and infants born to black women with adequate care was more than double the comparable rate for fetuses and infants born to white women.

Table 2.31
Perinatal Deaths, Total Births and Perinatal Death Rates by Age and Race of Mother
Michigan Residents, 1997

Age of Mother in Years	All Races			White			Black			All Other Races		
	Total Births	Perinatal Deaths	Perinatal Death Rate	Total Births	Perinatal Deaths	Perinatal Death Rate	Total Births	Perinatal Deaths	Perinatal Death Rate	Total Births	Perinatal Deaths	Perinatal Death Rate
All Ages	134,347	1,385	10.3	105,468	838	7.9	24,463	488	19.9	3,650	31	8.5
<15	280	8	28.6	91	3	*	180	4	*	8	1	*
15-19	15,451	179	11.6	10,008	82	8.2	5,143	91	17.7	257	6	23.3
20-24	31,331	292	9.3	22,877	163	7.1	7,631	118	15.5	693	5	*
25-29	39,578	335	8.5	32,221	207	6.4	5,873	116	19.8	1,250	8	6.4
30-39	45,254	445	9.8	38,301	327	8.5	5,258	97	18.4	1,367	9	6.6
40 +	2,352	32	13.6	1,926	17	8.8	329	12	36.5	74	2	*

Note: Records with age of mother not stated are included only in "All Ages" row. Records with race not stated are included only in the "All Races" column. Numbers of infant deaths are by race of infant; rates are calculated using the sum of live births and fetal deaths by race of mother as the denominator. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Infant Death Matched File, Fetal Death File and Birth File, Division for Vital Records and Health Statistics, MDCH

Table 2.32
Perinatal Deaths, Total Births and Perinatal Death Rates by Level of Prenatal Care and Race of Mother
Michigan Residents, 1997

Level of Care (Kessner Index)	All Races			White			Black			All Other Races		
	Total Births	Perinatal Deaths	Perinatal Death Rate	Total Births	Perinatal Deaths	Perinatal Death Rate	Total Births	Perinatal Deaths	Perinatal Death Rate	Total Births	Perinatal Deaths	Perinatal Death Rate
Total	134,347	1,385	10.3	105,468	838	7.9	24,463	488	19.9	3,650	31	8.5
Adequate	101,755	708	7.0	84,222	494	5.9	14,414	185	12.8	2,651	18	6.8
Intermediate	20,802	253	12.2	14,633	137	9.4	5,461	104	19.0	595	9	15.1
Inadequate	10,877	236	21.7	6,060	108	17.8	4,279	125	29.2	374	2	*

Note: Records with race not stated are included only in the "All Races" column. Records with unknown level of care are included only in the "Total" row. Numbers of infant deaths are by race of infant; rates are calculated using the sum of live births and fetal deaths by race of mother as the denominator. 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). Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Care should be taken in drawing inferences from rates based on small numbers of events or a small population base. These rates tend to exhibit considerable variation which may negate their usefulness for comparative purposes.

Source: 1997 Michigan Resident Infant Death Matched File, Fetal Death and Birth File, Division for Vital Records and Health Statistics, MDCH

MARRIAGE & DIVORCE

SECTION III



MARRIAGE AND DIVORCE

An Overview, 1997

Total Marriages	66,974
Total Divorces and Annulments	38,202
Marriage Rate (persons involved per 1,000 population)	13.7
Divorce Rate (persons involved per 1,000 population)	7.8
Median Age of the Bride	27
Median Age of the Groom	29
Median Age of Wife at Divorce Decree	36
Median Age of Husband at Divorce Decree	38
Median Duration of Marriage at Divorce Decree	7 years
Estimated Number of Children Involved in Divorce	36,460

Source: 1997 Michigan Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

RESIDENCE OF COUPLES MARRYING IN MICHIGAN

When presenting birth and death statistics, it is possible to provide total resident figures due to an interstate agreement for exchange of nonresident event information. 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.

In general, most of the couples marrying in Michigan are residents of the state. For marriages occurring in Michigan in 1997, 95 percent of the brides were residents of Michigan, while 93 percent of the grooms were residents of the state. These data indicate that the general characteristics of marriages occurring in Michigan should be representative of marriage patterns for Michigan residents.

KEY TRENDS

The number of marriages and divorces occurring in Michigan has increased considerably since 1900. The frequency of marriage has generally followed the growth of Michigan's population. The rate of persons dissolving their marriages has increased fourfold since 1900.

The smallest number of marriages in this century was 23,295 in 1900, while the largest number was 94,486 in 1973. In 1997 there were 66,974 marriages, the lowest number since 1962. The marriage rate in 1997 was 13.7 per 1,000 population, a three percent decline from the 1996 rate of 14.1.

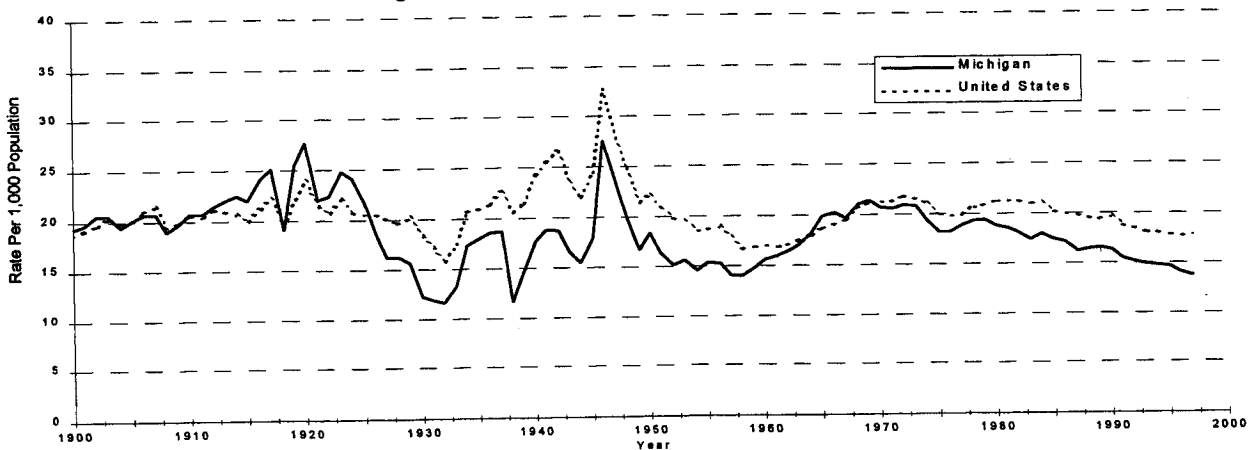
The number of divorces and annulments increased from a low of 2,435 in 1900 to a high of 45,047 in 1980. In 1997 the number of divorces and annulments was 38,202. The divorce rate was 7.8 per 1,000 population, a twenty percent decrease since 1980. An estimated 36,460 children less than 18 years of age were involved in a divorce in 1997.

MARRIAGES

Since 1900 there have been noticeable changes in the marriage rates both nationally and in Michigan (Table 3.1 and Figure 3.1). Both nationally and in Michigan, 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 1930s.

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.

Figure 3.1
Marriage Rates
Michigan and United States Occurrences, 1900-1997



Note: Rates are the number of persons married per 1,000 population. 1991-1997 U.S. data are provisional.

Source: 1900-1997 Michigan Occurrence Marriage Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

MONTH OF MARRIAGE

The number of marriages occurring in Michigan varies with the seasons (Figure 3.2). The most popular months for marriages in 1997 were August, June and September, with 9,741, 8,289 and 7,475 marriage ceremonies being performed during these months, respectively. About 2 out of every 3 marriages occurred in the six months between May and October. Fewer marriages occurred during the winter months. The lowest figure was for January, with 22 percent of the number which occurred in August.

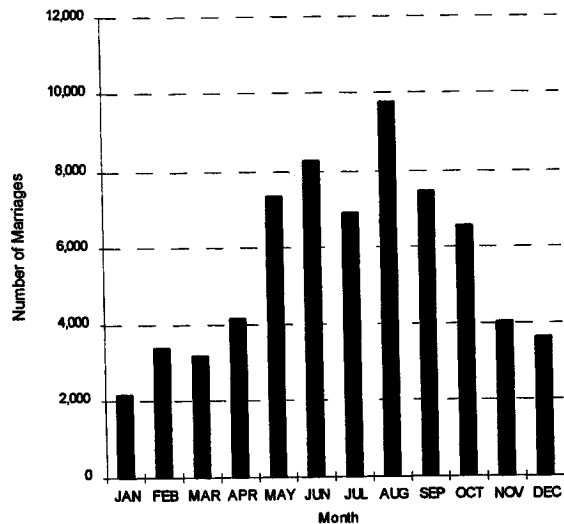
Table 3.1
Marriages and Marriage Rates
Michigan and United States Occurrences
Selected Years, 1900 - 1997

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
2,158,802	21.2	1970	91,933	20.7
2,390,252	21.2	1980	86,898	18.8
2,443,489	19.6	1990	76,099	16.3
2,371,000Pr	18.8Pr	1991	72,747	15.5
2,362,000Pr	18.5Pr	1992	71,322	15.1
2,334,000Pr	18.1Pr	1993	70,771	14.9
2,362,000Pr	18.1Pr	1994	70,966	14.8
2,336,000Pr	17.8Pr	1995	71,042	14.7
2,344,000Pr	17.7Pr	1996	68,598	14.1
2,384,000Pr	17.8Pr	1997	66,974	13.7

Note: Rates are the number of persons married per 1,000 population. Beginning with 1978, marriage data for the U.S. 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. 1991-1997 U.S. data are provisional.

Source: 1900-1997 Michigan Occurrence Marriage Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Figure 3.2
Marriages by Month
Michigan Occurrences, 1997



Source: 1997 Michigan Occurrence Marriage File, Division for Vital Records and Health Statistics, MDCH

AGE AT MARRIAGE

Females generally marry at a younger age than do males (Table 3.2). The number of females who marry before the age of 20 was 2.8 times the corresponding number of males in 1997. Between ages 20 and 24, 33 percent more females than males married. Among persons 25 and over, the number of males marrying was greater than females marrying. The median age of brides (27 years) marrying in Michigan was two years lower than the median age for grooms (29 years).

Since 1977, 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 80 percent. For individuals between 25 and 39 years of age, the marriage rate for males and females increased. The rates for persons 45 and over were about the same for males and females during these 20 years.

Table 3.2
Number of Marriages and Marriage Rates by Age and Sex
Michigan Occurrences, 1977, 1987 and 1997

Age in Years	Males				Females			
	1977 Rate	1987 Rate	1997		1977 Rate	1987 Rate	1997	
			Number	Rate			Number	Rate
< 20	20.1	7.7	1,453	4.0	48.5	21.5	4,078	11.6
20-24	82.1	57.2	13,866	43.1	76.6	68.7	18,436	57.8
25-34	38.0	40.5	30,473	43.2	26.8	33.0	27,176	37.3
35-44	16.5	16.8	12,438	15.3	11.8	12.9	11,081	13.4
45 +	6.4	5.8	8,744	5.8	3.6	3.0	6,203	3.5
Total	19.2	16.7	66,974	14.1	18.6	15.7	66,974	13.4
Median age at last birthday	25	27	29		23	25	27	

Note: Rates are the number of persons married per 1,000 population. The 15-19 population age group is used to calculate the rates for the marriages to persons under 20 years of age.

Source: 1977, 1987 and 1997 Michigan Occurrence Marriage Files, Division for Vital Records and Health Statistics, MDCH

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 reflects the propensity of the population as a whole to enter into marital agreements.

There has been a decline in the number of first marriages between 1987 and 1997. The number of first marriages dropped 12 percent for women and 11 percent for men (Tables 3.3 and 3.4).

Changes in the frequency of first marriages have varied in different age groups. The greatest decline in the number of first marriages occurred in the 20-24 year age group for both brides and grooms, between 1987 and 1997. The number of first marriages also declined substantially for brides and grooms in the under 20 age group. There were significant increases in the number of first marriages of both brides and grooms between ages 25 and 44. Between 1987 and 1997 the percentages of marriages which were first marriages increased for each age group, except for males 25-29.

Table 3.3
Number of Marriages of Brides by Age and Order of Marriage
Michigan Occurrences, 1987 and 1997

Age in Years	1987					1997				
	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	74,418	49,831	67.0	18,996	5,584	66,974	43,875	65.5	17,067	6,027
< 20	8,000	7,923	99.0	74	2	4,078	4,052	99.4	25	1
20-24	26,515	24,632	92.9	1,826	56	18,436	17,518	95.0	889	28
25-29	17,747	12,549	70.7	4,696	502	17,593	14,152	80.4	3,156	282
30-34	9,045	3,421	37.8	4,442	1,181	9,583	4,939	51.5	3,832	811
35-39	5,275	863	16.4	3,150	1,262	6,621	2,050	31.0	3,331	1,240
40-44	3,213	249	7.7	1,901	1,062	4,460	733	16.4	2,361	1,366
45 +	4,616	190	4.1	2,904	1,519	6,203	431	6.9	3,473	2,299
Median age at last Birthday	25	23	000	33	39	27	25	000	35	42

Note: Marriages with the age of bride not stated are included only in the "All Ages" row.

Source: 1987 and 1997 Michigan Occurrence Marriage Files, Division for Vital Records and Health Statistics, MDCH

Table 3.4
Number of Marriages of Grooms by Age and Order of Marriage
Michigan Occurrences, 1987 and 1997

Age in Years	1987					1997				
	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	74,418	49,220	66.1	19,224	5,974	66,974	44,056	65.8	17,023	5,886
< 20	2,959	2,953	99.8	6	-	1,453	1,450	99.8	1	2
20-24	21,564	20,841	96.6	708	15	13,866	13,520	97.5	334	12
25-29	20,947	17,241	82.3	3,491	215	19,035	16,744	88.0	2,166	122
30-34	11,032	5,756	52.2	4,462	814	11,438	7,508	65.6	3,501	425
35-39	6,480	1,629	25.1	3,618	1,232	7,503	3,039	40.5	3,580	883
40-44	4,190	452	10.8	2,490	1,248	4,935	1,160	23.5	2,591	1,184
45 +	7,242	346	4.8	4,447	2,449	8,744	635	7.3	4,850	3,258
Median age at last birthday	27	25	000	36	42	29	26	000	38	45

Note: Marriages with the age of groom not stated are included only in the "All Ages" row.

Source: 1987 and 1997 Michigan Occurrence Marriage Files, Division for Vital Records and Health Statistics, MDCH

MEDIAN AGE AT FIRST MARRIAGE

The median age at first marriage declined for both brides and grooms between 1953 and the mid-1960s (Figure 3.3). The initial decline was greater for grooms than for brides.

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 grooms and brides. Grooms were 21 months older than brides at the median in 1997.

The median age at first marriage in 1997 was 24 years 1 month for brides and 25 years 10 months for grooms.

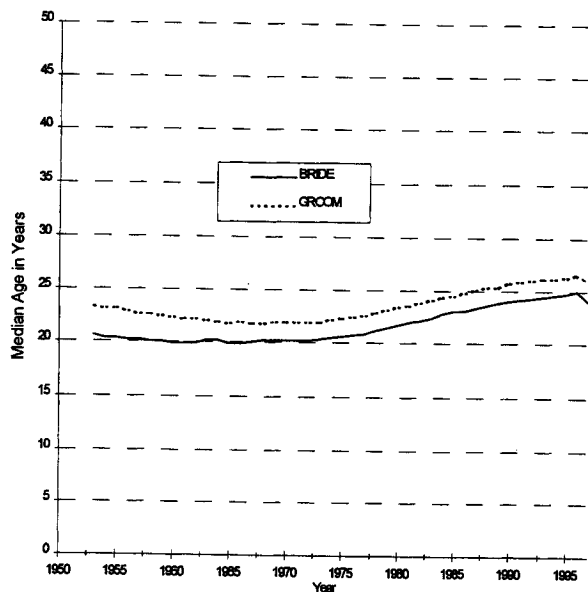
REMARRIAGES

The proportion of all marriages which were remarriages is displayed graphically in Figure 3.4 for the period 1960-1997. Between 1960 and 1965, the proportion of remarriages dropped. Since 1965, this proportion has increased.

The number of remarriages among brides decreased by six percent between 1987 and 1997, while the number of brides who had been married at least three times previously increased by eight percent. Total remarriages for grooms decreased by nine percent, while the number of third or higher order marriages decreased.

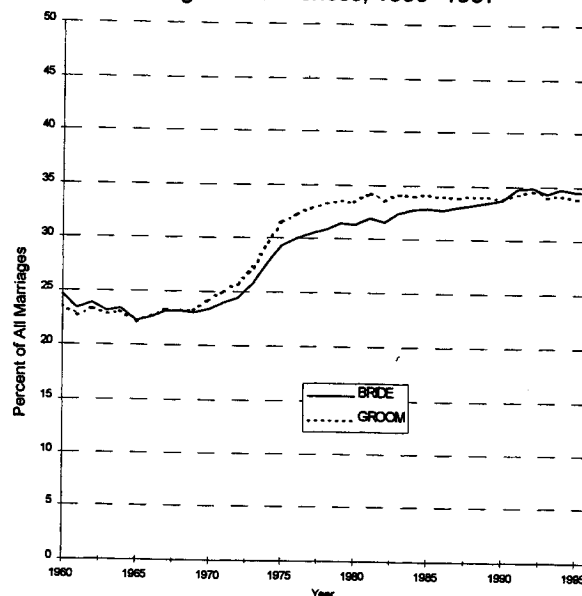
The median age at second and later marriages increased between 1987 and 1997 (Tables 3.3 and 3.4).

Figure 3.3
Median Age at First Marriage by Sex
Michigan Occurrences, 1953 -1997



Source: 1953 through 1997 Michigan Occurrence Marriage Files, Division for Vital Records and Health Statistics, MDCH

Figure 3.4
Percent of All Marriages That Are Remarriages
Michigan Occurrences, 1960 -1997



Source: 1960 through 1997 Michigan Occurrence Marriage Files, Division for Vital Records and Health Statistics, MDCH

DIVORCES AND ANNULMENTS

The number of reported divorces and annulments reached a record high in 1981 in the nation and in 1980 in Michigan. Between 1980 and 1985, the Michigan frequency declined. The number then increased to 40,568 in 1990 and decreased to 38,202 in 1997. The 1997 frequency was 15 percent below the 1980 frequency. Nationally, the provisional number of divorces in 1997 was 1,163,000.

The number of persons divorced in Michigan per 1,000 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 3.5). 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 and increased to a high of 9.8 in 1978. It fluctuated between 8.3 and 8.7 from 1982 until 1995. The 1996 and 1997 rate of 7.8 is the lowest since 1972.

The national rates generally followed the same pattern, reaching a provisional rate of 8.6 in 1997. Michigan's divorce rate was higher than that for the United States each year from 1900 through 1947. In the following 49 years the Michigan divorce rate has been at or below the national rate 43 times, including each of the past 27 years. The lowest national rate was 1.5 in 1900. The highest national divorce rates during this century was recorded in 1979 and 1981 (10.6).

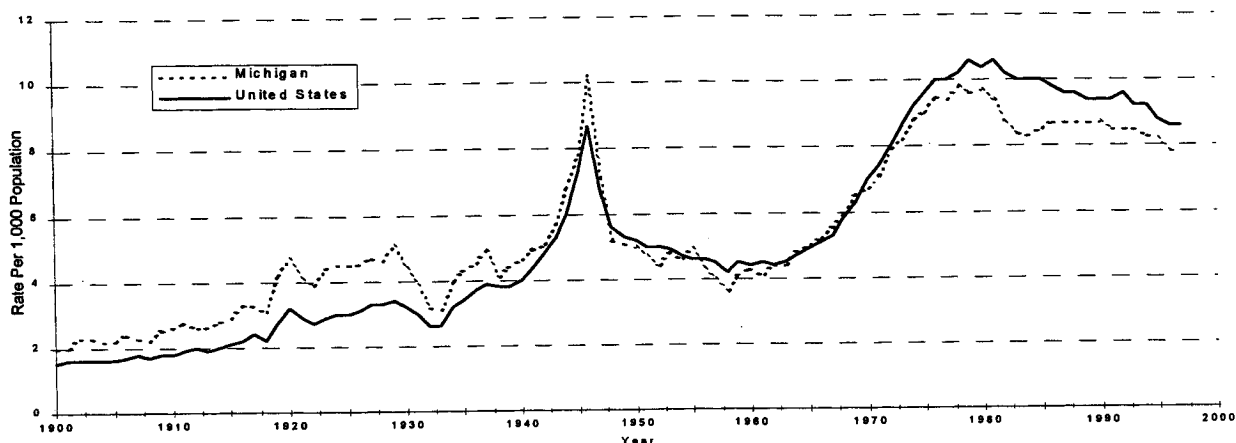
Table 3.5
Number of Divorces and Annulments
Divorce and Annulment Rates
Michigan and United States Occurrences
Selected Years, 1900 - 1997

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
385,000	5.2	1950	15,979	5.0
393,000	4.4	1960	16,656	4.3
708,000	7.0	1970	29,934	6.7
1,189,000	10.4	1980	45,047	9.7
1,182,000	9.4	1990	40,568	8.7
1,187,000	9.4	1991	40,103	8.5
1,215,000	9.6	1992	40,425	8.5
1,187,000	9.2	1993	40,470	8.5
1,191,000	9.2	1994	39,795	8.3
1,169,000	8.8	1995	39,449	8.2
1,150,000	8.6	1996	38,169	7.8
1,163,000	8.6	1997	38,202	7.8

Note: Rates are the number of persons whose marriage ended in divorce or annulment per 1,000 population. 1991-1997 U.S. data are provisional.

Source: 1900-1997 Michigan Occurrence Divorce Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

Figure 3.5
Divorce Rates
Michigan and United States Occurrences, 1900-1997



Note: 1991-1997 U.S. data are provisional.

Source: 1900-1997 Michigan Occurrence Divorce Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

The number of children under 18 of couples dissolving marriages in 1997 was at least 36,460 (Table 3.6). This is 26 percent below the peak number of 49,555 in 1976. The number of children affected by divorce as a proportion of all children peaked at 16.9 in 1980 and 1981 (Table 3.6). It fluctuated between 15.0 and 16.3 per 1,000 children

until 1996 when it declined to 14.7. The average number of children per divorce has dropped from a high of 1.37 children in 1971 to 0.95 in 1997.

Data for the United States indicate a similar pattern.

Table 3.6
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 - 1997

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
46,603	1.04	16.9	1980	1,174,000	0.98	17.3
45,461	1.05	16.9	1981	1,180,000	0.97	18.7
41,156	1.04	15.7	1982	1,108,000	0.94	17.6
38,712	1.02	15.2	1983	1,091,000	0.94	17.4
37,629	1.00	15.0	1984	1,081,000	0.92	17.2
38,673	1.00	15.5	1985	1,091,000	0.92	17.3
39,378	1.00	15.9	1986	1,064,000	0.90	16.8
39,321	1.00	15.9	1987	1,038,000	0.89	16.3
39,635	0.99	16.1	1988	1,044,000	0.89	16.4
39,897	0.99	16.3	1989	1,063,000	0.91	16.8
39,792	0.98	16.2	1990	1,075,000	0.90	16.8
39,000	0.97	15.7	1991	---	---	---
39,579	0.98	15.9	1992	---	---	---
39,372	0.97	15.7	1993	---	---	---
38,794	0.97	15.4	1994	---	---	---
38,611	0.98	15.3	1995	---	---	---
37,102	0.97	14.7	1996	---	---	---
36,460	0.95	14.6	1997	---	---	---

Note: 1991-1997 U.S. data are not available

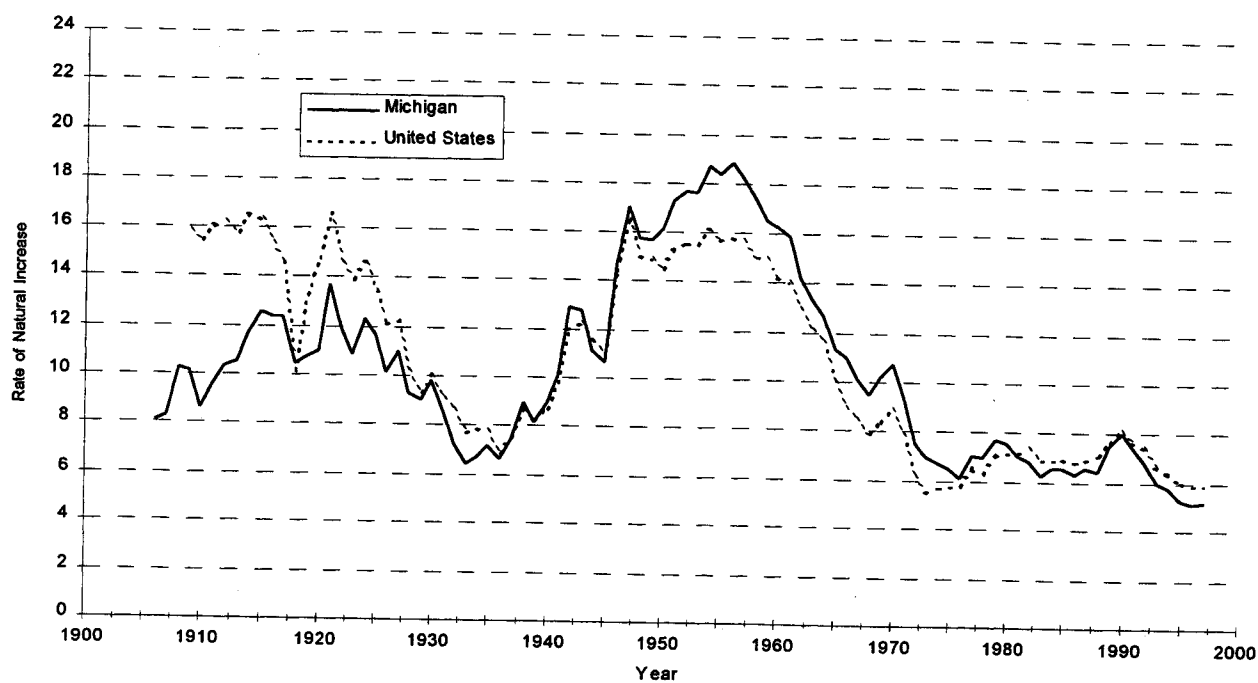
Source: 1980-1997 Michigan Occurrence Divorce Files, Division for Vital Records and Health Statistics, MDCH
Monthly Vital Statistics Report, National Center for Health Statistics

REFERENCE APPENDIX

SECTION IV



Figure 4.1
Rate of Natural Increase
 Michigan, 1906 - 1997 and the United States, 1909 - 1997



Note: The rate of natural increase is the excess of live births over deaths per 1,000 population. 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. 1995-1996 United States data are provisional.

Source: Michigan Resident Birth and Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.1
Population, Live Births, Deaths, Marriages and Divorces
Michigan, 1900 - 1997

Year	Population	Live Births	Deaths							Marriages	Divorces	
			All Ages	<1 Year	<28 Days	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	8,054					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	4,119	2,969	6,791	3,703	636	629	49,788	9,400
1925	4,255,347	98,983	49,417	7,498	4,022	3,476	6,667	3,670	629	629	46,276	9,650
1926	4,372,734	98,289	54,080	7,620	4,054	3,566	6,773	3,816	631	631	39,788	9,795
1927	4,490,121	99,940	50,600	6,766	3,915	2,851	6,794	3,834	667	667	36,276	10,617
1928	4,607,508	97,462	54,755	6,806	3,739	3,067	6,594	3,701	603	603	37,300	10,615
1929	4,724,895	98,695	56,117	6,605	3,777	2,828	6,613	3,710	617	617	36,816	12,094
1930	4,842,325	98,882	51,561	6,213	3,624	2,589	6,518	3,714	597	597	29,482	10,639
1931	4,883,703	90,547	49,068	5,187	3,084	2,103	5,643	3,220	539	539	28,856	9,507
1932	4,925,081	85,254	49,569	4,630	2,798	1,832	5,210	2,980	493	493	28,552	7,889
1933	4,966,459	80,482	48,507	4,094	2,591	1,503	4,906	2,776	447	447	33,132	7,671
1934	5,007,837	83,944	50,440	4,377	2,717	1,660	4,781	2,607	450	450	43,241	10,124
1935	5,049,216	87,403	51,051	4,170	2,550	1,620	4,832	2,717	438	438	45,313	10,844
1936	5,090,594	88,457	54,777	4,479	2,647	1,832	4,726	2,625	425	425	47,023	11,419
1937	5,131,972	91,566	53,468	4,374	2,700	1,674	4,919	2,707	326	326	47,954	12,472
1938	5,173,350	96,962	50,678	4,319	2,734	1,585	4,984	2,732	345	345	30,105	10,646
1939	5,214,728	94,432	52,017	3,952	2,594	1,358	4,706	2,572	280	280	37,725	11,589
1940	5,256,106	99,106	52,092	4,022	2,629	1,393	4,749	2,602	292	292	46,342	12,054
1941	5,437,546	107,498	52,671	4,166	2,687	1,479	4,991	2,769	298	298	50,989	13,317
1942	5,538,856	124,068	52,738	4,606	3,091	1,515	5,581	3,067	260	260	51,582	14,085
1943	5,377,329	125,441	56,774	4,804	2,979	1,825	5,563	3,213	237	237	44,385	15,259
1944	5,377,329	113,586	54,016	4,326	2,784	1,542	5,140	2,874	198	198	41,678	18,356
1945	5,435,092	111,557	53,641	4,008	2,670	1,338	4,906	2,703	166	166	48,329	21,133
1946	5,708,415	138,572	54,856	4,541	3,323	1,218	5,978	3,168	163	163	78,808	29,158
1947	6,069,000	160,275	56,807	5,055	3,677	1,378	6,583	3,422	173	173	71,319	21,386
1948	6,195,000	153,726	56,520	4,617	3,352	1,265	5,968	3,132	120	120	61,986	16,017
1949	6,352,000	156,469	57,107	4,520	3,232	1,288	5,746	2,994	105	105	53,109	16,274

Note: Deaths are exclusive of fetal deaths. Perinatal deaths include deaths under 1 week and fetal deaths. Divorces include annulments. 1971-1979 population estimates have been revised by the U.S. Census Bureau. 1980-1996 population estimates have been revised by the Department of Management & Budget. For years prior to 1950 deaths under 1 month of age are included in deaths under 28 days. 1974 divorce data is estimated.

Source: Michigan Resident Birth, Death and Fetal Death Files and Michigan Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.1 (continued)
Population, Live Births, Deaths, Marriages and Divorces
Michigan, 1900 - 1997

Year	Population	Live Births	Deaths							Marriages	Divorces
			All Ages	<1 Year	<28 Days	28-364 Days	Perinatal	Fetal	Maternal		
1950	6,371,766	160,055	57,567	4,214	3,043	1,171	5,781	3,095	91	58,180	15,979
1951	6,545,000	172,451	59,181	4,505	3,296	1,209	6,088	3,158	94	53,411	15,446
1952	6,708,000	177,835	59,138	4,689	3,414	1,275	6,266	3,224	82	50,487	14,925
1953	6,852,000	182,968	62,087	4,728	3,369	1,339	6,188	3,180	79	53,308	16,537
1954	7,024,000	192,104	60,706	4,795	3,560	1,235	6,415	3,249	94	51,243	16,281
1955	7,236,000	196,294	63,087	4,873	3,707	1,166	6,381	3,029	61	55,698	17,676
1956	7,516,000	206,068	64,352	5,047	3,796	1,251	6,655	3,245	84	57,068	16,228
1957	7,803,000	208,488	66,435	5,093	3,884	1,209	6,668	3,154	79	55,121	15,442
1958	7,866,000	202,690	65,899	4,980	3,789	1,191	6,516	3,101	69	55,159	14,040
1959	7,960,000	198,301	66,812	4,846	3,674	1,172	6,250	2,928	72	58,826	16,168
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	5,139	2,475	54	81,247	20,305
1966	8,314,070	165,794	74,596	3,751	2,830	921	4,909	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	90,984	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	653	2,947	1,438	19	88,023	39,940
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	138,802	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	9,256,110	145,162	74,991	1,851	1,284	567	2,235	1,135	16	86,898	45,047
1981	9,209,287	140,579	75,818	1,851	1,281	570	2,151	1,040	7	85,252	43,167
1982	9,115,196	137,950	75,536	1,672	1,202	470	1,989	954	11	82,633	39,739
1983	9,047,764	133,026	76,639	1,573	1,067	506	1,843	933	6	78,910	37,991
1984	9,049,454	135,782	76,401	1,595	1,100	495	1,884	929	4	80,810	37,563
1985	9,076,287	138,052	78,635	1,575	1,071	504	1,867	953	9	79,022	38,775
1986	9,127,774	137,626	80,177	1,565	1,079	486	1,782	865	11	77,815	39,553
1987	9,187,484	140,466	79,795	1,538	1,029	509	1,701	824	8	74,418	39,857
1988	9,218,002	139,635	80,075	1,542	1,068	474	1,659	761	11	75,386	40,103
1989	9,253,298	148,164	78,566	1,645	1,070	575	1,792	881	13	76,210	40,276
1990	9,310,321	153,080	78,501	1,638	1,073	565	1,722	830	10	76,099	40,568
1991	9,390,166	149,478	79,738	1,554	1,003	551	1,620	775	16	72,747	40,103
1992	9,466,017	143,827	78,916	1,460	962	498	1,576	755	15	71,322	40,425
1993	9,524,255	139,560	82,286	1,319	856	463	1,434	726	8	70,771	40,470
1994	9,579,853	137,844	82,644	1,184	775	409	1,388	731	8	70,966	39,795
1995	9,655,305	134,169	83,405	1,110	725	385	1,363	767	11	71,042	39,449
1996	9,730,925	133,231	83,496	1,072	703	369	1,329	759	5	68,598	38,169
1997	9,773,892	133,549	82,994	1,085	748	337	1,385	798	12	66,974	38,202

Note: Deaths are exclusive of fetal deaths. Perinatal deaths include deaths under 1 week and fetal deaths. Divorces include annulments. 1971-1979 population estimates have been revised by the U.S. Census Bureau. 1980-1996 population estimates have been revised by the Department of Management & Budget. For years prior to 1950 deaths under 1 month of age are included in deaths under 28 days. 1974 divorce data is estimated.

Source: Michigan Resident Birth, Death and Fetal Death Files and Michigan Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.2
Live Birth Rates, Death Rates, Fetal Death Ratios, Marriage and Divorce Rates
Michigan, 1900 - 1997

Year	Live Births	Deaths							Marriages	Divorces
		All Ages	<1 Year	<28 Days	28-364 Days	Perinatal	Fetal	Maternal		
1900	18.1	13.4	157.1				30.3	1,034.3	19.2	2.0
1901	17.6	13.3	146.2				34.7	1,228.6	19.6	2.0
1902	18.2	12.6	130.6				39.4	1,027.5	20.5	2.3
1903	18.1	13.1	141.0				40.2	917.7	19.3	2.2
1904	18.4	13.4	135.1				43.5	885.6	20.1	2.2
1905	18.0	13.3	150.2				40.2	682.6	20.7	2.4
1906	22.1	14.0	135.7				39.9	662.4	20.7	2.3
1907	21.9	13.6	117.0				41.6	679.3	18.9	2.2
1908	23.7	13.5	118.8				39.5	629.6	19.7	2.5
1909	23.2	13.1	115.7							
1910	22.8	14.2	124.8				39.9	672.3	20.7	2.6
1911	22.7	13.1	108.4				41.3	685.9	20.6	2.8
1912	23.3	13.0	100.4				41.8	569.5	21.3	2.6
1913	23.8	13.3	104.8				40.4	722.7	21.9	2.6
1914	24.3	12.7	96.8				40.6	660.5	22.4	2.8
1915	25.0	12.5	85.6				41.4	601.7	21.9	2.9
1916	26.2	13.8	96.7				42.4	577.7	24.1	3.3
1917	26.2	13.8	88.5				39.7	655.3	25.1	3.3
1918	26.1	15.6	89.8				40.4	776.9	19.0	3.1
1919	23.5	12.7	89.9				40.0	687.6	25.4	4.2
1920	25.1	14.2	93.1				40.9	861.8	27.7	4.7
1921	25.4	11.7	79.0				38.2	630.0	21.9	4.1
1922	23.1	11.2	74.7				42.0	611.9	22.3	3.9
1923	23.1	12.3	80.4				39.3	627.2	24.7	4.4
1924	23.7	11.4	72.2	41.9	30.2	66.7	37.7	647.7	24.1	4.5
1925	23.3	11.6	75.7	40.6	35.1	64.9	37.1	635.5	21.7	4.5
1926	22.5	12.4	77.5	41.2	36.3	66.3	38.8	642.0	18.7	4.5
1927	22.3	11.3	67.7	39.2	28.5	65.5	38.4	667.4	16.2	4.7
1928	21.2	11.9	69.8	38.4	31.5	65.2	38.0	618.7	16.2	4.6
1929	20.9	11.9	66.9	38.3	28.7	64.6	37.6	625.2	15.6	5.1
1930	20.4	10.6	62.8	36.6	26.2	63.5	37.6	603.7	12.2	4.4
1931	18.5	10.1	57.3	34.1	23.2	60.2	35.6	595.3	11.8	3.9
1932	17.3	10.1	54.3	32.8	21.5	59.0	35.0	578.3	11.6	3.2
1933	16.2	9.8	50.9	32.2	18.7	58.9	34.5	555.4	13.3	3.1
1934	16.8	10.1	52.1	32.4	19.8	55.2	31.1	536.1	17.3	4.0
1935	17.3	10.1	47.7	29.2	18.5	53.6	31.1	501.1	17.9	4.3
1936	17.4	10.8	50.6	29.9	20.7	51.9	29.7	480.5	18.5	4.5
1937	17.8	10.4	47.8	29.5	18.3	52.2	29.6	356.0	18.7	4.9
1938	18.7	9.8	44.5	28.2	16.3	50.0	28.2	355.8	11.6	4.1
1939	18.1	10.0	41.8	27.5	14.4	48.5	27.2	296.5	14.5	4.4
1940	18.9	9.9	40.6	26.5	14.1	46.7	26.3	294.6	17.6	4.6
1941	19.8	9.7	38.8	25.0	13.8	45.3	25.8	277.2	18.8	4.9
1942	22.4	9.5	37.1	24.9	12.2	43.9	24.7	209.6	18.6	5.1
1943	23.3	10.6	38.3	23.7	14.5	43.2	25.6	188.9	16.5	5.7
1944	21.1	10.0	38.1	24.5	13.6	44.1	25.3	174.3	15.5	6.8
1945	20.5	9.9	35.9	23.9	12.0	42.9	24.2	148.8	17.8	7.8
1946	24.3	9.6	32.8	24.0	8.8	42.2	22.9	117.6	27.6	10.2
1947	26.4	9.4	31.5	22.9	8.6	40.2	21.4	107.9	23.5	7.1
1948	24.8	9.1	30.0	21.8	8.2	38.0	20.4	78.1	20.0	5.2
1949	24.6	9.0	28.9	20.7	8.2	36.0	19.1	67.1	16.7	5.1

Note: 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 100,000 live births. Perinatal mortality rate per 1,000 live births and fetal deaths. 1971-1996 birth, death, marriage and divorce rates have been recalculated using revised population estimates. 1971-1979 population estimates have been revised by the U.S. Census Bureau. 1980-1996 population estimates have been revised by the Department of Management & Budget. For years prior to 1950 deaths under 1 month of age are included in deaths under 28 days. 1974 divorce data is estimated. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Michigan Resident Birth, Death and Fetal Death Files and Michigan Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.2 (continued)
 Live Birth Rates, Death Rates, Fetal Death Ratios, Marriage and Divorce Rates
 Michigan, 1900 - 1997

Year	Live Births	Deaths							Marriages	Divorces
		All Ages	<1 Year	<28 Days	28-364 Days	Perinatal	Fetal	Maternal		
1950	25.1	9.0	26.4	19.0	7.3	35.4	19.3	56.9	18.3	5.0
1951	26.3	9.0	26.1	19.1	7.0	34.7	18.3	54.5	16.3	4.7
1952	26.5	8.8	26.4	19.2	7.2	34.6	18.1	46.1	15.1	4.4
1953	26.7	9.1	25.8	18.5	7.3	33.2	17.4	43.2	15.6	4.8
1954	27.3	8.6	25.0	18.5	6.4	32.8	16.9	48.9	14.6	4.6
1955	27.1	8.7	24.8	18.9	5.9	32.0	15.4	31.1	15.4	4.9
1956	27.4	8.6	24.5	18.4	6.1	31.8	15.7	40.8	15.2	4.3
1957	26.7	8.5	24.4	18.6	5.8	31.5	15.1	37.9	14.1	4.0
1958	25.8	8.4	24.6	18.7	5.9	31.7	15.3	34.0	14.0	3.6
1959	24.9	8.4	24.4	18.5	5.9	31.1	14.8	36.3	14.8	4.1
1960	24.9	8.7	24.1	18.4	5.8	31.5	15.4	38.5	15.6	4.3
1961	24.4	8.5	23.9	18.0	5.9	30.0	14.2	40.5	16.0	4.1
1962	23.0	8.8	23.9	17.8	6.1	30.6	14.8	30.6	16.4	4.4
1963	22.3	9.0	23.2	17.4	5.8	29.8	14.2	39.7	17.0	4.4
1964	21.6	8.9	23.1	17.5	5.6	29.8	14.1	35.4	18.2	4.8
1965	20.3	9.0	23.6	17.5	6.2	30.4	14.9	32.4	19.8	5.0
1966	19.9	9.0	22.6	17.1	5.6	29.2	13.8	32.6	20.2	5.2
1967	18.9	8.7	22.1	16.7	5.4	28.4	13.5	31.9	19.6	5.5
1968	18.3	8.9	21.6	16.5	5.2	27.8	13.0	27.7	21.0	5.9
1969	19.0	8.8	20.2	15.4	4.9	26.7	13.1	16.3	21.4	6.5
1970	19.3	8.6	20.3	15.6	4.8	26.0	12.0	16.9	20.7	6.7
1971	18.1	8.6	19.5	14.9	4.6	25.2	11.9	19.7	20.5	7.1
1972	16.3	8.8	19.1	14.4	4.7	24.9	12.0	23.8	20.9	7.9
1973	15.6	8.7	18.1	13.4	4.7	23.7	11.9	18.4	20.8	8.2
1974	15.1	8.4	17.4	12.6	4.8	21.2	10.5	13.8	19.3	8.8
1975	14.7	8.2	16.5	11.7	4.8	19.8	10.1	11.9	18.2	9.0
1976	14.4	8.3	15.1	10.8	4.2	18.8	9.6	10.7	18.2	9.5
1977	15.1	8.1	14.1	9.9	4.2	17.6	9.3	7.9	18.8	9.4
1978	15.1	8.1	13.9	9.2	4.7	16.4	8.7	10.8	19.2	9.8
1979	15.6	7.9	13.3	9.0	4.3	15.7	8.1	7.6	19.3	9.6
1980	15.7	8.1	12.8	8.8	3.9	15.3	7.8	11.0	18.8	9.7
1981	15.3	8.2	13.2	9.1	4.1	15.2	7.4	5.0	18.5	9.4
1982	15.1	8.3	12.1	8.7	3.4	14.3	6.9	8.0	18.1	8.7
1983	14.7	8.5	11.8	8.0	3.8	13.8	7.0	4.5	17.4	8.4
1984	15.0	8.4	11.7	8.1	3.6	13.8	6.8	*	17.9	8.3
1985	15.2	8.7	11.4	7.8	3.7	13.4	6.9	6.5	17.4	8.5
1986	15.1	8.8	11.4	7.8	3.5	12.9	6.3	8.0	17.1	8.7
1987	15.3	8.7	10.9	7.3	3.6	12.0	5.9	5.7	16.2	8.7
1988	15.1	8.7	11.0	7.6	3.4	11.8	5.4	7.9	16.4	8.7
1989	16.0	8.5	11.1	7.2	3.9	12.0	5.9	8.8	16.5	8.7
1990	16.4	8.4	10.7	7.0	3.7	11.2	5.4	6.5	16.3	8.7
1991	15.9	8.5	10.4	6.7	3.7	10.8	5.2	10.7	15.5	8.5
1992	15.2	8.3	10.2	6.7	3.5	10.9	5.2	10.4	15.1	8.5
1993	14.7	8.6	9.5	6.1	3.3	10.2	5.2	5.7	14.9	8.5
1994	14.4	8.6	8.6	5.6	3.0	10.0	5.3	5.8	14.8	8.3
1995	13.9	8.6	8.3	5.4	2.9	10.1	5.7	8.2	14.7	8.2
1996	13.7	8.6	8.0	5.3	2.8	9.9	5.7	*	14.1	7.8
1997	13.7	8.5	8.1	5.6	2.5	10.3	5.9	9.0	13.7	7.8

Note: 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 100,000 live births. Perinatal mortality rate per 1,000 live births and fetal deaths. 1971-1996 birth, death, marriage and divorce rates have been recalculated using revised population estimates. 1971-1979 population estimates have been revised by the U.S. Census Bureau. 1980-1996 population estimates have been revised by the Department of Management & Budget. For years prior to 1950 deaths under 1 month of age are included in deaths under 28 days. 1974 divorce data is estimated. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Michigan Resident Birth, Death and Fetal Death Files and Michigan Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.3
 Number of Live Births by Age of Mother
 Michigan Residents, 1920 - 1997

Year	All Ages	Age of Mother								
		10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45+	Not Stated
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	197
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
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	178,634	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	18,030	4,424	198	8

Note: 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: Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

Table 4.3 (continued)
Number of Live Births by Age of Mother
 Michigan Residents, 1920 - 1997

Year	All Ages	Age of Mother								
		10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45+	Not Stated
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	62,243	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	138,802	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
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
1990	153,080	426	20,224	39,992	48,466	32,058	10,421	1,382	40	71
1991	149,478	414	19,325	39,546	45,995	32,025	10,627	1,464	36	46
1992	143,827	373	18,341	37,446	43,246	31,496	11,199	1,604	60	62
1993	139,560	371	17,198	35,732	40,975	31,833	11,682	1,636	71	62
1994	137,844	397	17,051	34,448	39,789	32,148	12,066	1,846	66	33
1995	134,169	377	16,444	32,365	38,669	31,721	12,458	2,030	80	25
1996	133,231	330	15,899	31,231	39,286	31,472	12,730	2,168	88	27
1997	133,549	278	15,358	31,164	39,403	31,664	13,327	2,238	95	22

Note: 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: Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH

Table 4.4
Live Birth Rates by Age of Mother
 Michigan Residents, 1920 - 1997

Year	Age of Mother								Total Fertility Rate
	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45+	
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	111.0	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	155.3	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
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

Note: Live birth rates are per 1,000 women per year. 1980-1996 population estimates have been revised by the Department of Management & Budget. Total fertility rate is total children to 1,000 women in their lifetime assuming constant live birth rates. Rates of live births to women aged 45 and over are per 1,000 women 45-49 years of age. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH. Population figures used for 1920-1970 rates are from *General Population Characteristics, Michigan*. USCB, 1971, with arithmetic extrapolation between census years.

Table 4.4 (continued)
Live Birth Rates by Age of Mother
Michigan Residents, 1920 - 1997

Year	Age of Mother								Total Fertility Rate
	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45+	
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
1980	0.8	45.1	113.4	115.3	58.0	16.3	3.1	0.1	1,760.5
1981	0.8	43.0	107.1	113.9	58.9	16.4	2.9	0.2	1,716.0
1982	0.8	42.4	105.0	112.4	61.1	17.8	2.9	0.1	1,712.5
1983	0.9	42.3	99.5	109.8	60.9	18.4	3.1	0.2	1,675.5
1984	1.0	43.2	100.4	111.3	64.9	19.6	2.9	0.1	1,717.0
1985	1.0	43.4	101.0	113.9	66.5	20.5	3.1	0.2	1,748.0
1986	1.0	43.9	99.9	111.9	67.3	21.0	3.0	0.2	1,741.0
1987	1.0	45.5	101.8	114.5	69.2	22.4	3.2	0.2	1,789.0
1988	1.2	46.7	100.6	113.9	69.7	23.4	3.5	0.2	1,796.0
1989	1.2	54.3	108.9	121.2	73.9	25.7	3.7	0.2	1,945.5
1990	1.3	59.3	112.0	125.6	77.3	27.3	4.1	0.2	2,035.5
1991	1.2	58.6	109.9	122.8	77.2	27.1	4.1	0.1	2,005.0
1992	1.1	56.3	104.6	118.9	76.3	27.8	4.5	0.2	1,948.5
1993	1.1	52.8	101.4	115.9	78.1	28.5	4.5	0.2	1,912.5
1994	1.2	51.6	100.0	115.0	79.7	29.0	4.9	0.2	1,908.0
1995	1.1	48.7	96.7	112.3	79.9	29.7	5.3	0.2	1,869.5
1996	1.0	46.0	96.3	112.6	80.6	30.0	5.5	0.3	1,861.5
1997	0.8	43.8	97.7	113.6	83.0	31.6	5.5	0.3	1,881.5

Note: Live birth rates are per 1,000 women per year. 1980-1996 population estimates have been revised by the Department of Management & Budget. Total fertility rate is total children to 1,000 women in their lifetime assuming constant live birth rates. Rates of live births to women aged 45 and over are per 1,000 women 45-49 years of age. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Michigan Resident Birth Files, Division for Vital Records and Health Statistics, MDCH. Population figures used for 1920-1970 rates are from *General Population Characteristics, Michigan*. USBC, 1971, with arithmetic extrapolation between census years.

Table 4.5
Cases of Certain Reported Communicable Diseases
Michigan Residents, 1900 - 1997

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis (all types)	TB (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	888	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	1,339	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	
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	

Note: 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. Meningococcal infections prior to 1952 data were for meningococcal meningitis. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992, syphilis counts included early latent cases.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH

Table 4.5 (continued)
Cases of Certain Reported Communicable Diseases
Michigan Residents, 1900 - 1997

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis (all types)	TB (all forms)	Meningo- coccal Infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
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	
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	-	-	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	-	-	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	1,052	79	-	1,275	36,906	
1980	1	-	12	38	250	1,799	1,185	77	1	1,110	35,125	
1981	-	-	26	30	34	1,700	966	93	-	926	32,316	2
1982	-	-	14	34	64	1,745	932	81	-	917	32,286	2
1983	-	-	10	43	8	1,788	842	91	-	695	34,052	16
1984	-	-	9	31	465	1,728	630	90	-	763	34,758	31
1985	-	-	8	54	113	1,490	535	107	-	673	33,516	64
1986	-	-	5	35	185	1,266	619	81	1	584	37,920	149
1987	-	-	5	54	42	1,610	540	111	-	621	37,348	260
1988	-	-	5	38	54	1,202	526	92	-	1,105	37,412	439
1989	-	-	6	48	359	1,044	464	70	-	1,613	33,627	510
1990	-	-	8	88	545	1,111	504	69	-	2,625	30,779	576
1991	-	-	12	38	66	1,120	451	75	-	3,520	27,015	470
1992	-	-	4	16	15	1,238	496	87	-	1,022	21,470	763
1993	-	-	8	116	6	1,015	463	65	-	635	17,870	1,806
1994	-	-	-	96	26	997	447	59	-	321	18,100	1,119
1995	-	-	4	103	5	1,008	390	75	-	333	18,117	1,086
1996	-	-	10	59	3	1,282	443	51	-	203	15,267	969
1997	-	-	7	71	2	2,224	374	56	-	178	15,647	856

Note: 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. Meningococcal infections prior to 1952 data were for meningococcal meningitis. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992, syphilis counts included early latent cases.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH

Table 4.6
Case Rates of Certain Reported Communicable Diseases
Michigan Residents, 1900 - 1997

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis (all types)	TB (all forms)	Meningococcal 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	312.8	
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	
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	0.3	1.1	98.2	116.4	2.5	100.7	5.0	4.0	295.2	231.2	
1946	6.7	*	1.5	142.2	740.3	0.6	97.2	3.2	19.1	316.2	221.3	
1947	3.9	-	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	

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. 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. Meningococcal infections prior to 1952 data were for meningococcal meningitis. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992 syphilis counts included early latent cases. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH.

Table 4.6 (continued)
Case Rates of Certain Reported Communicable Diseases
Michigan Residents, 1900 - 1997

Year	Diphtheria	Smallpox	Typhoid Fever	Whooping Cough	Measles	Hepatitis (all types)	TB (all forms)	Meningo- coccal infections	Polio	Syphilis	Gonorrhea	Acquired Immune Deficiency Syndrome
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	*	-	0.1	37.7	153.7	14.3	59.6	1.8	5.6	43.0	100.9	
1960	0.1	-	0.2	14.4	462.2	27.0	52.8	2.2	1.1	46.6	107.0	
1961	*	-	0.1	8.1	371.9	58.3	48.6	3.2	0.5	41.9	120.3	
1962	*	-	0.2	22.1	318.7	41.3	43.8	1.8	0.3	54.6	146.8	
1963	*	-	0.2	17.6	607.1	33.1	41.1	1.3	0.2	68.6	137.5	
1964	*	-	0.2	11.8	381.4	30.5	37.6	1.0	*	64.4	148.5	
1965	-	-	0.1	7.5	343.1	32.0	37.4	1.3	*	68.8	174.6	
1966	*	-	0.1	7.9	183.4	31.1	39.2	1.6	*	70.3	185.5	
1967	*	-	0.1	12.3	12.2	22.2	34.2	0.9	*	64.8	198.4	
1968	-	-	*	4.9	4.1	27.2	30.2	1.1	*	61.7	209.3	
1969	-	-	0.1	2.2	4.6	38.5	24.4	1.3	*	43.6	212.2	
1970	-	-	0.2	2.2	20.7	51.8	22.4	0.8	*	44.2	229.4	
1971	*	-	0.1	1.6	29.6	53.8	19.9	0.7	-	53.5	248.1	
1972	*	-	0.1	1.3	26.1	47.9	18.1	0.6	*	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	*	29.9	352.0	
1975	*	-	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	*	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	*	12.3	398.3	
1979	-	-	0.2	1.1	9.4	22.0	11.4	0.9	-	13.6	396.0	
1980	*	-	0.1	0.4	2.7	19.4	12.8	0.8	*	12.0	379.5	
1981	-	-	0.3	0.3	0.4	18.5	10.5	1.0	-	10.1	350.9	*
1982	-	-	0.2	0.4	0.7	19.1	10.2	0.9	-	10.1	354.2	*
1983	-	-	0.1	0.5	0.1	19.8	9.3	1.0	-	7.7	376.4	0.2
1984	-	-	0.1	0.3	5.1	19.1	7.0	1.0	-	8.4	384.1	0.3
1985	-	-	0.1	0.6	1.2	16.4	5.9	1.2	-	7.4	369.3	0.7
1986	-	-	*	0.4	2.0	13.9	6.8	0.9	*	6.4	415.4	1.6
1987	-	-	*	0.6	0.5	17.5	5.9	1.2	-	6.8	406.5	2.8
1988	-	-	*	0.4	0.6	13.0	5.7	1.0	-	12.0	405.9	4.8
1989	-	-	0.1	0.5	3.9	11.3	5.0	0.8	-	17.4	363.4	5.5
1990	-	-	0.1	0.9	5.9	11.9	5.4	0.7	-	28.2	330.6	6.2
1991	-	-	0.1	0.4	0.7	11.9	4.8	0.8	-	37.5	287.7	5.0
1992	-	-	*	0.2	0.2	13.1	5.2	0.9	-	10.8	226.8	8.1
1993	-	-	0.1	1.2	0.1	10.7	4.9	0.7	-	6.7	187.6	19.0
1994	-	-	-	1.0	0.3	10.4	4.7	0.6	-	3.4	188.9	11.7
1995	-	-	*	1.1	*	10.4	4.0	0.8	-	3.4	187.6	11.2
1996	-	-	0.1	0.6	*	13.2	4.6	0.5	-	2.1	156.9	10.0
1997	-	-	0.1	0.7	*	22.8	3.8	0.6	-	1.8	160.1	8.8

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. 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. Meningococcal infections prior to 1952 data were for meningococcal meningitis. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992 syphilis counts included early latent cases. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH.

Table 4.7
Number of Deaths and Death Rates for Certain Communicable Diseases
 Michigan Residents, 1900 - 1997

Year	Diphtheria		Strep. Sore Throat Including Scarlet Fever		Typhoid Fever		Whooping Cough		Measles	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1900	529	21.9	272	11.2	869	35.9	208	8.6	342	14.1
1901	502	20.4	312	12.7	645	26.2	163	6.6	79	3.2
1902	504	20.2	277	11.1	608	24.3	289	11.6	238	9.5
1903	686	27.0	200	7.9	606	23.9	383	15.1	176	6.9
1904	515	20.0	210	8.1	641	24.9	148	5.7	194	7.5
1905	478	18.3	123	4.7	636	24.3	131	5.0	123	4.7
1906	472	17.8	227	8.6	721	27.2	469	17.7	251	9.5
1907	421	15.6	159	5.9	594	22.1	223	8.3	256	9.5
1908	343	12.6	194	7.1	687	25.1	305	11.2	121	4.4
1909	395	14.3	275	9.9	653	23.6	217	7.8	270	9.7
1910	495	17.6	297	10.6	654	23.3	318	11.3	251	8.9
1911	473	16.3	208	7.2	551	19.0	254	8.8	200	6.9
1912	465	15.6	186	6.2	534	17.9	252	8.5	118	4.0
1913	676	22.0	283	9.2	538	17.5	292	9.5	258	8.4
1914	507	16.1	177	5.6	400	12.7	304	9.6	180	5.7
1915	354	10.9	107	3.3	353	10.9	236	7.3	101	3.1
1916	507	15.2	177	5.3	424	12.8	228	6.9	363	10.9
1917	851	24.9	340	10.0	386	11.3	360	10.6	259	7.6
1918	686	19.6	181	5.2	337	9.6	496	14.2	270	7.7
1919	764	21.3	179	5.0	272	7.6	172	4.8	183	5.1
1920	888	24.2	305	8.3	297	8.1	511	13.9	436	11.9
1921	954	25.2	334	8.8	285	7.5	316	8.3	58	1.5
1922	620	15.9	217	5.6	192	4.9	232	5.9	232	5.9
1923	675	16.8	304	7.6	202	5.0	323	8.0	258	6.4
1924	470	11.4	265	6.4	149	3.6	169	4.1	221	5.3
1925	358	8.4	208	4.9	157	3.7	260	6.1	69	1.6
1926	677	15.5	235	5.4	119	2.7	355	8.1	577	13.2
1927	516	11.5	168	3.7	94	2.1	201	4.5	67	1.5
1928	384	8.3	178	3.9	83	1.8	219	4.8	303	6.6
1929	498	10.5	145	3.1	81	1.7	255	5.4	146	3.1
1930	299	6.2	130	2.7	87	1.8	176	3.6	231	4.8
1931	172	3.5	122	2.5	73	1.5	190	3.9	28	0.6
1932	106	2.2	112	2.3	56	1.1	199	4.0	183	3.7
1933	112	2.3	157	3.2	50	1.0	153	3.1	111	2.2
1934	38	0.8	171	3.4	65	1.3	141	2.8	36	0.7
1935	58	1.1	98	1.9	34	0.7	132	2.6	184	3.6
1936	52	1.0	114	2.2	37	0.7	107	2.1	12	0.2
1937	72	1.4	148	2.9	29	0.6	132	2.6	11	0.2
1938	44	0.9	87	1.7	23	0.4	116	2.2	100	1.9
1939	25	0.5	69	1.3	25	0.5	76	1.5	29	0.6
1940	20	0.4	41	0.8	11	0.2	59	1.1	19	0.4
1941	18	0.3	32	0.6	14	0.3	91	1.7	65	1.2
1942	24	0.4	23	0.4	5	*	72	1.3	8	0.1
1943	21	0.4	11	0.2	9	0.2	101	1.9	89	1.7
1944	32	0.6	7	0.1	7	0.1	33	0.6	49	0.9
1945	46	0.8	9	0.2	3	*	36	0.7	10	0.2
1946	27	0.5	3	*	6	0.1	44	0.8	47	0.8
1947	23	0.4	6	0.1	5	*	63	1.0	5	*
1948	8	0.1	1	*	4	*	9	0.1	43	0.7
1949	11	0.2	4	*	1	*	22	0.3	33	0.5

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. 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. Meningococcal infections prior to 1952 data were for meningococcal meningitis. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992 syphilis counts included early latent cases. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH.

Table 4.7 (continued)
Number of Deaths and Death Rates for Certain Communicable Diseases
Michigan Residents, 1900 - 1997

Year	TB of the Respiratory System		Tuberculosis (all forms)		Poliomyelitis		Syphilis		Gonorrhea		AIDS	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1900	2,018	83.4	2,500	103.3								
1901	2,152	87.5	2,548	103.6								
1902	2,088	83.6	2,462	98.5			88	3.6				
1903	2,155	84.9	2,562	101.0			114	4.6				
1904	2,306	89.5	2,761	107.2			130	5.2				
1905	2,288	87.5	2,732	104.5			101	4.0				
1906	2,303	86.8	2,737	103.1			89	3.5				
1907	2,338	86.8	2,728	101.3			89	3.4				
1908	2,249	82.3	2,706	99.0			94	3.6				
1909	2,237	80.7	2,629	94.9			118	4.5				
							127	4.8				
1910	2,273	80.9	2,756	98.1	52	1.9	65	2.3				
1911	2,284	78.9	2,766	95.5	55	1.9	104	3.6				
1912	2,289	76.8	2,744	92.0	48	1.7	90	3.1				
1913	2,243	73.1	2,703	88.1	43	1.5	136	4.6				
1914	2,325	73.7	2,799	88.8	41	1.4	160	5.3				
1915	2,527	78.0	2,986	92.2	36	1.2	163	5.3				
1916	2,573	77.4	3,070	92.3	141	4.6	206	6.7				
1917	2,779	81.5	3,310	97.0	44	1.4	224	7.1				
1918	3,059	87.5	3,612	103.3	58	1.8	290	9.1				
1919	2,620	73.1	3,127	87.3	80	2.2	299	8.2				
1920	2,645	72.1	3,149	85.8	30	0.8	314	8.4				
1921	2,285	60.4	2,736	72.3	100	2.6	226	5.9	14	0.4		
1922	2,232	57.2	2,654	68.0	21	0.5	186	4.7	6	0.2		
1923	2,410	59.9	2,837	70.6	18	0.5	262	6.8	5	*		
1924	2,474	59.8	2,952	71.3	116	3.0	271	7.0	13	0.3		
1925	2,410	56.6	2,830	66.5	31	0.7	282	6.6	27	0.6		
1926	2,601	59.5	3,041	69.5	34	0.8	327	7.5	12	0.3		
1927	2,514	56.0	2,952	65.7	69	1.5	305	6.8	16	0.4		
1928	2,647	57.4	3,108	67.5	27	0.6	384	8.4	19	0.4		
1929	2,685	56.8	3,140	66.5	50	1.1	397	8.4	19	0.4		
1930	2,443	50.5	2,912	60.1	39	0.8	395	8.2	12	0.2		
1931	2,263	46.3	2,660	54.5	108	2.2	361	7.4	3	*		
1932	2,101	42.7	2,463	50.0	23	0.5	377	7.7	2	*		
1933	1,996	40.2	2,348	47.3	5	*	327	6.6	7	0.1		
1934	1,909	38.1	2,199	43.9	25	0.5	402	8.0	10	0.2		
1935	1,741	34.5	2,044	40.5	32	0.6	393	7.8	3	*		
1936	1,816	35.7	2,100	41.3	21	0.4	394	7.7	6	0.1		
1937	1,860	36.2	2,119	41.3	51	1.0	401	7.8	8	0.2		
1938	1,633	31.6	1,866	36.1	10	0.2	401	7.8	8	0.2		
1939	1,651	31.7	1,881	36.1	40	0.8	389	7.5	4	*		
1940	1,547	29.4	1,752	33.3	72	1.4	591	11.2	3	*		
1941	1,532	28.2	1,723	31.7	18	0.3	537	9.9	1	*		
1942	1,630	29.4	1,827	33.0	10	0.2	559	10.1	7	0.1		
1943	1,588	29.5	1,802	33.5	27	0.5	579	10.8	3	*		
1944	1,544	28.7	1,748	32.5	45	0.8	543	10.1	2	*		
1945	1,591	29.3	1,758	32.3	20	0.4	527	9.7	2	*		
1946	1,645	28.8	1,843	32.3	89	1.6	547	9.6	-	-		
1947	1,483	24.4	1,643	27.1	29	0.5	502	8.3	3	*		
1948	1,395	22.5	1,561	25.2	54	0.9	512	8.3	-	-		
1949	1,254	19.7	1,400	22.0	216	3.4	455	7.2	-	-		

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. 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. Meningococcal infections prior to 1952 data were for meningococcal meningitis. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992 syphilis counts included early latent cases. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH.

Table 4.7 (continued)
 Number of Deaths and Death Rates for Certain Communicable Diseases
 Michigan Residents, 1900 - 1997

Year	Diphtheria		Strep. Sore Throat Including Scarlet Fever		Typhoid Fever		Whooping Cough		Measles	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1950	2	*	1	*	5	*	28	0.4	28	0.4
1951	6	0.1	-	-	1	*	21	0.3	11	0.2
1952	2	*	-	-	-	-	8	0.1	17	0.3
1953	2	*	1	*	-	-	11	0.2	16	0.2
1954	3	*	3	*	-	-	17	0.2	17	0.2
1955	1	*	1	*	1	*	8	0.1	10	0.1
1956	6	0.1	3	*	-	-	6	0.1	26	0.3
1957	1	*	-	-	-	-	6	0.1	23	0.3
1958	-	-	-	-	-	-	1	*	18	0.2
1959	1	*	2	*	1	*	5	*	11	0.1
1960	2	*	1	*	-	-	1	*	17	0.2
1961	1	*	1	*	-	-	2	*	13	0.2
1962	2	*	1	*	-	-	2	*	8	0.1
1963	-	-	-	-	-	-	-	-	27	0.3
1964	-	-	-	-	-	-	2	*	11	0.1
1965	-	-	-	-	-	-	-	-	5	*
1966	1	*	-	-	-	-	-	-	7	0.1
1967	-	-	-	-	-	-	-	-	3	*
1968	-	-	1	*	-	-	-	-	-	-
1969	-	-	-	-	-	-	-	-	-	-
1970	-	-	2	*	-	-	-	-	1	*
1971	-	-	4	*	-	-	-	-	-	-
1972	-	-	1	*	1	*	-	-	-	-
1973	-	-	-	-	-	-	1	*	2	*
1974	-	-	1	*	-	-	2	*	-	-
1975	-	-	-	-	-	-	1	*	1	*
1976	-	-	-	-	-	-	-	-	-	-
1977	-	-	1	*	-	-	-	-	-	-
1978	-	-	-	-	-	-	1	*	1	*
1979	-	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	1	*	-	-	-	-
1982	-	-	-	-	-	-	-	-	1	*
1983	-	-	1	*	-	-	-	-	1	*
1984	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-
1988	-	-	1	*	-	-	1	*	-	-
1989	-	-	-	-	-	-	-	-	-	-
1990	-	-	1	*	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	-	-

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, tuberculosis deaths and rates prior to 1975 are not directly comparable to the figures in 1975 and later years. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992 syphilis counts included early latent cases. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH

Table 4.7 (continued)
 Number of Deaths and Death Rates for Certain Communicable Diseases
 Michigan Residents, 1900 - 1997

Year	TB of the Respiratory System		Tuberculosis ² (all forms)		Poliomyelitis		Syphilis ³		Gonorrhea		AIDS	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1950	1,134	17.8	1,270	19.9	128	2.0	325	5.1	1	*		
1951	1,049	16.0	1,154	17.6	67	1.0	299	4.6	1	*		
1952	689	10.3	775	11.6	213	3.2	174	2.6	2	*		
1953	536	7.8	607	8.9	108	1.6	182	2.7	1	*		
1954	471	6.7	530	7.5	89	1.3	139	2.0	2	*		
1955	435	6.0	477	6.6	32	0.4	115	1.6	1	*		
1956	426	5.7	466	6.2	22	0.3	114	1.5	4	*		
1957	403	5.2	442	5.7	15	0.2	105	1.3	4	*		
1958	357	4.5	395	5.0	37	0.5	84	1.1	8	0.1		
1959	335	4.2	370	4.6	17	0.2	84	1.1	4	*		
1960	364	4.7	390	5.0	4	*	79	1.0	7	0.1		
1961	307	3.9	332	4.2	-	-	71	0.9	7	0.1		
1962	307	3.9	331	4.2	2	*	94	1.2	3	*		
1963	276	3.4	299	3.7	1	*	72	0.9	1	*		
1964	288	3.6	315	3.9	1	*	66	0.8	3	*		
1965	261	3.2	285	3.5	-	-	65	0.8	2	*		
1966	284	3.4	301	3.6	-	-	63	0.8	-	-		
1967	206	2.4	226	2.6	-	-	44	0.5	1	*		
1968	203	2.3	262	3.0	2	*	29	0.3	-	-		
1969	147	1.7	201	2.3	-	-	26	0.3	1	*		
1970	134	1.5	180	2.0	-	-	17	0.2	2	*		
1971	122	1.4	173	1.9	-	-	18	0.2	-	-		
1972	111	1.2	157	1.7	1	*	12	0.1	-	-		
1973	101	1.1	138	1.5	3	*	12	0.1	-	-		
1974	109	1.2	142	1.6	3	*	11	0.1	-	-		
1975	81	0.9	110	1.2	5	*	10	0.1	1	*		
1976	80	0.9	102	1.1	6	0.1	11	0.1	-	-		
1977	67	0.7	97	1.1	6	0.1	3	*	-	-		
1978	60	0.7	80	0.9	2	*	5	*	-	-		
1979	47	0.5	62	0.7	2	*	9	0.1	-	-		
1980	51	0.6	61	0.7	-	-	1	*	1	*		
1981	41	0.4	53	0.6	-	-	4	*	1	*		
1982	30	0.3	41	0.4	-	-	-	-	-	-		
1983	28	0.3	39	0.4	-	-	3	*	-	-		
1984	47	0.5	59	0.7	-	-	2	*	-	-		
1985	37	0.4	46	0.5	-	-	3	*	-	-		
1986	36	0.4	44	0.5	-	-	2	*	-	-		
1987	39	0.4	46	0.5	-	-	2	*	-	-		
1988	36	0.4	42	0.5	-	-	2	*	-	-	160	1.7
1989	31	0.3	32	0.3	-	-	3	*	-	-	216	2.3
											329	3.6
1990	28	0.3	43	0.5	-	-	-	-	-	-	373	4.0
1991	24	0.3	41	0.4	-	-	-	-	-	-	465	5.0
1992	38	0.4	49	0.5	-	-	1	*	-	-	573	6.2
1993	26	0.3	38	0.4	-	-	5	*	1	*	691	7.4
1994	33	0.3	44	0.5	-	-	1	*	-	-	757	8.0
1995	31	0.3	43	0.5	-	-	2	*	1	*	795	8.3
1996	26	0.3	29	0.3	-	-	2	*	-	-	510	5.4
1997	22	0.2	33	0.3	-	-	-	-	1	*	317	3.3

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. Effective January 1975, a new diagnostic classification system for tuberculosis was adopted. As a result, tuberculosis deaths and rates prior to 1975 are not directly comparable to the figures in 1975 and later years. Starting with 1992 data, syphilis counts represent only primary and secondary cases. Prior to 1992 syphilis counts included early latent cases. Asterisk (*) indicates that data do not meet the standards of precision or reliability.

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH

Table 4.8
 Number of Deaths and Death Rates by Specified Causes
 Michigan Residents, 1900 - 1997

Year	Heart Disease		Cancer (all forms)		Stroke		Accidents (all forms)		Motor Vehicle Accidents	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1900	2,836	117.1	1,460	60.3	2,136	88.2	1,740	71.9		
1901	3,040	123.6	1,484	60.3	2,147	87.3	1,901	77.3		
1902	3,302	132.1	1,483	59.3	2,097	83.9	1,796	71.9		
1903	3,702	145.9	1,694	66.8	2,321	91.5	2,017	79.5		
1904	3,981	154.5	1,728	67.1	2,431	94.3	2,035	79.0		
1905	3,715	142.0	1,693	64.7	2,405	91.9	2,034	77.8		
1906	3,933	148.2	1,736	65.4	2,554	96.2	2,126	80.1		
1907	4,269	158.5	1,747	64.9	2,690	99.9	2,209	82.0		
1908	4,202	153.8	1,921	70.3	2,630	96.3	2,036	74.5		
1909	4,354	157.1	1,948	70.3	2,739	98.8	1,903	68.7		
1910	4,581	163.0	2,105	74.9	3,091	110.0	2,158	76.8	49	1.7
1911	4,639	160.2	2,142	74.0	2,916	100.7	2,121	73.2	44	1.5
1912	5,324	178.5	2,291	76.8	2,707	90.8	2,005	67.2	75	2.5
1913	4,908	160.0	2,388	77.8	2,834	92.4	2,333	76.1	132	4.3
1914	5,124	162.5	2,414	76.6	2,993	94.9	2,108	66.8	120	3.8
1915	5,538	171.0	2,567	79.2	3,384	104.5	2,219	68.5	190	5.9
1916	5,819	175.0	2,710	81.5	3,559	107.0	2,853	85.8	257	7.7
1917	6,103	178.9	2,765	81.1	3,703	108.6	2,925	85.8	335	9.8
1918	6,091	174.2	2,931	83.8	3,493	99.9	2,599	74.3	279	8.0
1919	5,651	157.7	2,990	83.5	3,483	97.2	2,612	72.9	328	9.2
1920	6,732	183.5	3,158	86.1	3,876	105.7	2,646	72.1	397	10.8
1921	6,176	163.1	3,373	89.1	3,931	103.8	2,476	65.4	403	10.6
1922	6,897	176.7	3,481	89.2	4,041	103.5	2,475	63.4	529	13.6
1923	7,266	180.7	3,545	88.2	4,420	109.9	2,826	70.3	677	16.8
1924	6,985	168.8	3,824	92.4	4,241	102.5	3,090	74.7	1,001	24.2
1925	7,540	177.2	3,858	90.7	4,623	108.6	3,278	77.0	1,103	25.9
1926	8,281	189.4	4,087	93.5	4,663	106.6	3,557	81.3	1,221	27.9
1927	8,780	195.5	4,264	95.0	4,378	97.5	3,634	80.9	1,389	30.9
1928	9,786	212.4	4,381	95.1	4,718	102.4	3,704	80.4	1,429	31.0
1929	10,185	215.6	4,571	96.7	4,694	99.3	3,913	82.8	1,552	32.8
1930	9,947	205.4	4,572	94.4	4,533	93.6	3,805	78.6	1,572	32.5
1931	10,206	209.0	4,763	97.5	4,388	89.8	3,630	74.3	1,516	31.0
1932	11,162	226.6	4,935	100.2	4,518	91.7	3,179	64.5	1,229	25.0
1933	11,509	231.7	5,055	101.8	4,318	86.9	3,304	66.5	1,278	25.7
1934	11,824	236.1	5,370	107.2	4,485	89.6	3,774	75.4	1,511	30.2
1935	12,456	246.7	5,399	106.9	4,420	87.5	3,771	74.7	1,676	33.2
1936	13,374	262.7	5,752	113.0	4,705	92.4	5,246	103.1	1,924	37.8
1937	13,233	257.8	5,732	111.7	4,378	85.3	4,580	89.2	2,187	42.6
1938	13,887	268.4	6,059	117.1	4,543	87.8	3,608	69.7	1,490	28.8
1939	14,898	285.7	6,296	120.7	4,415	84.7	3,761	72.1	1,553	29.8
1940	15,480	294.5	6,513	123.9	4,690	89.2	3,961	75.4	1,743	33.2
1941	15,761	289.8	6,551	120.5	4,698	86.4	4,450	81.8	2,156	39.6
1942	16,016	289.2	6,646	120.0	4,841	87.4	3,685	66.5	1,368	24.7
1943	17,816	331.3	7,127	132.5	5,311	98.8	3,480	64.7	1,025	19.1
1944	17,004	316.2	7,277	135.3	4,954	92.1	3,350	62.3	1,103	20.5
1945	17,421	320.5	7,486	137.7	5,295	97.4	3,432	63.1	1,199	22.1
1946	17,691	309.9	7,845	137.4	5,224	91.5	3,776	66.1	1,506	26.4
1947	18,412	303.4	8,188	134.9	5,426	89.4	3,848	63.4	1,499	24.7
1948	18,726	302.3	8,336	134.6	5,272	85.1	4,017	64.8	1,545	24.9
1949	19,137	301.3	8,697	136.9	5,438	85.6	3,838	60.4	1,493	23.5

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. Cancer includes leukemias, aleukemias, and Hodgkin's disease beginning with 1921. Stroke was called Cerebrovascular disease between 1969-1995 and Vascular Lesions Affecting-Central Nervous System prior to 1968. Accidents includes Motor Vehicle accidents. Accidents exclude injuries undetermined whether accidentally or purposely inflicted since 1968. Motor vehicle accidents do not include collision with heavier vehicles from 1910 through 1922. Motorcycle accidents are included beginning 1923. Chronic liver disease and cirrhosis was called Cirrhosis of the Liver prior to 1979. Atherosclerosis was called General Arteriosclerosis prior to 1968 and was called Arteriosclerosis from 1968-1978.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.8 (continued)
 Number of Deaths and Death Rates by Specified Causes
 Michigan Residents, 1900 - 1997

Year	Diabetes		Pneumonia & Influenza		Chronic Liver Disease & Cirrhosis		Atherosclerosis	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1900	224	9.3	2,388	98.6				
1901	264	10.7	2,901	117.9				
1902	289	11.6	2,637	105.5				
1903	265	10.4	2,607	102.7				
1904	298	11.6	2,646	102.7				
1905	267	10.2	2,417	92.4				
1906	311	11.7	2,621	98.7				
1907	352	13.1	3,018	112.0				
1908	359	13.1	2,313	84.7				
1909	374	13.5	2,265	81.7				
1910	398	14.2	2,785	99.1				
1911	373	12.9	2,763	95.4				
1912	448	15.0	2,796	93.8				
1913	483	15.7	3,082	100.5				
1914	503	16.0	2,909	92.2				
1915	498	15.4	3,229	99.7				
1916	500	15.0	3,698	111.2				
1917	569	16.7	4,455	130.6				
1918	591	16.9	7,238	207.0				
1919	559	15.6	4,081	113.9				
1920	577	15.7	5,794	157.9				
1921	586	15.5	2,849	75.3	261	6.9		
1922	650	16.7	3,728	95.5	267	6.8		
1923	635	15.8	4,719	117.4	251	6.2		
1924	661	16.0	3,332	80.5	256	6.2		
1925	746	17.5	3,294	77.4	319	7.5		
1926	743	17.0	4,440	101.5	326	7.5		
1927	819	18.2	3,543	78.9	340	7.6		
1928	905	19.6	4,518	98.1	373	8.1		
1929	935	19.8	4,216	89.2	361	7.6		
1930	880	18.2	3,321	68.6	329	6.8	1,047	21.6
1931	950	19.5	2,883	59.0	365	7.5	1,005	20.6
1932	1,121	22.8	3,238	65.7	386	7.8	948	19.2
1933	1,103	22.2	2,756	55.5	354	7.1	966	19.5
1934	1,100	22.0	3,466	69.2	378	7.5	914	18.3
1935	1,228	24.3	3,801	75.3	368	7.3	897	17.8
1936	1,266	24.9	4,096	80.5	446	8.8	997	19.6
1937	1,255	24.5	4,098	79.8	430	8.4	1,168	22.8
1938	1,283	24.8	2,869	55.5	424	8.2	869	16.8
1939	1,360	26.1	2,803	53.8	387	7.4	918	17.6
1940	1,408	26.8	2,478	47.1	468	8.9	941	17.9
1941	1,382	25.4	2,235	41.1	450	8.3	906	16.7
1942	1,448	26.1	2,349	42.4	535	9.7	1,015	18.3
1943	1,535	28.5	2,931	54.5	518	9.6	1,092	20.3
1944	1,554	28.9	2,369	44.1	471	8.8	980	18.2
1945	1,561	28.7	1,932	35.5	535	9.8	970	17.8
1946	1,530	26.8	1,891	33.1	554	9.7	933	16.3
1947	1,618	26.7	2,089	34.4	697	11.5	1,031	17.0
1948	1,771	28.6	1,853	29.9	771	12.4	1,085	17.5
1949	1,884	29.7	1,885	29.7	730	11.5	1,135	17.9

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. Cancer includes leukemias, aleukemias, and Hodgkin's disease beginning with 1921. Stroke was called Cerebrovascular disease between 1969-1995 and Vascular Lesions Affecting-Central Nervous System prior to 1968. Accidents includes Motor Vehicle accidents. Accidents exclude injuries undetermined whether accidentally or purposely inflicted since 1968. Motor vehicle accidents do not include collision with heavier vehicles from 1910 through 1922. Motorcycle accidents are included beginning 1923. Chronic liver disease and cirrhosis was called Cirrhosis of the Liver prior to 1979. Atherosclerosis was called General Arteriosclerosis prior to 1968 and was called Arteriosclerosis from 1968-1978.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.8 (continued)
 Number of Deaths and Death Rates by Specified Causes
 Michigan Residents, 1900 - 1997

Year	Heart Disease		Cancer (all forms)		Stroke		Accidents (all forms)		Motor Vehicle Accidents	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1950	20,521	322.1	8,685	136.3	6,376	100.1	3,783	59.4	1,680	26.4
1951	21,118	322.6	9,187	140.4	6,579	100.5	3,916	59.8	1,806	27.6
1952	21,247	316.8	9,256	138.0	6,521	97.2	3,901	58.2	1,815	27.1
1953	22,425	327.3	9,904	144.5	7,045	102.8	4,375	63.8	2,051	29.9
1954	22,362	318.4	10,105	143.9	6,964	99.1	3,948	56.2	1,916	27.3
1955	23,440	323.9	10,297	142.3	7,362	101.7	4,213	58.2	2,129	29.4
1956	24,661	328.1	10,489	139.6	7,114	94.7	3,925	52.2	1,826	24.3
1957	25,369	325.1	10,810	138.5	7,632	97.8	3,643	46.7	1,680	21.5
1958	25,215	320.6	10,946	139.2	7,547	95.9	3,306	42.0	1,466	18.6
1959	25,323	318.1	11,113	139.6	7,700	96.7	3,666	46.1	1,587	19.9
1960	25,728	328.9	11,331	144.8	7,682	98.2	3,688	47.1	1,710	21.9
1961	25,519	322.9	11,476	145.2	7,745	98.0	3,692	46.7	1,656	21.0
1962	27,226	342.9	11,752	148.0	7,783	98.0	3,758	47.3	1,668	21.0
1963	27,483	342.3	12,078	150.4	8,168	101.7	4,033	50.2	2,005	25.0
1964	27,496	339.5	12,087	149.2	7,940	98.0	4,416	54.5	2,286	28.2
1965	28,134	343.1	12,419	151.5	7,769	94.8	4,494	54.8	2,271	27.7
1966	28,277	340.1	12,506	150.4	7,732	93.0	4,737	57.0	2,407	29.0
1967	28,757	333.8	13,030	151.2	7,846	91.1	4,519	52.4	2,265	26.3
1968	29,680	342.1	13,292	153.2	7,913	91.2	4,603	53.1	2,466	28.4
1969	29,396	336.6	13,328	152.6	7,706	88.2	4,766	54.6	2,579	29.5
1970	29,204	329.1	13,551	152.7	7,691	86.7	4,428	49.9	2,309	26.0
1971	30,095	335.4	13,594	151.5	7,826	87.2	4,426	49.3	2,274	25.3
1972	30,865	342.0	14,045	155.6	7,999	88.6	4,566	50.6	2,450	27.1
1973	29,944	330.1	14,220	156.7	7,987	88.0	4,630	51.0	2,389	26.3
1974	29,220	320.8	14,241	156.3	7,645	83.9	4,211	46.2	1,929	21.2
1975	28,298	310.7	14,445	158.6	7,262	79.7	4,002	43.9	1,841	20.2
1976	29,233	320.6	14,880	163.2	7,354	80.7	3,912	42.9	1,993	21.9
1977	28,895	315.6	15,125	165.2	6,818	74.5	3,945	43.1	1,993	21.8
1978	29,406	319.6	15,249	165.7	6,520	70.9	3,970	43.1	2,138	23.2
1979	29,296	316.7	15,409	166.6	6,067	65.6	3,839	41.5	1,967	21.3
1980	29,790	321.8	15,828	171.0	6,164	66.6	3,627	39.2	1,880	20.3
1981	30,172	327.6	16,142	175.3	6,121	66.5	3,390	36.8	1,727	18.8
1982	30,099	330.2	16,566	181.7	5,839	64.1	3,113	34.2	1,555	17.1
1983	30,412	336.1	16,785	185.5	5,721	63.2	2,947	32.6	1,419	15.7
1984	30,100	332.6	16,907	186.8	5,631	62.2	3,049	33.7	1,630	18.0
1985	30,618	337.3	17,281	190.4	5,528	60.9	3,228	35.6	1,676	18.5
1986	31,270	342.6	17,321	189.8	5,421	59.4	3,202	35.1	1,736	19.0
1987	30,521	332.2	17,669	192.3	5,481	59.7	3,143	34.2	1,725	18.8
1988	30,218	327.8	17,890	194.1	5,237	56.8	3,237	35.1	1,806	19.6
1989	28,031	302.9	18,264	197.4	5,173	55.9	3,228	34.9	1,750	18.9
1990	27,527	295.7	18,413	197.8	5,090	54.7	3,137	33.7	1,669	17.9
1991	27,517	293.0	19,204	204.5	5,165	55.0	3,011	32.1	1,494	15.9
1992	26,863	283.8	19,217	203.0	5,087	53.7	2,844	30.0	1,426	15.1
1993	28,512	299.4	19,187	201.5	5,299	55.6	2,830	29.7	1,438	15.1
1994	28,195	294.3	19,410	202.6	5,680	59.3	2,928	30.6	1,445	15.1
1995	28,007	290.1	19,442	201.4	5,857	60.7	3,137	32.5	1,601	16.6
1996	27,980	287.5	19,563	201.0	5,748	59.1	3,062	31.5	1,577	16.2
1997	27,150	277.8	19,504	199.6	5,725	58.6	3,118	31.9	1,507	15.4

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. Cancer includes leukemias, aleukemias, and Hodgkin's disease beginning with 1921. Stroke was called Cerebrovascular disease between 1969-1995 and Vascular Lesions Affecting-Central Nervous System prior to 1968. Accidents includes Motor Vehicle accidents. Accidents exclude injuries undetermined whether accidentally or purposely inflicted since 1968. Motor vehicle accidents do not include collision with heavier vehicles from 1910 through 1922. Motorcycle accidents are included beginning 1923. Chronic liver disease and cirrhosis was called Cirrhosis of the Liver prior to 1979. Atherosclerosis was called General Arteriosclerosis prior to 1968 and was called Arteriosclerosis from 1968-1978.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.8 (continued)
 Number of Deaths and Death Rates by Specified Causes
 Michigan Residents, 1900 - 1997

Year	Diabetes		Pneumonia & Influenza		Chronic Liver Disease & Cirrhosis		Atherosclerosis	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1950	1,438	22.6	1,358	21.3	616	9.7	1,296	20.3
1951	1,374	21.0	1,619	24.7	569	8.7	1,312	20.0
1952	1,339	20.0	1,571	23.4	599	8.9	1,294	19.3
1953	1,419	20.7	1,538	22.4	715	10.4	1,270	18.5
1954	1,469	20.9	1,380	19.6	677	9.6	1,170	16.7
1955	1,415	19.6	1,538	21.3	805	11.1	1,237	17.1
1956	1,443	19.2	1,723	22.9	788	10.5	1,251	16.6
1957	1,510	19.4	2,045	26.2	861	11.0	1,248	16.0
1958	1,595	20.3	2,076	26.4	818	10.4	1,300	16.5
1959	1,715	21.5	1,810	22.7	815	10.2	1,403	17.6
1960	1,784	22.8	2,002	25.6	840	10.7	1,352	17.3
1961	1,778	22.5	1,692	21.4	858	10.9	1,448	18.3
1962	1,908	24.0	1,824	23.0	859	10.8	1,477	18.6
1963	2,049	25.5	1,995	24.8	958	11.9	1,652	20.6
1964	2,055	25.4	1,714	21.2	995	12.3	1,559	19.2
1965	2,153	26.3	1,987	24.2	1,068	13.0	1,726	21.1
1966	2,243	27.0	2,026	24.4	1,152	13.9	1,745	21.0
1967	2,182	25.3	1,973	22.9	1,240	14.4	1,730	20.1
1968	2,298	26.5	2,341	27.0	1,259	14.5	1,262	14.5
1969	2,188	25.1	2,229	25.5	1,430	16.4	1,289	14.8
1970	2,180	24.6	2,004	22.6	1,558	17.6	1,174	13.2
1971	2,103	23.4	1,981	22.1	1,657	18.5	1,187	13.2
1972	2,222	24.6	2,009	22.3	1,778	19.7	1,153	12.8
1973	2,074	22.9	1,958	21.6	1,711	18.9	1,142	12.6
1974	1,940	21.3	1,637	18.0	1,650	18.1	1,187	13.0
1975	1,819	20.0	1,690	18.6	1,574	17.3	1,119	12.3
1976	1,719	18.9	1,812	19.9	1,486	16.3	1,207	13.2
1977	1,615	17.6	1,639	17.9	1,356	14.8	1,164	12.7
1978	1,551	16.9	1,828	19.9	1,351	14.7	1,146	12.5
1979	1,449	15.7	1,454	15.7	1,367	14.8	1,173	12.7
1980	1,467	15.8	1,712	18.5	1,362	14.7	1,254	13.5
1981	1,487	16.1	1,644	17.9	1,253	13.6	1,270	13.8
1982	1,347	14.8	1,665	18.3	1,244	13.6	1,284	14.1
1983	1,470	16.2	2,007	22.2	1,250	13.8	1,269	14.0
1984	1,476	16.3	2,018	22.3	1,194	13.2	1,142	12.6
1985	1,387	15.3	2,193	24.2	1,256	13.8	1,173	12.9
1986	1,494	16.4	2,513	27.5	1,120	12.3	1,214	13.3
1987	1,479	16.1	2,377	25.9	1,099	12.0	1,168	12.7
1988	1,522	16.5	2,626	28.5	1,080	11.7	1,187	12.9
1989	2,052	22.2	2,633	28.5	1,170	12.6	832	9.0
1990	2,009	21.6	2,863	30.8	1,123	12.1	807	8.7
1991	2,095	22.3	2,773	29.5	1,060	11.3	823	8.8
1992	2,114	22.3	2,697	28.5	947	10.0	774	8.2
1993	2,105	22.1	2,981	31.3	1,006	10.6	753	7.9
1994	2,224	23.2	2,877	30.0	1,035	10.8	805	8.4
1995	2,247	23.3	3,002	31.1	1,002	10.4	754	7.8
1996	2,348	24.1	3,010	30.9	968	9.9	760	7.8
1997	2,435	24.9	2,813	28.8	966	9.9	697	7.1

Note: Rates are per 100,000 population. 1980-1996 population estimates have been revised by the Department of Management & Budget. Cancer includes leukemias, aleukemias, and Hodgkin's disease beginning with 1921. Stroke was called Cerebrovascular disease between 1969-1995 and Vascular Lesions Affecting-Central Nervous System prior to 1968. Accidents includes Motor Vehicle accidents. Accidents exclude injuries undetermined whether accidentally or purposely inflicted since 1968. Motor vehicle accidents do not include collision with heavier vehicles from 1910 through 1922. Motorcycle accidents are included beginning 1923. Chronic liver disease and cirrhosis was called Cirrhosis of the Liver prior to 1979. Atherosclerosis was called General Arteriosclerosis prior to 1968 and was called Arteriosclerosis from 1968-1978.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.9
Selected Vital Statistics by County
Michigan Residents, 1997

Area	Population Estimate	Deaths	Live Births	Low Weight Live Births	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages	Divorces
Michigan	9,773,892	82,994	133,549	10,335	1,085	748	1,385	798	66,974	38,202
Alcona	10,980	170	92	4	-	-	-	-	73	56
Alger	9,958	91	96	5	1	-	-	-	60	43
Allegan	100,585	784	1,415	83	9	4	5	1	774	402
Alpena	30,638	333	353	14	2	2	4	2	250	150
Antrim	20,975	226	250	18	2	2	3	1	156	108
Arenac	16,411	176	165	9	1	-	-	-	98	50
Baraga	8,448	139	108	3	2	2	-	-	54	36
Barry	53,533	429	682	45	9	6	6	1	378	255
Bay	110,423	1,029	1,338	101	10	6	9	4	799	446
Benzie	14,290	137	190	15	1	1	1	-	126	73
Berrien	160,713	1,480	2,201	195	22	18	29	15	1,320	730
Branch	43,628	435	507	31	4	3	4	2	292	199
Calhoun	141,821	1,517	1,825	127	17	6	9	3	1,209	697
Cass	49,967	430	523	43	6	4	5	1	338	221
Charlevoix	23,630	216	320	15	5	5	5	-	205	127
Cheboygan	23,535	323	276	17	3	-	1	1	209	98
Chippewa	37,900	281	418	22	3	3	5	2	283	126
Clare	29,011	373	358	33	1	1	4	3	233	150
Clinton	63,087	401	793	40	3	1	4	3	392	261
Crawford	13,880	127	150	12	1	1	-	-	93	49
Delta	38,801	404	391	15	2	1	3	3	277	157
Dickinson	27,062	314	299	12	-	-	-	-	207	127
Eaton	100,173	675	1,200	86	2	2	6	5	735	515
Emmet	28,339	245	345	16	-	-	6	6	254	119
Genesee	435,393	3,731	6,315	603	81	45	71	36	3,148	1,994
Gladwin	24,879	280	252	19	3	2	2	1	182	96
Gogebic	17,439	278	170	19	6	6	4	-	120	56
Gd Traverse	73,161	627	894	45	4	3	5	4	661	396
Gratiot	40,024	423	509	34	5	4	5	3	277	126
Hillsdale	46,240	418	567	39	4	2	6	4	332	214
Houghton	35,810	391	388	17	2	1	3	2	234	106
Huron	35,270	398	390	20	1	1	3	2	222	138
Ingham	284,089	1,717	3,989	297	28	15	34	24	2,158	1,273
Ionia	61,112	434	780	52	7	5	9	4	429	258
Iosco	25,129	345	251	14	-	-	2	2	204	135
Iron	13,067	214	106	6	-	-	-	-	84	46
Isabella	57,623	364	633	41	1	-	4	4	415	219
Jackson	155,346	1,398	2,072	136	18	15	20	7	1,102	761
Kalamazoo	229,192	1,737	3,124	251	27	20	37	20	1,791	1,014
Kalkaska	15,451	141	196	17	2	2	2	-	101	71

Source: 1997 Michigan Resident Death, Birth and Fetal Death Files and Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.9 (continued)
Selected Vital Statistics by County
Michigan Residents, 1997

Area	Population Estimate	Deaths	Live Births	Low Weight Live Births	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages	Divorces
Kent	539,425	3,937	8,998	608	63	44	91	55	4,641	2,386
Keweenaw	2,078	31	18	1	-	-	-	-	22	3
Lake	10,153	141	114	14	-	-	1	1	73	22
Lapeer	86,893	595	1,097	94	10	9	11	3	584	386
Leelanau	18,755	165	197	11	1	1	2	1	142	65
Lenawee	97,998	801	1,184	65	4	4	8	4	508	423
Livingston	141,914	855	1,901	84	9	7	11	4	925	614
Luce	6,584	69	72	4	2	1	1	-	50	27
Mackinac	11,113	133	114	3	1	-	1	1	232	57
Macomb	783,451	6,622	9,776	626	57	42	93	63	5,712	2,529
Manistee	23,179	271	248	17	1	1	1	-	149	99
Marquette	61,792	599	638	32	3	1	5	4	448	251
Mason	27,854	306	288	23	5	3	3	-	216	133
Mecosta	39,178	316	444	29	3	3	7	5	286	153
Menominee	24,443	254	218	11	1	1	1	-	166	92
Midland	81,248	581	988	74	7	7	8	4	599	344
Missaukee	13,682	133	173	14	-	-	1	1	114	53
Monroe	142,301	1,126	1,789	120	12	5	8	4	875	665
Montcalm	59,647	519	845	44	4	1	3	3	506	258
Montmorency	9,980	153	91	4	-	-	-	-	57	41
Muskegon	165,882	1,536	2,385	183	23	16	30	16	1,368	821
Newaygo	45,059	448	633	44	3	2	9	7	360	218
Oakland	1,166,512	8,402	15,992	1,158	97	72	146	81	8,066	4,599
Oceana	24,599	216	323	11	1	-	1	1	219	126
Ogemaw	20,955	255	238	16	1	1	1	-	128	69
Ontonagon	8,117	135	66	4	-	-	1	1	44	1
Osceola	22,028	233	279	15	-	-	2	2	146	84
Oscoda	8,844	105	105	8	1	-	-	-	67	36
Otsego	21,800	183	275	19	2	1	2	1	213	120
Ottawa	220,403	1,340	3,356	189	20	17	23	12	1,666	-
Presque Isle	14,392	189	143	8	-	-	2	2	84	43
Roscommon	23,174	347	202	18	1	1	1	-	170	88
Saginaw	211,278	1,895	2,903	262	27	20	34	18	1,395	714
St Clair	157,704	1,360	2,057	163	16	13	17	8	1,166	713
St Joseph	61,234	580	856	55	5	3	4	1	461	331
Sanilac	42,736	498	604	50	-	-	3	3	318	164
Schoolcraft	8,748	125	93	5	-	-	2	2	38	31
Shiawassee	72,236	564	943	64	8	6	11	7	556	266
Tuscola	58,087	539	684	44	10	9	8	2	357	216
Van Buren	75,686	636	1,053	79	12	10	14	6	573	346
Washtenaw	299,503	1,622	4,048	296	25	22	32	18	2,063	1,133
Wayne	2,127,087	20,200	31,843	3,171	353	234	462	284	10,700	7,207
Wexford	29,147	298	337	22	2	2	5	4	236	177
Unknown	-	50	7	2	-	-	3	3	-	-

Source: 1997 Michigan Resident Death, Birth and Fetal Death Files and Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.10
Selected Vital Statistics Rates by County
Michigan Residents, 1997

Area	Deaths	Live Births	Low Weight Live Births	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages	Divorces
Michigan	8.5	13.7	77.4	8.1	5.6	10.3	5.9	13.7	7.8
Alcona	15.5	8.4	*	-	-	-	-	13.3	10.2
Alger	9.1	9.6	*	*	-	-	-	12.1	8.6
Allegan	7.8	14.1	58.7	6.4	*	*	*	15.4	8.0
Alpena	10.9	11.5	39.7	*	*	*	*	16.3	9.8
Antrim	10.8	11.9	72.0	*	*	*	*	14.9	10.3
Arenac	10.7	10.1	54.5	*	-	-	-	11.9	6.1
Baraga	16.5	12.8	*	*	*	-	-	12.8	8.5
Barry	8.0	12.7	66.0	13.2	8.8	8.8	*	14.1	9.5
Bay	9.3	12.1	75.5	7.5	4.5	6.7	*	14.5	8.1
Benzie	9.6	13.3	78.9	*	*	*	-	17.6	10.2
Berrien	9.2	13.7	88.6	10.0	8.2	13.1	6.8	16.4	9.1
Branch	10.0	11.6	61.1	*	*	*	*	13.4	9.1
Calhoun	10.7	12.9	69.6	9.3	3.3	4.9	*	17.0	9.8
Cass	8.6	10.5	82.2	11.5	*	*	*	13.5	8.8
Charlevoix	9.1	13.5	46.9	*	*	*	-	17.4	10.7
Cheboygan	13.7	11.7	61.6	*	-	*	*	17.8	8.3
Chippewa	7.4	11.0	52.6	*	*	*	*	14.9	6.6
Clare	12.9	12.3	92.2	*	*	*	*	16.1	10.3
Clinton	6.4	12.6	50.4	*	*	*	*	12.4	8.3
Crawford	9.1	10.8	80.0	*	*	-	-	13.4	7.1
Delta	10.4	10.1	38.4	*	*	*	*	14.3	8.1
Dickinson	11.6	11.0	40.1	-	-	-	-	15.3	9.4
Eaton	6.7	12.0	71.7	*	*	5.0	*	14.7	10.3
Emmet	8.6	12.2	46.4	-	-	17.1	17.1	17.9	8.4
Genesee	8.6	14.5	95.5	12.8	7.1	11.2	5.7	14.5	9.2
Gladwin	11.3	10.1	75.4	*	*	*	*	14.6	7.7
Gogebic	15.9	9.7	111.8	35.3	35.3	*	-	13.8	6.4
Gd Traverse	8.6	12.2	50.3	*	*	*	*	18.1	10.8
Gratiot	10.6	12.7	66.8	*	*	*	*	13.8	6.3
Hillsdale	9.0	12.3	68.8	*	*	10.5	*	14.4	9.3
Houghton	10.9	10.8	43.8	*	*	*	*	13.1	5.9
Huron	11.3	11.1	51.3	*	*	*	*	12.6	7.8
Ingham	6.0	14.0	74.5	7.0	3.8	8.5	6.0	15.2	9.0
Ionia	7.1	12.8	66.7	9.0	*	11.5	*	14.0	8.4
Iosco	13.7	10.0	55.8	-	-	*	*	16.2	10.7
Iron	16.4	8.1	56.6	-	-	-	-	12.9	7.0
Isabella	6.3	11.0	64.8	*	-	*	*	14.4	7.6
Jackson	9.0	13.3	65.6	8.7	7.2	9.6	3.4	14.2	9.8
Kalamazoo	7.6	13.6	80.3	8.6	6.4	11.8	6.4	15.6	8.8
Kalkaska	9.1	12.7	86.7	*	*	*	-	13.1	9.2

Note: Birth and death rates are per 1,000 population. Infant and fetal death rates are per 1,000 live births. Marriage and divorce rates are persons per 1,000 population rather than events per population. Asterisk (*) indicates that data do not meet the standards of reliability or precision.

Source: 1997 Michigan Resident Death, Birth and Fetal Death Files and Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.10 (continued)
Selected Vital Statistics Rates by County
Michigan Residents, 1997

Area	Deaths	Live Births	Low Weight Live Births	Infant Deaths	Neonatal Deaths	Perinatal Deaths	Fetal Deaths	Marriages	Divorces
Kent	7.3	16.7	67.6	7.0	4.9	10.1	6.1	17.2	8.8
Keweenaw	14.9	8.7	*	-	-	-	-	21.2	*
Lake	13.9	11.2	122.8	-	-	*	*	14.4	4.3
Lapeer	6.8	12.6	85.7	9.1	8.2	10.0	*	13.4	8.9
Leelanau	8.8	10.5	55.8	*	*	*	*	15.1	6.9
Lenawee	8.2	12.1	54.9	*	*	6.7	*	10.4	8.6
Livingston	6.0	13.4	44.2	4.7	3.7	5.8	*	13.0	8.7
Luce	10.5	10.9	*	*	*	*	-	15.2	8.2
Mackinac	12.0	10.3	*	*	-	*	*	41.8	10.3
Macomb	8.5	12.5	64.0	5.8	4.3	9.5	6.4	14.6	6.5
Manistee	11.7	10.7	68.5	*	*	*	-	12.9	8.5
Marquette	9.7	10.3	50.5	*	*	*	*	14.5	8.1
Mason	11.0	10.3	79.9	*	*	*	-	15.5	9.5
Mecosta	8.1	11.3	65.3	*	*	15.6	*	14.6	7.8
Menominee	10.4	8.9	50.5	*	*	*	-	13.6	7.5
Midland	7.2	12.2	74.9	7.1	7.1	8.1	*	14.7	8.5
Missaukee	9.7	12.6	80.9	-	-	*	*	16.7	7.7
Monroe	7.9	12.6	67.1	6.7	*	4.5	*	12.3	9.3
Montcalm	8.7	14.2	52.1	*	*	*	*	17.0	8.7
Montmorency	15.3	9.1	*	-	-	-	-	11.4	8.2
Muskegon	9.3	14.4	76.7	9.6	6.7	12.5	6.7	16.5	9.9
Newaygo	9.9	14.0	69.5	*	*	14.1	10.9	16.0	9.7
Oakland	7.2	13.7	72.4	6.1	4.5	9.1	5.0	13.8	7.9
Oceana	8.8	13.1	34.1	*	-	*	*	17.8	10.2
Ogemaw	12.2	11.4	67.2	*	*	*	-	12.2	6.6
Ontonagon	16.6	8.1	*	-	-	*	*	10.8	*
Osceola	10.6	12.7	53.8	-	-	*	*	13.3	7.6
Oscoda	11.9	11.9	76.2	*	*	-	-	15.2	8.1
Otsego	8.4	12.6	69.1	*	*	*	*	19.5	11.0
Ottawa	6.1	15.2	56.3	6.0	5.1	6.8	3.6	15.1	-
Presque Isle	13.1	9.9	55.9	-	-	*	*	11.7	6.0
Roscommon	15.0	8.7	89.1	*	*	*	-	14.7	7.6
Saginaw	9.0	13.7	90.3	9.3	6.9	11.6	6.2	13.2	6.8
St Clair	8.6	13.0	79.2	7.8	6.3	8.2	3.9	14.8	9.0
St Joseph	9.5	14.0	64.3	*	*	*	*	15.1	10.8
Sanilac	11.7	14.1	82.8	-	-	*	*	14.9	7.7
Schoolcraft	14.3	10.6	*	-	-	*	*	8.7	7.1
Shiawassee	7.8	13.1	67.9	8.5	6.4	11.6	7.4	15.4	7.4
Tuscola	9.3	11.8	64.3	14.6	13.2	11.7	*	12.3	7.4
Van Buren	8.4	13.9	75.0	11.4	9.5	13.2	5.7	15.1	9.1
Washtenaw	5.4	13.5	73.1	6.2	5.4	7.9	4.4	13.8	7.6
Wayne	9.5	15.0	99.6	11.1	7.3	14.4	8.8	10.1	6.8
Wexford	10.2	11.6	65.3	*	*	*	*	16.2	12.1

Note: Birth and death rates are per 1,000 population. Infant and fetal death rates are per 1,000 live births. Marriage and divorce rates are persons per 1,000 population rather than events per population. Asterisk (*) indicates that data do not meet the standards of reliability or precision.

Source: 1997 Michigan Resident Death, Birth and Fetal Death Files and Occurrence Marriage and Divorce Files, Division for Vital Records and Health Statistics, MDCH

Table 4.11
Live Births with Selected Risk Factors by County
Michigan Residents, 1997

Area	Medical Risk Factor Present		Complications of Labor/Delivery		Abnormal Conditions of Newborn		Mother Smoked While Pregnant		Mother Drank Alcohol While Pregnant	
	Number	%	Number	%	Number	%	Number	%	Number	%
Michigan	31,523	23.6	38,600	28.9	11,420	8.6	23,218	17.4	1,791	1.3
Alcona	41	44.6	35	38.0	8	8.7	25	27.2	1	*
Alger	14	14.6	29	30.2	5	*	20	20.8	1	*
Allegan	279	19.7	404	28.6	108	7.6	258	18.2	15	1.1
Alpena	146	41.4	146	41.4	28	7.9	101	28.6	3	*
Antrim	52	20.8	74	29.6	11	4.4	67	26.8	9	3.6
Arenac	36	21.8	42	25.5	6	3.6	53	32.1	-	-
Baraga	33	30.6	32	29.6	4	*	33	30.6	4	*
Barry	179	26.2	251	36.8	76	11.1	144	21.1	3	*
Bay	369	27.6	360	26.9	64	4.8	328	24.5	11	0.8
Benzie	40	21.1	50	26.3	6	3.2	64	33.7	17	8.9
Berrien	447	20.3	372	16.9	99	4.5	392	17.8	27	1.2
Branch	117	23.1	170	33.5	22	4.3	126	24.9	6	1.2
Calhoun	390	21.4	542	29.7	73	4.0	423	23.2	26	1.4
Cass	206	39.4	136	26.0	38	7.3	147	28.1	5	*
Charlevoix	46	14.4	80	25.0	13	4.1	83	25.9	5	*
Cheboygan	88	31.9	92	33.3	20	7.2	73	26.4	2	*
Chippewa	52	12.4	124	29.7	30	7.2	111	26.6	1	*
Clare	59	16.5	89	24.9	18	5.0	65	18.2	5	*
Clinton	136	17.2	207	26.1	47	5.9	73	9.2	9	1.1
Crawford	51	34.0	49	32.7	13	8.7	53	35.3	1	*
Delta	96	24.6	110	28.1	31	7.9	79	20.2	1	*
Dickinson	38	12.7	53	17.7	5	*	70	23.4	5	*
Eaton	194	16.2	354	29.5	78	6.5	169	14.1	17	1.4
Emmet	73	21.2	121	35.1	11	3.2	72	20.9	5	*
Genesee	903	14.3	735	11.6	116	1.8	1,347	21.3	84	1.3
Gladwin	55	21.8	67	26.6	9	3.6	48	19.0	1	*
Gogebic	51	30.0	70	41.2	20	11.8	45	26.5	8	4.7
Gd Traverse	178	19.9	229	25.6	32	3.6	200	22.4	71	7.9
Gratiot	70	13.8	123	24.2	30	5.9	91	17.9	1	*
Hillsdale	117	20.6	203	35.8	63	11.1	144	25.4	2	*
Houghton	114	29.4	124	32.0	16	4.1	86	22.2	8	2.1
Huron	98	25.1	115	29.5	30	7.7	88	22.6	8	2.1
Ingham	927	23.2	1,275	32.0	292	7.3	412	10.3	77	1.9
Ionia	145	18.6	205	26.3	55	7.1	199	25.5	8	1.0
Iosco	85	33.9	114	45.4	10	4.0	90	35.9	3	*
Iron	8	7.5	15	14.2	5	*	31	29.2	5	*
Isabella	115	18.2	197	31.1	31	4.9	116	18.3	1	*
Jackson	343	16.6	838	40.4	31	1.5	377	18.2	8	0.4
Kalamazoo	1,549	49.6	1,546	49.5	329	10.5	603	19.3	38	1.2
Kalkaska	55	28.1	57	29.1	12	6.1	77	39.3	16	8.2

Note: Examples of medical risk factors include: anemia, diabetes, hypertension, eclampsia, renal disease, maternal drug use. Examples of complications of labor and/or delivery include: abruptio placenta, seizures during labor, dysfunctional labor, fetal distress, breech/malpresentation, cord prolapse. Examples of abnormal conditions of the newborn include: anemia, birth injury, fetal alcohol syndrome; hyaline membrane disease, seizures. Congenital anomalies reported have increased due to a change in reporting procedure. 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. Asterisk (*) indicates that data do not meet the standards of reliability or precision.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.11 (continued)
Live Births with Selected Risk Factors by County
Michigan Residents, 1997

Area	Medical Risk Factor Present		Complications of Labor/Delivery		Abnormal Conditions of Newborn		Mother Smoked While Pregnant		Mother Drank Alcohol While Pregnant	
	Number	%	Number	%	Number	%	Number	%	Number	%
Kent	1,580	17.6	2,550	28.3	1,288	14.3	1,300	14.4	107	1.2
Keweenaw	7	38.9	5	*	2	*	4	*	-	-
Lake	29	25.4	21	18.4	4	*	49	43.0	3	*
Lapeer	232	21.1	249	22.7	72	6.6	212	19.3	9	0.8
Leelanau	40	20.3	51	25.9	3	*	43	21.8	15	7.6
Lenawee	272	23.0	310	26.2	76	6.4	240	20.3	11	0.9
Livingston	354	18.6	586	30.8	64	3.4	236	12.4	86	4.5
Luce	16	22.2	24	33.3	4	*	20	27.8	-	-
Mackinac	23	20.2	40	35.1	5	*	32	28.1	-	-
Macomb	2,559	26.2	3,114	31.9	1,760	18.0	1,892	19.4	124	1.3
Manistee	45	18.1	90	36.3	9	3.6	53	21.4	6	2.4
Marquette	128	20.1	199	31.2	19	3.0	133	20.8	8	1.3
Mason	79	27.4	83	28.8	15	5.2	74	25.7	6	2.1
Mecosta	89	20.0	118	26.6	32	7.2	93	20.9	-	-
Menominee	75	34.4	99	45.4	12	5.5	53	24.3	7	3.2
Midland	355	35.9	272	27.5	82	8.3	142	14.4	2	*
Missaukee	73	42.2	26	15.0	12	6.9	46	26.6	2	*
Monroe	462	25.8	581	32.5	148	8.3	357	20.0	12	0.7
Montcalm	117	13.8	213	25.2	56	6.6	206	24.4	9	1.1
Montmorency	27	29.7	27	29.7	3	*	27	29.7	-	-
Muskegon	228	9.6	448	18.8	89	3.7	552	23.1	26	1.1
Newaygo	123	19.4	173	27.3	59	9.3	144	22.7	2	*
Oakland	4,649	29.1	5,683	35.5	2,361	14.8	1,913	12.0	193	1.2
Oceana	56	17.3	99	30.7	17	5.3	67	20.7	3	*
Ogemaw	52	21.8	77	32.4	3	*	77	32.4	-	-
Ontonagon	15	22.7	16	24.2	1	*	15	22.7	-	-
Osceola	75	26.9	53	19.0	18	6.5	79	28.3	2	*
Oscoda	28	26.7	32	30.5	7	6.7	29	27.6	1	*
Otsego	60	21.8	59	21.5	19	6.9	69	25.1	2	*
Ottawa	443	13.2	783	23.3	261	7.8	321	9.6	18	0.5
Presque Isle	53	37.1	68	47.6	8	5.6	24	16.8	-	-
Roscommon	49	24.3	73	36.1	14	6.9	77	38.1	1	*
Saginaw	834	28.7	823	28.3	77	2.7	606	20.9	63	2.2
St Clair	385	18.7	431	21.0	143	7.0	536	26.1	32	1.6
St Joseph	313	36.6	273	31.9	88	10.3	204	23.8	11	1.3
Sanilac	108	17.9	140	23.2	20	3.3	137	22.7	6	1.0
Schoolcraft	18	19.4	31	33.3	2	*	27	29.0	4	*
Shiawassee	163	17.3	223	23.6	53	5.6	189	20.0	10	1.1
Tuscola	159	23.2	162	23.7	11	1.6	142	20.8	6	0.9
Van Buren	338	32.1	348	33.0	68	6.5	220	20.9	20	1.9
Washtenaw	821	20.3	1,463	36.1	46	1.1	205	5.1	19	0.5
Wayne	7,866	24.7	8,578	26.9	2,464	7.7	5,299	16.6	435	1.4
Wexford	126	37.4	68	20.2	28	8.3	89	26.4	11	3.3
Unknown	4	*	3	*	2	*	2	*	1	*

Note: Examples of medical risk factors include: anemia, diabetes, hypertension, eclampsia, renal disease, maternal drug use. Examples of complications of labor and/or delivery include: abruptio placenta, seizures during labor, dysfunctional labor, fetal distress, breech/malpresentation, cord prolapse. Examples of abnormal conditions of the newborn include: anemia, birth injury, fetal alcohol syndrome, hyaline membrane disease, seizures. Congenital anomalies reported have increased due to a change in reporting procedure. 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. Asterisk (*) indicates that data do not meet the standards of reliability or precision.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.11 (continued)
Live Births with Selected Risk Factors by County
Michigan Residents, 1997

Area	Congenital Anomalies Reported		Inadequate Prenatal Care		Mother's Education <12 Grade		Mother <18 Years of Age	
	Number	%	Number	%	Number	%	Number	%
Michigan	1,503	1.1	10,763	8.1	23,111	17.3	5,660	4.2
Alcona	-	-	6	6.5	19	20.7	7	7.6
Alger	1	*	5	*	14	14.6	4	*
Allegan	4	*	64	4.5	217	15.3	65	4.6
Alpena	1	*	9	2.5	65	18.4	18	5.1
Antrim	-	-	10	4.0	41	16.4	14	5.6
Arenac	3	*	7	4.2	38	23.0	11	6.7
Baraga	2	*	1	*	14	13.0	5	*
Barry	14	2.1	14	2.1	98	14.4	26	3.8
Bay	14	1.0	44	3.3	238	17.8	54	4.0
Benzie	1	*	8	4.2	25	13.2	6	3.2
Berrien	10	0.5	183	8.3	555	25.2	171	7.8
Branch	5	*	45	8.9	129	25.4	19	3.7
Calhoun	26	1.4	84	4.6	405	22.2	122	6.7
Cass	3	*	32	6.1	131	25.0	36	6.9
Charlevoix	5	*	16	5.0	45	14.1	14	4.4
Cheboygan	5	*	7	2.5	41	14.9	11	4.0
Chippewa	8	1.9	21	5.0	65	15.6	19	4.5
Clare	2	*	26	7.3	105	29.3	30	8.4
Clinton	9	1.1	23	2.9	76	9.6	22	2.8
Crawford	2	*	4	*	35	23.3	12	8.0
Delta	4	*	18	4.6	46	11.8	21	5.4
Dickinson	2	*	10	3.3	30	10.0	11	3.7
Eaton	6	0.5	49	4.1	148	12.3	43	3.6
Emmet	6	1.7	8	2.3	44	12.8	9	2.6
Genesee	26	0.4	241	3.8	1,277	20.2	386	6.1
Gladwin	4	*	32	12.7	69	27.4	8	3.2
Gogebic	4	*	3	*	20	11.8	6	3.5
Gd Traverse	7	0.8	30	3.4	89	10.0	27	3.0
Gratiot	8	1.6	13	2.6	73	14.3	19	3.7
Hillsdale	11	1.9	44	7.8	107	18.9	27	4.8
Houghton	7	1.8	11	2.8	25	6.4	10	2.6
Huron	8	2.1	23	5.9	46	11.8	12	3.1
Ingham	24	0.6	191	4.8	699	17.5	176	4.4
Ionia	6	0.8	36	4.6	129	16.5	37	4.7
Iosco	3	*	14	5.6	54	21.5	11	4.4
Iron	1	*	7	6.6	11	10.4	5	*
Isabella	3	*	20	3.2	81	12.8	21	3.3
Jackson	4	*	310	15.0	335	16.2	118	5.7
Kalamazoo	32	1.0	155	5.0	461	14.8	127	4.1
Kalkaska	2	*	10	5.1	38	19.4	11	5.6

Note: Examples of medical risk factors include: anemia, diabetes, hypertension, eclampsia, renal disease, maternal drug use. Examples of complications of labor and/or delivery include: abruptio placenta, seizures during labor, dysfunctional labor, fetal distress, breech/malpresentation, cord prolapse. Examples of abnormal conditions of the newborn include: anemia, birth injury, fetal alcohol syndrome, hyaline membrane disease, seizures. Congenital anomalies reported have increased due to a change in reporting procedure. 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. Asterisk (*) indicates that data do not meet the standards of reliability or precision.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.11 (continued)
Live Births with Selected Risk Factors by County
Michigan Residents, 1997

Area	Congenital Anomalies Reported		Inadequate Prenatal Care		Mother's Education <12 Grade		Mother <18 Years of Age	
	Number	%	Number	%	Number	%	Number	%
Kent	49	0.5	499	5.5	1,592	17.7	396	4.4
Keweenaw	-	-	1	*	2	*	-	-
Lake	2	*	12	10.5	29	25.4	11	9.6
Lapeer	11	1.0	51	4.6	141	12.9	43	3.9
Leelanau	1	*	8	4.1	30	15.2	7	3.6
Lenawee	11	0.9	57	4.8	226	19.1	55	4.6
Livingston	18	0.9	136	7.2	91	4.8	23	1.2
Luce	-	-	8	11.1	12	16.7	5	*
Mackinac	1	*	5	*	14	12.3	-	-
Macomb	145	1.5	861	8.8	978	10.0	162	1.7
Manistee	1	*	16	6.5	36	14.5	10	4.0
Marquette	4	*	24	3.8	49	7.7	22	3.4
Mason	5	*	22	7.6	79	27.4	17	5.9
Mecosta	13	2.9	44	9.9	84	18.9	14	3.2
Menominee	4	*	12	5.5	23	10.6	6	2.8
Midland	23	2.3	18	1.8	99	10.0	25	2.5
Missaukee	-	-	2	*	33	19.1	8	4.6
Monroe	20	1.1	73	4.1	288	16.1	64	3.6
Montcalm	9	1.1	53	6.3	167	19.8	47	5.6
Montmorency	-	-	3	*	15	16.5	2	*
Muskegon	14	0.6	128	5.4	479	20.1	139	5.8
Newaygo	6	0.9	35	5.5	146	23.1	31	4.9
Oakland	254	1.6	830	5.2	1,382	8.6	289	1.8
Oceana	4	*	30	9.3	100	31.0	23	7.1
Ogemaw	2	*	7	2.9	42	17.6	8	3.4
Ontonagon	-	-	3	*	8	12.1	2	*
Osceola	3	*	21	7.5	70	25.1	16	5.7
Oscoda	2	*	4	*	41	39.0	8	7.6
Otsego	2	*	5	*	37	13.5	11	4.0
Ottawa	28	0.8	134	4.0	430	12.8	117	3.5
Presque Isle	1	*	3	*	17	11.9	3	*
Roscommon	2	*	7	3.5	51	25.2	11	5.4
Saginaw	35	1.2	135	4.7	651	22.4	168	5.8
St Clair	22	1.1	168	8.2	312	15.2	66	3.2
St Joseph	15	1.8	35	4.1	229	26.8	54	6.3
Sanilac	8	1.3	68	11.3	121	20.0	19	3.1
Schoolcraft	2	*	4	*	14	15.1	4	*
Shiawassee	1	*	32	3.4	157	16.6	25	2.7
Tuscola	7	1.0	15	2.2	83	12.1	22	3.2
Van Buren	8	0.8	62	5.9	279	26.5	77	7.3
Washtenaw	20	0.5	619	15.3	299	7.4	83	2.1
Wayne	465	1.5	4,665	14.7	7,964	25.0	1,802	5.7
Wexford	2	*	12	3.6	72	21.4	14	4.2
Unknown	-	-	2	*	1	*	-	-

Note: Examples of medical risk factors include: anemia, diabetes, hypertension, eclampsia, renal disease, maternal drug use. Examples of complications of labor and/or delivery include: abruptio placenta, seizures during labor, dysfunctional labor, fetal distress, breech/malpresentation, cord prolapse. Examples of abnormal conditions of the newborn include: anemia, birth injury, fetal alcohol syndrome, hyaline membrane disease, seizures. Congenital anomalies reported have increased due to a change in reporting procedure. 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. Asterisk (*) indicates that data do not meet the standards of reliability or precision.

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.12
Live Births by Age of Mother and County
Michigan Residents, 1997

Area	Age of Mother													Not Stated
	Total	<15	15	16	17	18	19	15-19	20-24	25-29	30-34	35-39	40+	
Michigan	133,549	278	711	1,700	2,971	4,426	5,550	15,358	31,164	39,403	31,664	13,327	2,333	22
Alcona	92	-	2	2	3	4	3	14	21	29	19	7	2	-
Alger	96	-	-	1	3	3	3	10	23	29	30	2	2	-
Allegan	1,415	1	14	20	30	33	65	162	366	425	326	120	15	-
Alpena	353	-	1	4	13	13	24	55	90	101	76	26	5	-
Antrim	250	-	2	5	7	10	11	35	57	66	63	26	3	-
Arenac	165	1	2	4	4	9	13	32	47	43	28	11	3	-
Baraga	108	1	-	-	4	3	6	13	33	29	18	8	6	-
Barny	682	2	1	10	13	18	37	79	160	228	138	65	10	-
Bay	1,338	3	8	15	28	62	54	167	332	423	281	121	11	-
Benzie	190	1	1	1	3	7	7	19	52	52	43	16	7	-
Berrien	2,201	15	17	56	83	112	126	394	559	581	445	181	26	-
Branch	507	-	-	3	16	20	31	70	148	165	80	37	6	1
Calhoun	1,825	4	15	35	68	75	109	302	542	512	324	124	17	-
Cass	523	1	3	9	23	16	39	90	154	147	94	27	10	-
Charlevoix	320	1	1	6	6	10	15	38	82	103	64	26	6	-
Cheboygan	276	-	-	1	10	11	15	37	79	85	49	21	5	-
Chippewa	418	-	1	8	10	19	20	58	125	122	77	28	8	-
Clare	358	-	4	11	15	16	21	67	116	92	51	27	5	-
Clinton	793	-	3	6	13	20	25	67	141	254	225	94	12	-
Crawford	150	-	1	4	7	4	9	25	42	35	23	22	3	-
Delta	391	-	-	11	10	9	11	41	96	130	79	38	7	-
Dickinson	299	1	1	2	7	12	7	29	66	105	69	22	7	-
Eaton	1,200	2	7	12	22	24	55	120	303	370	265	117	23	-
Emmet	345	-	2	3	4	7	12	28	82	96	70	62	7	-
Genesee	6,315	16	50	110	210	271	353	994	1,724	1,773	1,241	466	101	-
Gladwin	252	1	-	2	5	16	11	34	81	76	40	17	3	-
Gogebic	170	-	-	3	3	3	9	18	48	43	30	24	7	-
Gd Traverse	894	2	2	6	17	18	38	81	205	260	217	113	16	-
Gratiot	509	-	1	8	10	33	24	76	143	146	110	28	6	-
Hillsdale	567	-	4	9	14	26	27	80	169	169	94	44	11	-
Houghton	388	-	-	4	6	11	16	37	96	108	86	52	8	1
Huron	390	-	1	1	10	5	18	35	102	131	85	33	4	-
Ingham	3,989	12	19	52	93	130	168	462	998	1,201	868	371	76	1
Ionia	780	2	3	9	23	31	30	96	235	232	151	55	8	1
Iosco	251	-	2	2	7	10	13	34	77	57	59	20	4	-
Iron	106	1	-	1	3	4	5	13	28	25	27	11	1	-
Isabella	633	-	2	7	12	21	36	78	160	201	137	53	4	-
Jackson	2,072	9	15	29	65	85	100	294	578	635	385	145	26	-
Kalamazoo	3,124	3	15	47	62	99	141	364	712	927	752	301	65	-
Kalkaska	196	-	-	6	5	12	11	34	69	53	30	10	-	-

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.12 (continued)
Live Births by Age of Mother and County
Michigan Residents, 1997

Area	Age of Mother													Not Stated
	Total	<15	15	16	17	18	19	15-19	20-24	25-29	30-34	35-39	40+	
Kent	8,998	25	61	135	175	270	329	970	1,993	2,742	2,198	934	135	1
Keweenaw	18	-	-	-	-	1	3	4	1	4	4	5	-	-
Lake	114	1	1	5	4	4	4	18	41	31	18	4	1	-
Lapeer	1,097	1	4	12	26	36	42	120	258	334	273	93	18	-
Leelanau	197	-	-	2	5	4	1	12	44	50	51	32	8	-
Lenawee	1,184	2	7	16	30	49	49	151	334	345	257	73	21	1
Livingston	1,901	1	2	9	11	32	40	94	224	550	689	294	48	1
Luce	72	-	-	1	4	2	5	12	19	19	20	2	-	-
Mackinac	114	-	-	-	-	4	6	10	39	29	24	8	4	-
Macomb	9,776	8	13	42	99	199	242	595	1,698	3,268	2,943	1,105	157	2
Manistee	248	-	2	2	6	7	8	25	68	71	58	20	5	1
Marquette	638	1	1	9	11	16	30	67	167	192	126	63	22	-
Mason	288	2	4	2	9	16	9	40	80	75	63	24	4	-
Mecosta	444	-	4	3	7	17	26	57	146	127	77	32	5	-
Menominee	218	-	1	3	2	8	7	21	70	58	53	15	1	-
Midland	988	-	4	7	14	25	19	69	204	320	281	102	12	-
Missaukee	173	-	-	2	6	3	12	23	42	62	29	14	3	-
Monroe	1,789	-	9	19	36	65	92	221	469	534	406	147	12	-
Montcalm	845	1	5	13	28	47	54	147	266	234	133	55	7	2
Montmorency	91	-	-	2	-	5	5	12	24	30	15	9	1	-
Muskegon	2,385	4	15	43	77	119	160	414	729	662	394	138	44	-
Newaygo	633	4	2	11	14	19	41	87	188	182	112	45	14	1
Oakland	15,992	6	28	91	164	265	364	912	2,268	4,653	5,320	2,431	402	-
Oceana	323	-	1	7	15	19	17	59	97	86	52	19	10	-
Ogemaw	238	-	-	4	4	10	13	31	68	74	48	15	1	1
Ontonagon	66	-	-	-	2	4	2	8	26	18	10	4	-	-
Osceola	279	-	-	2	14	12	16	44	95	71	36	27	6	-
Oscoda	105	-	-	3	5	6	3	17	36	30	17	4	1	-
Otsego	275	-	2	5	4	7	16	34	67	91	58	22	3	-
Ottawa	3,356	2	11	43	61	81	114	310	656	1,110	898	327	53	-
Presque Isle	143	-	-	-	3	6	6	15	42	45	32	9	-	-
Roscommon	202	-	3	4	4	9	11	31	66	58	32	13	2	-
Saginaw	2,903	14	22	50	82	109	156	419	747	853	594	246	30	-
St Clair	2,057	2	9	17	38	81	87	232	523	654	450	170	26	-
St Joseph	856	1	7	12	34	40	57	150	293	238	109	57	8	-
Sanilac	604	2	2	3	12	13	26	56	180	195	97	61	13	-
Schoolcraft	93	-	-	2	2	-	6	10	36	29	14	4	-	-
Shiawassee	943	1	6	7	11	39	52	115	231	329	185	74	8	-
Tuscola	684	-	6	6	10	25	25	72	178	234	135	52	13	-
Van Buren	1,053	-	8	27	42	45	60	182	297	274	196	88	16	-
Washtenaw	4,048	4	10	25	44	94	95	268	625	1,149	1,257	621	122	2
Wayne	31,843	117	261	526	898	1,310	1,504	4,499	8,274	8,931	6,587	2,884	546	5
Wexford	337	-	-	3	11	11	18	43	113	103	60	13	5	-
Unknown	7	-	-	-	-	-	-	-	1	-	4	1	-	1

Source: 1997 Michigan Resident Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.13
Vital Statistics for Residents of Selected Michigan Cities and Townships
 Michigan Residents, 1997

City/Township	Live Births	Deaths	Infant Deaths		Fetal Deaths	
			Number	Rate	Number	Rate
Allen Park	306	380	-	-	-	-
Ann Arbor	1,394	551	7	5.0	8	5.7
Battle Creek	1,010	690	7	6.9	2	*
Bay City	644	406	7	10.9	3	*
Bloomfield Twp.	215	228	-	-	1	*
Burton City	375	266	1	*	-	-
Canton Twp.	1,123	268	4	*	6	5.3
Chesterfield Twp	393	131	1	*	1	*
Clinton Twp	1,200	808	6	5.0	4	*
Commerce Twp	381	105	-	-	1	*
Dearborn	1,793	958	9	5.0	13	7.2
Dearborn Heights	683	664	5	*	4	*
Delta Twp	292	179	-	-	-	-
Detroit	16,725	10,134	253	15.1	186	11.0
East Detroit	423	403	2	*	2	*
East Lansing	296	183	2	*	2	*
Farmington Hills	953	626	5	*	3	*
Ferndale	340	228	4	*	1	*
Flint	2,929	1,329	49	16.7	27	9.1
Flint Twp	321	325	4	*	-	-
Garden City	418	268	4	*	3	*
Georgetown Twp	492	203	3	*	-	-
Grand Blanc Twp	235	178	1	*	-	-
Grand Rapids	3,958	1,876	35	8.8	27	6.8
Highland Park	290	231	6	20.7	4	*
Holland	652	288	5	*	3	*
Inkster	470	357	2	*	2	*
Jackson	935	387	12	12.8	6	6.4
Kalamazoo	1,449	631	11	7.6	10	6.9
Kentwood	701	174	4	*	3	*
Lansing	2,418	894	21	8.7	16	6.6
Lincoln Park	544	449	2	*	3	*
Livonia	1,104	984	8	7.2	1	*
Madison Heights	408	299	1	*	3	*
Meridian Twp	382	196	3	*	1	*
Midland	518	356	4	*	3	*
Mount Morris Twp	203	192	10	49.3	1	*
Muskegon	787	510	13	16.5	4	*
Novi City	614	227	2	*	-	-
Oak Park	454	257	4	*	2	*
Pontiac	1,323	607	19	14.4	16	11.9
Portage	507	278	5	*	2	*
Port Huron	526	342	4	*	2	*
Redford Twp	745	536	4	*	7	9.3
Rochester Hills City	766	401	1	*	3	*
Roseville	672	486	4	*	5	*
Royal Oak	832	563	6	7.2	7	8.3
Saginaw	1,349	687	18	13.3	13	9.5
Saginaw Twp	424	337	1	*	-	-
St. Clair Shores	693	782	5	*	2	*
Shelby Twp	574	320	5	*	2	*
Southfield	937	813	7	7.5	7	7.4
Southgate	327	284	2	*	1	*
Sterling Heights	1,513	865	11	7.3	7	4.6
Taylor	1,050	552	11	10.5	6	5.7
Troy	914	473	2	*	8	8.7
Warren	1,834	1,489	10	5.5	14	7.6
Waterford Twp	1,059	441	10	9.4	7	6.6
West Bloomfield Twp	732	370	3	*	1	*
Westland	1,325	797	10	7.5	9	6.7
Wyandotte	340	310	1	*	3	*
Wyoming	1,123	372	2	*	4	*
Ypsilanti Twp	602	235	7	11.6	-	-

Note: Cities and townships are selected with 25,000 population or over according to the 1980 or 1990 Census.

Source: 1997 Michigan Resident Birth, Death and Fetal Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.14
Number of Deaths by Underlying Cause and County
Michigan Residents, 1997

Area	All Causes	T.B. (all forms)	All Other Infectious & Parasitic Diseases	Cancer							
				Total	Digestive Organs & Peritoneum	Respiratory & Intrathoracic Organs	Breast	Genital Organs	Urinary Organs	Leukemia	Other
Michigan	82,994	33	1,242	19,504	4,583	5,753	1,547	2,171	884	703	3,863
Alcona	170	-	1	42	8	15	4	4	3	-	8
Alger	91	-	-	27	5	9	1	3	2	1	6
Allegan	784	-	13	181	45	51	10	24	9	6	36
Alpena	333	-	3	78	19	23	8	7	6	1	14
Antrim	226	-	4	48	11	11	1	6	3	2	14
Arenac	176	-	2	45	9	16	5	4	2	3	6
Baraga	139	-	2	23	6	9	-	2	1	-	5
Barry	429	-	3	108	18	35	14	11	2	5	23
Bay	1,029	-	6	249	61	83	14	22	12	10	47
Benzie	137	-	2	22	1	6	1	6	3	-	5
Berrien	1,480	-	10	352	84	116	25	38	14	9	66
Branch	435	-	7	105	24	35	8	6	11	7	14
Calhoun	1,517	-	14	352	66	105	29	36	19	13	84
Cass	430	-	3	121	25	45	10	11	2	6	22
Charlevoix	216	-	-	60	8	23	4	5	-	3	17
Cheboygan	323	-	5	79	17	22	2	8	2	9	19
Chippewa	281	-	1	70	20	25	3	9	2	1	10
Clare	373	-	3	95	18	37	2	6	7	6	19
Clinton	401	-	5	92	16	30	7	11	5	5	18
Crawford	127	-	-	36	8	18	4	1	-	-	5
Delta	404	-	3	112	18	42	12	12	8	4	16
Dickinson	314	-	3	59	16	13	3	10	2	7	8
Eaton	675	-	10	167	36	38	14	19	12	7	41
Emmet	245	-	4	47	14	14	4	3	1	1	10
Genesee	3,731	-	41	855	181	296	61	104	28	21	164
Gladwin	280	-	3	68	10	30	4	3	2	2	17
Gogebic	278	-	4	60	12	14	2	10	4	4	14
Gd Traverse	627	-	4	165	37	50	8	26	6	10	28
Gratiot	423	-	7	76	22	15	6	9	7	6	11
Hillsdale	418	-	10	101	25	25	8	10	7	3	23
Houghton	391	-	4	82	27	13	4	9	3	2	24
Huron	398	-	2	100	20	31	6	12	7	7	17
Ingham	1,717	-	27	379	85	93	34	43	18	22	84
Ionia	434	-	3	109	26	32	5	16	6	7	17
Iosco	345	-	5	88	18	28	4	12	6	4	16
Iron	214	-	1	53	10	18	5	4	3	4	9
Isabella	364	-	5	86	12	35	7	10	3	2	17
Jackson	1,398	-	25	342	80	102	24	44	18	9	65
Kalamazoo	1,737	-	22	408	97	100	30	57	12	18	94
Kalkaska	141	-	1	42	9	20	1	2	2	1	7

Note: Genital organs cancer includes prostate cancer.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County
 Michigan Residents, 1997

Area	All Causes	T.B. (all forms)	All Other Infectious & Parasitic Diseases	Cancer							
				Total	Digestive Organs & Peritoneum	Respiratory & Intrathoracic Organs	Breast	Genital Organs	Urinary Organs	Leukemia	Other
Kent	3,937	1	52	896	216	231	71	91	54	34	199
Keweenaw	31	-	-	8	2	1	-	1	2	2	-
Lake	141	-	3	36	12	10	3	5	1	1	4
Lapeer	595	-	5	147	27	48	10	19	4	7	32
Leelanau	165	-	-	37	11	7	5	3	4	2	5
Lenawee	801	-	7	205	47	65	16	17	16	9	35
Livingston	855	-	13	212	49	51	20	28	6	6	52
Luce	69	-	1	17	7	3	1	4	-	-	2
Mackinac	133	-	2	28	7	8	4	5	1	1	2
Macomb	6,622	2	74	1,691	399	525	139	169	71	58	330
Manistee	271	-	2	74	20	18	5	10	4	4	13
Marquette	599	1	6	108	23	33	5	10	5	2	30
Mason	306	-	4	77	22	17	12	7	4	2	13
Mecosta	316	-	4	62	13	23	5	9	4	3	5
Menominee	254	-	2	45	13	17	1	6	2	3	3
Midland	581	-	1	151	40	37	16	12	7	7	32
Missaukee	133	-	-	30	11	9	-	4	-	2	4
Monroe	1,126	-	15	263	54	95	16	30	6	8	54
Montcalm	519	1	6	127	24	44	7	15	4	4	29
Montmorency	153	-	2	39	10	11	2	3	2	2	9
Muskegon	1,536	-	23	377	90	106	20	42	21	16	82
Newaygo	448	-	6	108	18	34	5	12	10	6	23
Oakland	8,402	4	116	2,024	466	581	175	199	99	65	439
Oceana	216	-	-	61	22	12	3	9	-	1	14
Ogemaw	255	-	3	82	9	29	6	13	3	4	18
Ontonagon	135	-	-	34	7	12	3	5	2	1	4
Osceola	233	-	2	46	10	18	2	6	3	2	5
Oscoda	105	-	-	25	9	6	2	2	-	1	5
Otsego	183	-	1	40	12	12	5	3	2	-	6
Ottawa	1,340	-	7	310	80	75	19	37	19	12	68
Presque Isle	189	-	1	45	11	10	3	9	1	-	11
Roscommon	347	-	5	83	15	33	7	6	2	4	16
Saginaw	1,895	1	38	418	98	115	25	53	15	19	93
St. Clair	1,360	-	13	320	71	111	21	40	18	5	54
St. Joseph	580	-	5	136	28	49	9	16	7	4	23
Sanilac	498	1	9	110	29	25	3	16	3	7	27
Schoolcraft	125	-	1	30	8	13	1	3	-	-	5
Shiawassee	564	-	2	136	28	37	17	16	9	4	25
Tuscola	539	-	5	149	43	31	10	26	9	6	24
Van Buren	636	-	11	163	38	44	8	21	10	2	40
Washtenaw	1,622	1	27	408	97	107	43	50	15	8	88
Wayne	20,200	20	494	4,494	1,151	1,298	423	494	177	149	802
Wexford	298	1	3	60	11	17	5	7	2	2	16
Unknown	50	-	3	8	1	2	-	3	-	-	2

Note: Genital organs cancer includes prostate cancer.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.14 (continued)
Number of Deaths by Underlying Cause and County
Michigan Residents, 1997

Area	Diabetes Mellitus	Nutritional Deficiencies	Major Cardiovascular Diseases						Pneumonia & Influenza	C.O.P.D. and Allied Diseases	Ulcer of Stomach and Duodenum	Chronic Liver Disease & Cirrhosis
			Total	Diseases of the Heart	Hypertension with or without Renal Disease	Stroke	Atherosclerosis	Other Diseases of Arteries Arterioles Capillaries				
Michigan	2,435	164	35,031	27,150	423	5,725	697	1,036	2,813	3,635	199	966
Alcona	1	1	81	60	1	15	3	2	9	9	-	2
Alger	3	-	36	29	-	4	1	2	1	3	-	-
Allegan	23	2	327	257	5	52	2	11	38	45	-	7
Alpena	4	-	156	122	2	29	1	2	12	10	2	2
Antrim	8	-	110	92	-	14	1	3	4	13	1	1
Arenac	4	-	81	58	1	12	8	2	5	12	-	2
Baraga	7	-	80	64	-	10	1	5	1	4	1	-
Barry	18	-	155	118	1	23	6	7	26	26	1	3
Bay	45	-	484	376	4	69	21	14	27	44	3	11
Benzie	3	-	75	68	-	7	-	-	2	8	-	-
Berrien	56	3	614	446	15	114	20	19	46	59	4	20
Branch	22	-	189	151	3	28	1	6	16	17	-	4
Calhoun	55	4	635	460	6	143	8	18	66	87	5	21
Cass	21	1	153	116	3	28	2	4	12	27	2	-
Charlevoix	3	-	84	60	2	14	1	7	5	8	-	1
Cheboygan	5	1	135	111	-	18	-	6	12	17	6	2
Chippewa	5	-	135	100	2	25	1	7	5	12	-	4
Clare	13	-	150	131	2	10	-	7	15	29	1	2
Clinton	15	-	175	136	3	33	1	2	11	20	1	3
Crawford	4	2	51	35	-	11	4	1	4	8	1	2
Delta	19	-	148	120	1	23	2	2	21	23	1	1
Dickinson	10	-	138	109	3	21	1	4	10	13	-	2
Eaton	18	5	296	234	2	48	4	8	19	23	-	6
Emmet	11	-	117	97	3	14	-	3	12	9	1	3
Genesee	128	14	1,561	1,258	27	211	18	47	85	187	11	42
Gladwin	4	-	120	100	1	17	1	1	7	18	-	5
Gogebic	2	-	112	80	1	23	2	6	13	13	6	6
Gd Traverse	9	3	231	181	3	40	3	4	34	30	-	6
Gratiot	7	1	218	154	1	56	2	5	23	15	-	5
Hillsdale	6	-	152	119	5	24	1	3	25	24	-	2
Houghton	7	-	176	123	1	41	6	5	18	15	-	4
Huron	13	-	194	150	3	36	3	2	8	16	2	4
Ingham	59	2	683	526	7	120	7	23	46	86	6	18
Ionia	18	2	179	139	1	31	4	4	14	18	1	2
Iosco	10	-	152	105	2	27	14	4	23	18	2	7
Iron	5	-	107	86	-	16	2	3	3	7	1	1
Isabella	13	1	147	114	3	23	2	5	16	22	1	4
Jackson	25	2	596	432	9	131	15	9	51	80	7	10
Kalamazoo	63	6	660	498	10	123	8	21	88	80	5	13
Kalkaska	6	-	52	32	1	11	6	2	6	4	-	2

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County
 Michigan Residents, 1997

Area	Diabetes Mellitus	Nutritional Deficiencies	Major Cardiovascular Diseases						Pneumonia & Influenza	C.O.P.D. and Allied Diseases	Ulcer of Stomach and Duodenum	Chronic Liver Disease & Cirrhosis
			Total	Diseases of the Heart	Hypertension with or without Renal Disease	Stroke	Atherosclerosis	Other Diseases of Arteries Arterioles Capillaries				
Kent	78	13	1,605	1,236	10	288	16	55	180	178	7	43
Keweenaw	1	-	15	10	-	4	-	1	-	2	-	1
Lake	5	-	59	48	1	7	2	1	6	7	-	-
Lapeer	16	-	241	195	4	31	6	5	13	37	-	6
Leelanau	5	-	66	48	-	14	1	3	9	7	1	1
Lenawee	27	-	327	249	6	50	12	10	21	40	-	8
Livingston	22	3	315	234	3	58	10	10	27	44	4	9
Luce	1	-	30	21	1	6	-	2	-	3	-	-
Mackinac	2	-	65	55	-	9	-	1	7	5	1	-
Macomb	176	20	2,901	2,247	17	459	106	72	202	305	14	79
Manistee	12	-	110	81	1	19	5	4	11	11	-	2
Marquette	16	-	272	199	1	55	7	10	17	23	2	7
Mason	11	-	131	97	2	23	3	6	14	13	1	-
Mecosta	13	-	137	114	-	20	-	3	22	12	1	1
Menominee	11	-	110	86	-	14	8	2	6	21	1	2
Midland	27	-	229	161	6	45	8	9	22	33	1	4
Missaukee	3	-	58	40	-	14	3	1	4	8	-	-
Monroe	40	1	500	392	9	71	6	22	23	52	4	8
Montcalm	21	-	195	153	2	29	-	11	21	35	1	7
Montmorency	2	-	71	59	-	9	1	2	2	11	-	-
Muskegon	50	1	642	476	7	118	15	26	52	55	1	18
Newaygo	10	-	179	130	-	34	4	11	13	24	-	8
Oakland	227	19	3,555	2,742	50	581	84	98	255	375	18	90
Oceana	8	1	86	74	1	9	2	-	7	7	1	3
Ogemaw	9	-	103	73	1	10	11	8	8	18	-	3
Ontonagon	7	1	68	49	-	13	4	2	3	2	-	-
Osceola	7	-	108	94	-	10	1	3	5	14	-	6
Oscoda	2	-	54	46	-	6	-	2	2	6	-	2
Otsego	5	-	75	55	-	15	3	2	6	9	2	1
Ottawa	24	4	574	415	8	122	13	16	72	50	-	7
Presque Isle	5	-	87	70	-	11	1	5	10	5	-	2
Roscommon	15	-	166	127	1	26	6	6	7	16	1	-
Saginaw	71	1	809	617	6	142	12	32	71	74	5	25
St. Clair	51	3	597	449	11	106	9	22	47	61	4	18
St. Joseph	23	1	247	196	2	38	5	6	6	33	2	15
Sanilac	23	-	216	185	3	23	1	4	13	19	-	6
Schoolcraft	3	-	48	38	-	8	-	2	11	7	1	3
Shiawassee	18	-	248	155	2	64	18	9	18	27	4	3
Tuscola	17	1	215	174	4	26	2	9	19	23	3	7
Van Buren	23	2	249	195	2	36	8	8	12	33	1	6
Washtenaw	48	5	584	434	4	116	6	24	47	69	5	15
Wayne	542	37	8,588	6,880	120	1,259	113	216	675	682	40	318
Wexford	9	1	127	83	4	30	2	8	8	16	-	2
Unknown	1	-	24	21	-	2	-	1	-	4	1	-

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County
 Michigan Residents, 1997

Area	Nephritis, Nephrotic Syndrome & Nephrosis	Complica- tions of Pregnancy, Childbirth & the Puer- perium	Congenital Anomalies	Certain Conditions Originating in the Perinatal Period	Symptoms, Signs, & Ill-defined Conditions	All Other Disease	Accidents			Suicide	Homicide and Legal Inter- vention	All Other External Causes
							Total	Motor Vehicle	All Other			
Michigan	1,095	12	418	586	485	9,333	3,118	1,507	1,611	1,003	781	141
Alcona	2	-	-	-	-	14	8	3	5	-	-	-
Alger	3	-	1	-	1	13	2	1	1	1	-	-
Allegan	9	-	5	3	4	78	38	20	18	9	2	-
Alpena	4	-	-	2	1	45	10	3	7	3	-	1
Antrim	2	-	3	1	-	19	10	7	3	2	-	-
Arenac	1	-	2	-	-	16	2	2	-	2	2	-
Baraga	2	-	3	-	1	7	6	4	2	2	-	-
Barry	1	-	5	3	1	43	25	12	13	8	2	1
Bay	13	-	1	5	4	96	33	19	14	8	-	-
Benzie	-	-	-	1	1	16	7	5	2	-	-	-
Berrien	14	1	9	14	3	181	63	26	37	13	17	1
Branch	6	-	2	1	-	49	16	13	3	1	-	-
Calhoun	13	1	6	6	13	137	81	35	46	16	5	-
Cass	6	-	1	4	3	44	22	13	9	8	2	-
Charlevoix	-	-	4	1	1	40	5	-	5	4	-	-
Cheboygan	1	-	3	-	1	34	17	5	12	4	1	-
Chippewa	4	-	-	3	2	31	7	2	5	2	-	-
Clare	6	-	1	1	2	35	14	12	2	3	3	-
Clinton	6	-	3	-	2	38	24	11	13	5	1	-
Crawford	1	-	-	1	-	10	4	1	3	3	-	-
Delta	7	-	4	1	-	43	18	7	11	3	-	-
Dickinson	7	-	1	-	7	41	18	7	11	3	2	-
Eaton	15	-	1	3	2	64	28	14	14	14	3	1
Emmet	3	-	-	-	-	19	15	10	5	4	-	-
Genesee	53	-	21	38	27	443	147	76	71	37	32	9
Gladwin	1	-	2	2	2	26	18	7	11	4	-	-
Gogebic	6	-	2	4	7	33	7	1	6	1	2	-
Gd Traverse	7	-	3	1	2	93	33	18	15	5	1	-
Gratiot	3	1	1	3	-	49	10	5	5	3	1	-
Hillsdale	8	-	1	2	2	48	28	11	17	9	-	-
Houghton	4	-	1	1	3	50	20	6	14	5	-	1
Huron	5	-	1	1	-	38	11	6	5	2	1	-
Ingham	24	-	9	10	11	249	64	24	40	25	18	1
Ionia	4	-	2	6	4	45	21	13	8	6	-	-
Iosco	5	-	-	-	-	20	9	5	4	5	-	1
Iron	3	-	1	-	2	18	10	4	6	2	-	-
Isabella	5	-	-	-	1	39	17	13	4	6	1	-
Jackson	12	-	7	11	7	142	57	32	25	19	3	2
Kalamazoo	18	-	14	17	8	238	66	27	39	21	7	3
Kalkaska	-	-	1	1	2	17	5	1	4	2	-	-

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.14 (continued)
 Number of Deaths by Underlying Cause and County
 Michigan Residents, 1997

Area	Nephritis, Nephrotic Syndrome & Nephrosis	Complica- tions of Pregnancy, Childbirth & the Puer- perium	Congenital Anomalies	Certain Conditions Originating in the Perinatal Period	Symptoms, Signs, & Ill-defined Conditions	All Other Disease	Accidents			Suicide	Homicide and Legal Inter- vention	All Other External Causes
							Total	Motor Vehicle	All Other			
Kent	54	1	29	27	11	521	148	69	79	59	31	3
Keweenaw	-	-	-	-	-	4	-	-	-	-	-	-
Lake	-	-	-	-	1	15	5	4	1	4	-	-
Lapeer	10	-	4	6	1	68	25	19	6	13	3	-
Leelanau	2	-	2	-	-	25	6	2	4	4	-	-
Lenawee	10	-	2	3	4	94	42	26	16	9	2	-
Livingston	12	-	4	7	3	121	41	18	23	16	1	1
Luce	3	-	-	1	1	11	1	1	-	-	-	-
Mackinac	-	-	1	-	2	14	5	4	1	1	-	-
Macomb	81	-	23	35	27	694	170	92	78	85	15	28
Manistee	1	-	-	1	-	37	4	-	4	5	1	-
Marquette	8	-	2	1	6	99	23	12	11	6	2	-
Mason	4	-	1	2	2	35	9	4	5	1	1	-
Mecosta	-	-	-	2	-	39	16	11	5	6	1	-
Menominee	4	-	-	-	25	13	7	4	3	7	-	-
Midland	5	-	5	3	3	68	20	16	4	8	-	1
Missaukee	3	-	1	-	-	15	7	5	2	3	1	-
Monroe	16	-	10	4	7	124	41	24	17	17	1	-
Montcalm	12	1	3	-	5	54	26	19	7	4	-	-
Montmorency	3	-	-	-	2	16	4	2	2	1	-	-
Muskegon	27	1	13	10	7	161	63	26	37	27	7	1
Newaygo	7	-	1	2	-	46	34	20	14	7	3	-
Oakland	127	1	39	60	46	992	257	117	140	111	52	34
Oceana	2	-	-	-	-	21	14	7	7	4	1	-
Ogemaw	2	-	-	1	-	17	8	6	2	1	-	-
Ontonagon	1	-	-	-	4	11	2	-	2	1	1	-
Osceola	1	-	-	-	1	27	9	5	4	6	1	-
Oscoda	1	-	-	-	-	9	4	1	3	-	-	-
Otsego	1	1	1	1	-	25	11	6	5	4	-	-
Ottawa	21	-	7	9	6	181	53	30	23	10	2	3
Presque Isle	5	-	-	-	-	22	7	3	4	-	-	-
Roscommon	5	-	1	-	1	27	16	12	4	3	1	-
Saginaw	33	-	6	14	7	223	63	30	33	19	15	2
St. Clair	15	-	10	11	7	131	44	26	18	20	6	2
St. Joseph	4	-	2	1	1	58	36	23	13	7	2	1
Sanilac	8	-	-	-	1	58	27	10	17	6	-	1
Schoolcraft	2	-	1	-	-	12	4	2	2	2	-	-
Shiawassee	10	-	2	4	4	57	18	10	8	12	1	-
Tuscola	10	-	2	7	1	42	20	10	10	12	3	3
Van Buren	5	-	4	7	5	71	33	13	20	9	2	-
Washtenaw	18	-	13	16	7	250	64	34	30	31	10	4
Wayne	271	4	107	202	160	2,115	720	298	422	186	509	36
Wexford	6	-	1	2	-	43	14	4	10	5	-	-
Unknown	1	-	-	-	-	6	1	1	-	1	-	-

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.15
Cases of Certain Reported Communicable Diseases by County
Michigan Residents, 1997

Area	Total	Gonorrhea	Chicken Pox	Hepatitis (all types)	Salmonella Infections	Tuberculosis	Syphilis	Mumps	Dysentery Bacillary	Measles	Rubella	Meningococcal Infections	Whooping Cough
Michigan	43,697	15,647	24,160	2,224	906	374	178	28	51	2	-	56	71
Alcona	-	-	-	-	-	-	-	-	-	-	-	-	-
Alger	-	-	-	-	-	-	-	-	-	-	-	-	-
Allegan	215	12	178	8	13	-	1	-	-	-	-	-	-
Alpena	45	-	40	2	1	-	-	-	-	-	-	1	2
Antrim	14	-	12	-	1	1	-	-	-	-	-	-	2
Arenac	11	-	5	2	2	2	-	-	-	-	-	-	-
Baraga	-	-	-	-	-	-	-	-	-	-	-	-	-
Barry	57	5	35	10	4	1	-	-	1	-	-	-	1
Bay	413	38	350	11	8	1	-	-	-	-	-	1	4
Benzie	8	-	3	1	3	1	-	-	-	-	-	-	-
Berrien	1,227	536	606	52	8	5	12	2	3	1	-	2	-
Branch	58	3	28	25	-	1	-	-	-	-	-	1	-
Calhoun	660	308	1	329	12	3	3	-	-	-	-	3	1
Cass	310	17	259	26	5	-	-	-	3	-	-	-	-
Charlevoix	58	-	53	1	3	-	-	-	-	-	-	1	-
Cheboygan	23	-	19	2	2	-	-	-	-	-	-	-	-
Chippewa	130	3	123	4	-	-	-	-	-	-	-	-	-
Clare	53	1	50	-	1	-	-	-	-	-	-	-	1
Clinton	14	3	-	7	4	-	-	-	-	-	-	-	-
Crawford	110	2	106	1	1	-	-	-	-	-	-	-	-
Delta	59	2	41	8	8	-	-	-	-	-	-	-	-
Dickinson	67	-	65	1	1	-	-	-	-	-	-	-	-
Eaton	147	16	104	16	7	1	1	-	2	-	-	-	-
Emmet	27	-	20	1	4	2	-	-	-	-	-	-	-
Genesee	2,176	1,851	214	59	35	10	4	2	-	-	-	-	1
Gladwin	19	1	11	6	-	-	-	-	-	-	-	-	1
Gogebic	47	-	47	-	-	-	-	-	-	-	-	-	-
Gd Traverse	219	11	190	2	15	1	-	-	-	-	-	-	-
Gratiot	9	8	-	-	1	-	-	-	-	-	-	-	-
Hillsdale	119	1	91	21	4	1	-	-	-	-	-	-	1
Houghton	57	-	56	-	-	1	-	-	-	-	-	-	-
Huron	15	-	11	-	1	1	-	-	-	-	-	-	-
Ingham	590	437	2	38	71	12	1	-	22	-	-	2	-
Ionia	198	8	181	3	4	-	-	-	1	-	-	3	4
Iosco	15	4	7	1	2	1	-	-	-	-	-	-	1
Iron	25	1	24	-	-	-	-	-	-	-	-	-	-
Isabella	83	6	70	4	3	-	-	-	-	-	-	-	-
Jackson	357	177	136	14	17	9	-	1	-	-	-	3	-
Kalamazoo	845	322	423	59	28	4	6	-	-	-	-	3	-
Kalkaska	106	-	105	-	-	1	-	-	-	-	-	-	-

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH

Table 4.15 (continued)
Cases of Certain Reported Communicable Diseases by County
Michigan Residents, 1997

Area	Total	Gonorrhea	Chicken Pox	Hepatitis (all types)	Salmonella Infections	Tuberculosis	Syphilis	Mumps	Dysentery Bacillary	Measles	Rubella	Meningococcal Infections	Whooping Cough
Kent	2,101	1,172	808	27	41	26	12	2	1	-	-	2	10
Keweenaw	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake	10	10	-	-	-	-	-	-	-	-	-	-	-
Lapeer	904	3	891	8	1	1	-	-	-	-	-	-	-
Leelanau	7	1	-	1	4	1	-	-	-	-	-	-	-
Lenawee	183	12	155	4	9	2	1	-	-	-	-	-	-
Livingston	484	10	449	5	20	-	-	-	-	-	-	-	-
Luce	-	-	-	-	-	-	-	-	-	-	-	-	-
Mackinac	1	1	-	-	-	-	-	-	-	-	-	-	-
Macomb	3,429	176	3,114	68	48	12	4	1	4	-	-	1	1
Manistee	6	2	4	-	-	-	-	-	-	-	-	-	-
Marquette	45	-	37	-	5	1	-	-	-	-	-	2	-
Mason	53	6	44	1	2	-	-	-	-	-	-	-	-
Mecosta	215	30	176	1	1	-	-	-	-	-	-	-	7
Menominee	52	2	42	2	6	-	-	-	-	-	-	-	-
Midland	198	4	183	1	8	-	-	1	1	-	-	-	-
Missaukee	93	-	89	3	1	-	-	-	-	-	-	-	-
Monroe	396	14	350	16	13	1	-	1	-	-	-	-	1
Montcalm	8	1	1	2	2	-	-	-	1	-	-	1	-
Montmorency	2	-	-	-	1	-	-	-	-	-	-	-	1
Muskegon	1,121	417	679	8	8	3	3	-	-	-	-	-	3
Newaygo	125	-	115	3	5	1	-	-	-	-	-	1	-
Oakland	4,954	1,047	3,498	214	132	35	4	7	6	-	-	3	8
Oceana	1	-	-	-	1	-	-	-	-	-	-	-	-
Ogemaw	5	-	2	2	1	-	-	-	-	-	-	-	-
Ontonagon	132	-	132	-	-	-	-	-	-	-	-	-	-
Osceola	121	1	116	-	4	-	-	-	-	-	-	-	-
Oscoda	2	-	-	-	2	-	-	-	-	-	-	-	-
Otsego	6	-	4	1	1	-	-	-	-	-	-	-	-
Ottawa	686	41	587	30	22	5	-	-	-	-	-	-	1
Presque Isle	80	-	79	-	-	-	-	-	1	-	-	-	-
Roscommon	97	-	87	5	5	-	-	-	-	-	-	-	-
Saginaw	1,288	625	567	55	27	10	2	-	1	-	-	1	-
St. Clair	1,065	20	1,011	18	10	5	-	1	-	-	-	-	-
St. Joseph	83	12	43	19	2	-	-	-	-	-	-	-	7
Sanilac	12	2	-	6	4	-	-	-	-	-	-	-	-
Schoolcraft	-	-	-	-	-	-	-	-	-	-	-	-	-
Shiawassee	276	5	258	2	6	1	-	-	-	-	-	4	-
Tuscola	259	9	247	1	2	-	-	-	-	-	-	-	-
Van Buren	81	17	44	14	6	-	-	-	-	-	-	-	-
Washtenaw	435	363	18	16	25	6	1	-	2	-	-	3	1
Wayne	15,872	7,871	6,447	976	207	205	123	10	2	1	-	18	12
Wexford	223	-	217	1	5	-	-	-	-	-	-	-	-

Source: Bureau of Infectious Disease Control, Disease Control Division, MDCH

Table 4.16
Number of Deaths by Cause
Michigan Residents, 1997

ICD List Number	Cause of Death	Number
I. INFECTIOUS AND PARASITIC DISEASES (001-139)		
3	Other salmonella infections	2
8	Intestinal infections due to other organisms	20
9	Ill-defined intestinal infections	13
11	Pulmonary tuberculosis	22
14	Tuberculosis of intestines, peritoneum and mesenteric glands	1
15	Tuberculosis of bones and joints	2
17	Tuberculosis of other organs	1
18	Miliary tuberculosis	7
31	Diseases due to other mycobacteria	6
35	Erysipelas	1
36	Meningococcal infection	8
38	Septicemia	608
39	Actinomycotic infections	1
40	Other bacterial diseases	4
41	Bacterial infection in conditions classified elsewhere and of unspecified site	12
42	Human immunodeficiency virus infection [AIDS] with specified conditions	289
43	Human immunodeficiency virus infection [AIDS] causing other specified conditions	7
44	Other human immunodeficiency virus infection [AIDS]	21
46	Slow virus infection of central nervous system	4
49	Other non-arthropod-borne viral diseases of central nervous system	1
52	Chickenpox	6
53	Herpes zoster	2
54	Herpes simplex	4
70	Viral hepatitis	95
78	Other diseases due to viruses and Chlamydiae	5
79	Viral infection in conditions classified elsewhere and of unspecified site	3
98	Gonococcal infections	1
99	Other venereal diseases	1
112	Candidiasis	19
114	Coccidioidomycosis	3
117	Other mycoses	41
135	Sarcoidosis	24
136	Other and unspecified infections and parasitic diseases	25
137	Late effects of tuberculosis	2
138	Late effects of acute poliomyelitis	12
139	Late effects of other infectious and parasitic diseases	2
II. CANCER (140-239)		
140	Cancer of lip	3
141	Cancer of tongue	59
142	Cancer of major salivary glands	15
143	Cancer of gum	4
144	Cancer of floor of mouth	7
145	Cancer of other and unspecified parts of mouth	56
146	Cancer of oropharynx	38

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
147	Cancer of nasopharynx	19
148	Cancer of hypopharynx	9
149	Cancer of other and ill-defined sites within the lip, oral cavity and pharynx	48
150	Cancer of esophagus	420
151	Cancer of stomach	421
152	Cancer of small intestine, including duodenum	35
153	Cancer of colon	1,719
154	Cancer of rectum, rectosigmoid junction and anus	305
155	Cancer of liver and intrahepatic bile ducts	412
156	Cancer of gallbladder and extrahepatic bile ducts	155
157	Cancer of pancreas	1,022
158	Cancer of retroperitoneum and peritoneum	36
159	Cancer of other and ill-defined sites within the digestive organs and peritoneum	58
160	Cancer of nasal cavities, middle ear and accessory sinuses	22
161	Cancer of larynx	159
162	Cancer of trachea, bronchus and lung	5,545
163	Cancer of pleura	9
164	Cancer of thymus, heart and mediastinum	18
170	Cancer of bone and articular cartilage	44
171	Cancer of connective and other soft tissue	142
172	Cancer of skin	214
173	Other cancer of skin	61
174	Cancer of female breast	1,538
175	Cancer of male breast	9
179	Cancer of uterus, part unspecified	114
180	Cancer of cervix uteri	122
182	Cancer of body of uterus	113
183	Cancer of ovary and other uterine adnexa	506
184	Cancer of other and unspecified female genital organs	48
185	Cancer of prostate	1,243
186	Cancer of testis	15
187	Cancer of penis and other male genital organs	10
188	Cancer of bladder	428
189	Cancer of kidney and other and unspecified urinary organs	456
190	Cancer of eye	12
191	Cancer of brain	495
192	Cancer of other and unspecified parts of nervous system	7
193	Cancer of thyroid gland	29
194	Cancer of other endocrine glands and related structures	28
195	Cancer of other and ill-defined sites	122
199	Cancer without specification of site	1,115
200	Lymphosarcoma and reticulosarcoma	40
201	Hodgkin's disease	61
202	Other cancer of lymphoid and histiocytic tissue	870
203	Multiple myeloma and immunoproliferative neoplasms	365
204	Lymphoid leukemia	218
205	Myeloid leukemia	280
206	Monocytic leukemia	5
207	Other specified leukemia	3

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
208	Leukemia of unspecified cell type	197
211	Benign neoplasm of other parts of digestive system	2
212	Benign neoplasm of respiratory and intrathoracic organs	4
213	Benign neoplasm of bone and articular cartilage	1
215	Other benign neoplasm of connective and other soft tissue	1
216	Benign neoplasm of skin	2
218	Uterine leiomyoma	1
225	Benign neoplasm of brain and other parts of nervous system	37
227	Benign neoplasm of other endocrine glands and related structures	4
228	Hemangioma and lymphangioma, any site	3
229	Benign neoplasm of other and unspecified sites	3
235	Neoplasm of uncertain behavior of digestive and respiratory systems	13
236	Neoplasm of uncertain behavior of genitourinary organs	2
237	Neoplasm of uncertain behavior of endocrine glands and nervous system	14
238	Neoplasm of uncertain behavior of other and unspecified sites and tissues	55
239	Neoplasm of unspecified nature	92
III. ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES AND IMMUNITY DISORDERS (240-279)		
241	Nontoxic nodular goitre	1
242	Thyrotoxicosis with or without goiter	2
244	Acquired hypothyroidism	48
250	Diabetes mellitus	2,435
251	Other disorders of pancreatic internal secretion	6
252	Disorders of parathyroid gland	7
253	Disorders of the pituitary gland and its hypothalamic control	5
255	Disorders of adrenal glands	8
259	Other endocrine disorders	2
260	Kwashiorkor	5
261	Nutritional marasmus	16
263	Other and unspecified protein-calorie malnutrition	137
269	Other nutritional deficiencies	6
270	Disorders of amino-acid transport and metabolism	1
271	Disorders of carbohydrate transport and metabolism	1
272	Disorders of lipid metabolism	118
273	Disorders of plasma protein metabolism	18
274	Gout	3
275	Disorders of mineral metabolism	15
276	Disorders of fluid, electrolyte and acid-base balance	315
277	Other and unspecified disorders of metabolism	72
278	Obesity and other hyperalimentation	70
279	Disorders involving the immune mechanism	30
IV. DISEASES OF BLOOD AND BLOOD-FORMING ORGANS (280-289)		
280	Iron deficiency anemias	4

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
281	Other deficiency anemias	11
282	Hereditary hemolytic anemias	29
283	Acquired hemolytic anemias	6
284	Aplastic anemias	49
285	Other and unspecified anemia	86
286	Coagulation defects	46
287	Purpura and other hemorrhagic conditions	30
288	Diseases of white blood cells	16
289	Other diseases of blood and blood-forming organs	132
V. MENTAL DISORDERS (290-319)		
290	Senile and presenile organic psychotic conditions	694
291	Alcoholic psychoses	13
292	Drug psychoses	1
293	Transient organic psychotic conditions	1
294	Other organic psychotic conditions (chronic)	7
295	Schizophrenic disorders	9
296	Affective psychoses	4
298	Other nonorganic psychoses	314
300	Neurotic disorders	4
303	Alcohol dependence syndrome	177
304	Drug dependence	4
305	Nondependent abuse of drugs	243
307	Special symptoms or syndromes, not elsewhere classified	3
308	Acute reaction to stress	1
310	Specific nonpsychotic mental disorders following organic brain damage	51
311	Depressive disorder, not elsewhere classified	26
318	Other specified mental retardation	2
319	Unspecified mental retardation	10
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS (320-389)		
320	Bacterial meningitis	17
322	Meningitis of unspecified cause	17
323	Encephalitis, myelitis and encephalomyelitis	13
324	Intracranial and intraspinal abscess	10
325	Phlebitis and thrombophlebitis of intracranial venous sinuses	1
326	Late effects of intracranial abscess or pyogenic infection	3
330	Cerebral degenerations usually manifest in childhood	6
331	Other cerebral degenerations	711
332	Parkinson's disease	457
333	Other extrapyramidal disease and abnormal movement disorders	33
334	Spinocerebellar disease	11
335	Anterior horn cell disease	170
336	Other diseases of spinal cord	6
337	Disorders of the autonomic nervous system	2
340	Multiple sclerosis	132
341	Other demyelinating diseases of central nervous system	1
342	Hemiplegia	8

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
Number of Deaths by Cause
Michigan Residents, 1997

ICD List Number	Cause of Death	Number
343	Infantile cerebral palsy	43
344	Other paralytic syndromes	22
345	Epilepsy	121
348	Other conditions of brain	189
349	Other and unspecified disorders of the nervous system	18
354	Mononeuritis of upper limb	2
355	Mononeuritis of lower limb	1
356	Hereditary and idiopathic peripheral neuropathy	33
357	Inflammatory and toxic neuropathy	12
358	Myoneural disorders	20
359	Muscular dystrophies and other myopathies	43
365	Glaucoma	1
369	Blindness and low vision	1
382	Suppurative and unspecified otitis media	2
383	Mastoiditis and related conditions	2
VII. DISEASES OF THE CIRCULATORY SYSTEM (390-459)		
391	Rheumatic fever with heart involvement	6
394	Diseases of mitral valve	87
395	Diseases of aortic valve	2
396	Diseases of mitral and aortic valves	30
397	Diseases of other endocardial structures	8
398	Other rheumatic heart disease	23
401	Essential hypertension	237
402	Hypertensive heart disease	1,043
403	Hypertensive renal disease	186
404	Hypertensive heart and renal disease	91
410	Acute myocardial infarction	7,892
411	Other acute and subacute forms of ischemic heart disease	14
412	Old myocardial infarction	21
413	Angina pectoris	32
414	Other forms of chronic ischemic heart disease	9,092
415	Acute pulmonary heart disease	262
416	Chronic pulmonary heart disease	111
417	Other diseases of pulmonary circulation	2
420	Acute pericarditis	1
421	Acute and subacute endocarditis	37
422	Acute myocarditis	16
423	Other diseases of pericardium	23
424	Other diseases of endocardium	539
425	Cardiomyopathy	1,108
426	Conduction disorders	31
427	Cardiac dysrhythmias	920
428	Heart failure	1,964
429	Ill-defined descriptions and complications of heart disease	3,795
430	Subarachnoid hemorrhage	238
431	Intracerebral hemorrhage	714
432	Other and unspecified intracranial hemorrhage	249
433	Occlusion and stenosis of precerebral arteries	40

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
434	Occlusion of cerebral arteries	654
435	Transient cerebral ischemia	10
436	Acute but ill-defined cerebrovascular disease	2,895
437	Other and ill-defined cerebrovascular disease	455
438	Late effects of cerebrovascular disease	470
440	Atherosclerosis	697
441	Aortic aneurysm	617
442	Other aneurysm	22
443	Other peripheral vascular disease	268
444	Arterial embolism and thrombosis	46
446	Polyarteritis nodosa and allied conditions	36
447	Other disorders of arteries and arterioles	46
448	Diseases of capillaries	1
451	Phlebitis and thrombophlebitis	114
452	Portal vein thrombosis	5
453	Other venous embolism and thrombosis	25
454	Varicose veins of lower extremities	5
456	Varicose veins of other sites	12
457	Noninfective disorders of lymphatic channels	2
458	Hypotension	27
459	Other disorders of circulatory system	33
VIII. DISEASES OF THE RESPIRATORY SYSTEM (460-519)		
464	Acute laryngitis and tracheitis	1
465	Acute upper respiratory infections of multiple or unspecified sites	2
466	Acute bronchitis and bronchiolitis	12
473	Chronic sinusitis	6
478	Other diseases of upper respiratory tract	3
480	Viral pneumonia	6
481	Pneumococcal pneumonia	59
482	Other bacterial pneumonia	89
483	Pneumonia due to other specified organism	5
485	Bronchopneumonia, organism unspecified	102
486	Pneumonia, organism unspecified	2,538
487	Influenza	14
490	Bronchitis, not specified as acute or chronic	17
491	Chronic bronchitis	78
492	Emphysema	777
493	Asthma	173
494	Bronchiectasis	15
495	Extrinsic allergic alveolitis	1
496	Chronic airways obstruction, not elsewhere classified	2,574
500	Coal workers' pneumoconiosis	5
501	Asbestosis	12
502	Pneumoconiosis due to other silica or silicates	1
505	Pneumoconiosis, unspecified	3
507	Pneumonitis due to solids and liquids	344
510	Empyema	8
511	Pleurisy	35

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
512	Pneumothorax	9
513	Abscess of lung and mediastinum	13
514	Pulmonary congestion and hypostasis	29
515	Postinflammatory pulmonary fibrosis	345
516	Other alveolar and parietoalveolar pneumopathy	16
518	Other diseases of lung	173
519	Other diseases of respiratory system	32
IX. DISEASES OF THE DIGESTIVE SYSTEM (520-579)		
528	Diseases of the oral soft tissues, excluding lesions specific for gingiva and tongue	2
530	Diseases of esophagus	65
531	Gastric ulcer	68
532	Duodenal ulcer	52
533	Peptic ulcer, site unspecified	79
534	Gastrojejunal ulcer	2
535	Gastritis and duodenitis	27
536	Disorders of function of stomach	2
537	Other disorders of stomach and duodenum	6
540	Acute appendicitis	4
541	Appendicitis, unqualified	1
550	Inguinal hernia	10
551	Other hernia of abdominal cavity, with gangrene	2
552	Other hernia of abdominal cavity with obstruction, without mention of gangrene	20
553	Other hernia of abdominal cavity without mention of obstruction or gangrene	11
555	Regional enteritis	16
556	Idiopathic proctocolitis	19
557	Vascular insufficiency of intestine	320
558	Other noninfective gastroenteritis and colitis	58
560	Intestinal obstruction without mention of hernia	194
562	Diverticula of intestine	108
564	Functional digestive disorders, not elsewhere classified	7
566	Abscess of anal and rectal regions	3
567	Peritonitis	92
568	Other disorders of peritoneum	3
569	Other disorders of intestine	97
570	Acute and subacute necrosis of liver	15
571	Chronic liver disease and cirrhosis	966
572	Liver abscess and sequelae of chronic liver disease	139
573	Other disorders of liver	89
574	Cholelithiasis	29
575	Other disorders of gallbladder	39
576	Other disorders of biliary tract	42
577	Diseases of pancreas	129
578	Gastrointestinal hemorrhage	290
579	Intestinal malabsorption	9
X. DISEASES OF THE GENITOURINARY SYSTEM (580-629)		
580	Acute glomerulonephritis	5

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
581	Nephrotic syndrome	7
582	Chronic glomerulonephritis	33
583	Nephritis and nephropathy, not specified as acute or chronic	16
584	Acute renal failure	243
585	Chronic renal failure	269
586	Renal failure, unspecified	518
587	Renal sclerosis, unspecified	3
588	Disorders resulting from impaired renal function	1
590	Infections of kidney	25
591	Hydronephrosis	2
592	Calculus of kidney and ureter	6
593	Other disorders of kidney and ureter	185
595	Cystitis	3
596	Other disorders of bladder	6
598	Urethral structure	1
599	Other disorders of urethra and urinary tract	472
600	Hyperplasia of prostate	13
601	Inflammatory diseases of prostate	1
602	Other disorders of prostate	1
604	Orchitis and epididymitis	1
608	Other disorders of male genital organs	5
611	Other disorders of breast	1
614	Inflammatory disease of ovary, fallopian tube, pelvic cellular tissue and peritoneum	10
619	Fistulae involving female genital tract	5
620	Noninflammatory disorders of ovary, fallopian tube and broad ligament	2
XI. COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM (630-676)		
633	Ectopic pregnancy	2
641	Antepartum haemorrhage, abruptio placentae, and placenta praevia	1
642	Hypertension complicating pregnancy, childbirth and the puerperium	1
658	Other problems associated with amniotic cavity and membranes	1
665	Other obstetrical trauma	1
671	Venous complications in pregnancy and the puerperium	1
673	Obstetrical pulmonary embolism	4
674	Other and unspecified complications of the puerperium, not elsewhere classified	1
XII. DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE (680-709)		
682	Other cellulitis and abscess	32
686	Other local infections of skin and subcutaneous tissue	5
694	Bullous dermatoses	4
695	Erythematous conditions	11
707	Chronic ulcer of skin	80
709	Other disorders of skin and subcutaneous tissue	1
XIII. DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE (710-739)		
710	Diffuse diseases of connective tissue	103

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
711	Arthropathy associated with infections	9
714	Rheumatoid arthritis and other inflammatory polyarthropathies	53
715	Osteoarthritis and allied disorders	14
716	Other and unspecified arthropathies	11
720	Ankylosing spondylitis and other inflammatory spondylopathies	1
721	Spondylosis and allied disorders	4
724	Other and unspecified disorders of back	3
728	Disorders of muscle, ligament and fascia	7
729	Other disorders of soft tissues	19
730	Osteomyelitis, periostitis and other infections involving bone	34
731	Osteitis deformans and osteopathies associated with other disorders classified elsewhere	5
732	Osteochondropathies	2
733	Other disorders of bone and cartilage	32
736	Other aquired deformities of limbs	1
737	Curvature of spine	4
XIV. CONGENITAL ANOMALIES (740-759)		
740	Anencephalus and similar anomalies	10
741	Spina bifida	5
742	Other congenital anomalies of nervous system	72
745	Bulbus cordis anomalies and anomalies of cardiac septal closure	38
746	Other congenital anomalies of heart	86
747	Other congenital anomalies of circulatory system	29
748	Congenital anomalies of respiratory system	46
750	Other congenital anomalies of upper alimentary tract	3
751	Other congenital anomalies of digestive system	7
753	Congenital anomalies of urinary system	23
756	Other congenital musculoskeletal anomalies	16
757	Congenital anomalies of the integument	1
758	Chromosomal anomalies	58
759	Other and unspecified congenital anomalies	24
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	3
761	Fetus or newborn affected by maternal complications of pregnancy	35
762	Fetus or newborn affected by complications of placenta, cord and membranes	40
763	Fetus or newborn affected by other complications of labor and delivery	1
764	Slow fetal growth and fetal malnutrition	1
765	Disorders relating to short gestation and unspecified low birthweight	221
767	Birth trauma	2
768	Intrauterine hypoxia and birth asphyxia	24
769	Respiratory distress syndrome	88
770	Other respiratory conditions of fetus and newborn	75
771	Infections specific to the perinatal period	35
772	Fetal and neonatal hemorrhage	12
774	Other perinatal jaundice	2
776	Hematological disorders of fetus and newborn	1

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
777	Perinatal disorders of digestive system	20
778	Conditions involving the integument and temperature regulation of fetus and newborn . .	6
779	Other and ill-defined conditions originating in the perinatal period	20
XVI. SYMPTOMS, SIGNS AND ILL-DEFINED CONDITIONS (780-799)		
780	General symptoms	19
783	Symptoms concerning nutrition, metabolism and development	5
785	Symptoms involving cardiovascular system	34
786	Symptoms involving respiratory system and other chest symptoms	15
789	Other symptoms involving abdomen and pelvis	1
797	Senility without mention of psychosis	14
798	Sudden death, cause unknown	150
799	Other ill-defined and unknown causes of morbidity and mortality	247
XVII. EXTERNAL CAUSES OF INJURY AND POISONING (E800-E999)		
E800	Railway accident involving collision with rolling stock	1
E805	Hit by rolling stock [railway]	8
E810	Motor vehicle traffic accident involving collision with train	14
E811	Motor vehicle traffic accident involving re-entrant collision with another motor vehicle . .	2
E812	Other motor vehicle traffic accident involving collision with another motor vehicle	654
E813	Motor vehicle traffic accident involving collision with other vehicle	28
E814	Motor vehicle traffic accident involving collision with pedestrian	177
E815	Other motor vehicle traffic accident involving collision on the highway	145
E816	Motor vehicle traffic accident due to loss of control, without collision on the highway . . .	149
E818	Other noncollision motor vehicle traffic accident	28
E819	Motor vehicle traffic accident of unspecified nature	265
E820	Nontraffic accident involving motor-driven snow vehicle	12
E821	Nontraffic accident involving other off-road motor vehicle	10
E822	Other motor vehicle nontraffic accident involving collision with moving object	13
E823	Other motor vehicle nontraffic accident involving collision with stationary object	3
E825	Other motor vehicle nontraffic accident of other and unspecified nature	7
E826	Pedal cycle accident	1
E828	Accident involving animal being ridden	2
E830	Accident to watercraft causing submersion	4
E831	Accident to watercraft causing other injury	1
E832	Other accidental submersion or drowning in water transport accident	6
E838	Other and unspecified water transport accident	3
E841	Accident to powered aircraft, other and unspecified	28
E848	Accidents involving other vehicles not elsewhere classified	3
E850	Accidental poisoning by analgesics, antipyretics, antirheumatics	38
E853	Accidental poisoning by tranquilizers	1
E854	Accidental poisoning by other psychotropic agents	3
E855	Accidental poisoning by other drugs acting on central and autonomic nervous systems . .	29
E856	Accidental poisoning by antibiotics	1
E858	Accidental poisoning by other drugs	112
E860	Accidental poisoning by alcohol, not elsewhere classified	7
E862	Accidental poisoning by petroleum products, other solvents and their vapours, not elsewhere classified	2

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
E866	Accidental poisoning by other and unspecified solid and liquid substances	1
E868	Accidental poisoning by other utility gas and other carbon monoxide	24
E869	Accidental poisoning by other gases and vapors	4
E870	Accidental cut, puncture, perforation or hemorrhage during medical care	4
E874	Mechanical failure of instrument or apparatus during procedure	1
E876	Other and unspecified misadventures during medical care	2
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 procedure	67
E879	Other procedures, without mention of misadventure at the time of procedure, as the cause of abnormal reaction of patient, or of later complication	15
E880	Fall on or from stairs or steps	54
E881	Fall on or from ladders or scaffolding	14
E882	Fall from or out of building or other structure	24
E883	Fall into hole or other opening in surface	3
E884	Other fall from one level to another	25
E885	Fall on same level from slipping, tripping or stumbling	24
E886	Fall on same level from collision, pushing or shoving, by or with other person	1
E887	Fracture, cause unspecified	167
E888	Other and unspecified fall	221
E890	Conflagration in private dwelling	113
E891	Conflagration in other and unspecified building or structure	3
E892	Conflagration not in building or structure	2
E894	Ignition of highly inflammable material	1
E895	Accident caused by controlled fire in private dwelling	4
E898	Accident caused by other specified fire and flames	3
E899	Accident caused by unspecified fire	13
E900	Excessive heat	2
E901	Excessive cold	15
E902	High and low air pressure & changes in air pressure	2
E904	Hunger, thirst, exposure, neglect	6
E905	Venomous animals and plants as the cause of poisoning and toxic reactions	1
E906	Other injury caused by animals	1
E908	Cataclysmic storms, and floods resulting from storms	7
E910	Accidental drowning and submersion	97
E911	Inhalation and ingestion of food causing obstruction of respiratory tract or suffocation	26
E912	Inhalation and ingestion of other object causing obstruction of respiratory tract or suffocation	58
E913	Accidental mechanical suffocation	55
E916	Struck accidentally by falling object	31
E917	Striking against or struck accidentally by objects or persons	7
E918	Caught accidentally in or between objects	7
E919	Accidents caused by machinery	23
E920	Accidents caused by cutting and piercing instruments or objects	2
E922	Accident caused by firearm missile	26
E923	Accident caused by explosive material	4
E925	Accident caused by electric current	17
E927	Overexertion and strenuous movements	3
E928	Other and unspecified environmental and accidental causes	135

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.16 (continued)
 Number of Deaths by Cause
 Michigan Residents, 1997

ICD List Number	Cause of Death	Number
E929	Late effects of accidental injury	34
E932	Hormones and synthetic substitutes	2
E934	Agents primarily affecting blood constituents	2
E946	Agents primarily affecting skin and mucous membranes	1
E947	Adverse effects in therapeutic use of other and unspecified drugs and medicaments [medicinal substances]	7
E950	Suicide and self-inflicted poisoning by solid or liquid substance	93
E951	Suicide and self-inflicted poisoning by gases in domestic use	1
E952	Suicide and self-inflicted poisoning by other gases and vapors	81
E953	Suicide and self-inflicted injury by hanging, strangulation and suffocation	207
E954	Suicide and self-inflicted injury by submersion [drowning]	7
E955	Suicide and self-inflicted injury by firearms and explosives	555
E956	Suicide and self-inflicted injury by cutting and piercing instruments	14
E957	Suicide and self-inflicted injuries by jumping from high place	11
E958	Suicide and self-inflicted injury by other and unspecified means	34
E960	Homicide by fight, brawl, rape	9
E962	Homicide by poisoning	2
E963	Homicide by hanging and strangulation	27
E964	Homicide by submersion [drowning]	1
E965	Homicide by firearms and explosives	543
E966	Homicide by cutting and piercing instrument	84
E967	Homicide by child battering and other maltreatment	11
E968	Homicide by other and unspecified means	92
E969	Homicide by late effects of injury purposely inflicted by other persons	3
E970	Injury due to legal intervention by firearms	9
E980	Poisoning by solid or liquid substances, undetermined whether accidentally or purposely inflicted	96
E982	Poisoning by other gases, undetermined whether accidentally or purposely inflicted	2
E983	Hanging, strangulation or suffocation, undetermined whether accidentally or purposely inflicted	2
E984	Submersion [drowning], undetermined whether accidentally or purposely inflicted	9
E985	Injury by firearms and explosives, undetermined whether accidentally or purposely inflicted	7
E987	Falling from high place, undetermined whether accidentally or purposely inflicted	2
E988	Injury by other and unspecified means, undetermined whether accidentally or purposely inflicted	23

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.17
Population Changes by County
Michigan, 1987 and 1997

Area	Population Estimate July 1, 1987	Population Estimate July 1, 1997	Net Change	Percent Change	Natural Increase	Estimated Net Migration
Michigan	9,187,484	9,773,892	586,408	6.4	605,386	-18,978
Alcona	9,981	10,980	999	10.0	-581	1,580
Alger	8,760	9,958	1,198	13.7	-180	1,378
Allegan	86,970	100,585	13,615	15.7	6,757	6,858
Alpena	30,793	30,638	-155	-0.5	363	-208
Antrim	17,232	20,975	3,743	21.7	396	3,347
Arenac	14,705	16,411	1,706	11.6	215	1,491
Baraga	8,087	8,448	361	4.5	-67	428
Barry	49,242	53,533	4,291	8.7	3,055	1,236
Bay	113,959	110,423	-3,536	-3.1	5,102	-1,566
Benzie	11,692	14,290	2,598	22.2	251	2,347
Berrien	162,973	160,713	-2,260	-1.4	8,509	-6,249
Branch	40,376	43,628	3,252	8.1	1,755	1,497
Calhoun	134,849	141,821	6,972	5.2	6,350	622
Cass	48,729	49,967	1,238	2.5	1,178	60
Charlevoix	20,453	23,630	3,177	15.5	1,070	2,107
Cheboygan	20,579	23,535	2,956	14.4	273	2,683
Chippewa	30,436	37,900	7,464	24.5	1,250	6,214
Clare	24,245	29,011	4,766	19.7	447	4,319
Clinton	56,547	63,087	6,540	11.6	4,363	2,177
Crawford	11,153	13,880	2,727	24.5	438	2,289
Delta	37,776	38,801	1,025	2.7	703	322
Dickinson	26,380	27,062	682	2.6	220	462
Eaton	90,306	100,173	9,867	10.9	5,340	4,527
Emmet	23,855	28,339	4,484	18.8	1,212	3,272
Genesee	433,335	435,393	2,058	0.5	33,122	-31,064
Gladwin	21,051	24,879	3,828	18.2	270	3,558
Gogebic	18,761	17,439	-1,322	-7.0	-896	2,218
Grand Traverse	61,166	73,161	11,995	19.6	3,858	8,137
Gratiot	38,844	40,024	1,180	3.0	1,323	-143
Hillsdale	42,585	46,240	3,655	8.6	2,025	1,630
Houghton	36,035	35,810	-225	-0.6	74	151
Huron	35,703	35,270	-433	-1.2	305	128
Ingham	279,799	284,089	4,290	1.5	24,369	-20,079
Ionia	54,833	61,112	6,279	11.5	4,019	2,260
Iosco	30,017	25,129	-4,888	-16.3	956	3,932
Iron	13,476	13,067	-409	-3.0	-887	1,296
Isabella	53,652	57,623	3,971	7.4	3,327	644
Jackson	147,758	155,346	7,588	5.1	7,948	-360
Kalamazoo	218,687	229,192	10,505	4.8	15,934	-5,429
Kalkaska	12,954	15,451	2,497	19.3	815	1,682

Source: Michigan Resident Birth and Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.17 (continued)
Population Changes by County
Michigan, 1987 and 1997

Area	Population Estimate July 1, 1987	Population Estimate July 1, 1997	Net Change	Percent Change	Natural Increase	Estimated Net Migration
Kent	479,365	539,425	60,060	12.5	53,807	6,253
Keweenaw	1,895	2,078	183	9.7	-149	332
Lake	8,178	10,153	1,975	24.2	-277	2,252
Lapeer	71,503	86,893	15,390	21.5	5,778	9,612
Leelanau	15,668	18,755	3,087	19.7	599	2,488
Lenawee	88,737	97,998	9,261	10.4	4,502	4,759
Livingston	107,353	141,914	34,561	32.2	9,456	25,105
Luce	5,768	6,584	816	14.1	12	804
Mackinac	10,435	11,113	678	6.5	115	563
Macomb	708,068	783,451	75,383	10.6	38,684	36,699
Manistee	21,564	23,179	1,615	7.5	-373	1,988
Marquette	70,952	61,792	-9,160	-12.9	3,393	5,767
Mason	25,143	27,854	2,711	10.8	395	2,316
Mecosta	36,737	39,178	2,441	6.6	1,502	939
Menominee	25,902	24,443	-1,459	-5.6	69	1,390
Midland	73,054	81,248	8,194	11.2	6,016	2,178
Missaukee	11,453	13,682	2,229	19.5	515	1,714
Monroe	131,852	142,301	10,449	7.9	7,474	2,975
Montcalm	50,815	59,647	8,832	17.4	3,396	5,436
Montmorency	8,212	9,980	1,768	21.5	-447	2,215
Muskegon	156,345	165,882	9,537	6.1	10,362	-825
Newaygo	36,904	45,059	8,155	22.1	2,693	5,462
Oakland	1,052,222	1,166,512	114,290	10.9	80,816	33,474
Oceana	21,786	24,599	2,813	12.9	1,231	1,582
Ogemaw	17,502	20,955	3,453	19.7	73	3,380
Ontonagon	9,060	8,117	-943	-10.4	-303	1,246
Osceola	19,728	22,028	2,300	11.7	926	1,374
Oscoda	7,367	8,844	1,477	20.0	-35	1,512
Otsego	16,626	21,800	5,174	31.1	982	4,192
Ottawa	174,492	220,403	45,911	26.3	19,954	25,957
Presque Isle	13,754	14,392	638	4.6	-296	934
Roscommon	18,473	23,174	4,701	25.4	-718	5,419
Saginaw	214,098	211,278	-2,820	-1.3	14,320	-11,500
St Clair	141,245	157,704	16,459	11.7	7,745	8,714
St Joseph	58,697	61,234	2,537	4.3	3,095	-558
Sanilac	40,025	42,736	2,711	6.8	966	1,745
Schoolcraft	8,176	8,748	572	7.0	-52	624
Shiawassee	69,927	72,236	2,309	3.3	4,195	-1,886
Tuscola	55,360	58,087	2,727	4.9	2,679	48
Van Buren	67,637	75,686	8,049	11.9	4,491	3,558
Washtenaw	269,717	299,503	29,786	11.0	24,524	5,262
Wayne	2,161,103	2,127,087	-34,016	-1.6	146,733	-112,717
Wexford	25,852	29,147	3,295	12.7	1,444	1,851

Source: Michigan Resident Birth and Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.18
Population by Age, Race and Sex
Michigan Residents, 1997

Age in Years	All Races			White			Black			All Other Races		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	129,533	66,206	63,327	96,823	49,605	47,218	30,404	15,373	15,031	2,306	1,228	1,078
1-4	523,213	267,470	255,743	406,398	208,614	197,783	107,077	53,797	53,282	9,736	5,061	4,678
5-9	711,781	364,500	347,281	550,993	282,955	268,036	140,307	71,179	69,128	20,481	10,366	10,115
10-14	703,924	360,342	343,582	570,541	293,083	277,459	114,778	57,775	57,002	18,606	9,485	9,120
15-19	717,912	367,441	350,471	580,308	297,359	282,950	119,184	60,802	58,382	18,419	9,281	9,139
20-24	640,665	321,572	319,093	495,430	249,485	245,945	126,929	62,817	64,113	18,303	9,270	9,033
25-29	685,348	338,449	346,899	554,320	276,714	277,605	112,221	52,147	60,075	18,805	9,587	9,219
30-34	749,139	367,621	381,518	626,656	312,392	314,264	102,503	45,336	57,166	19,980	9,892	10,088
35-39	834,969	413,155	421,814	703,388	353,350	350,037	112,870	50,172	62,699	18,712	9,632	9,079
40-44	805,819	398,452	407,367	680,309	342,968	337,342	109,883	47,898	61,984	15,625	7,586	8,039
45-49	695,221	342,457	352,764	590,504	296,198	294,305	90,663	39,921	50,740	14,055	6,338	7,717
50-54	565,474	276,072	289,402	488,180	240,973	247,207	66,583	30,023	36,560	10,711	5,076	5,636
55-59	434,819	209,189	225,630	379,546	184,314	195,231	47,639	20,929	26,709	7,637	3,945	3,688
60-64	362,065	173,512	188,553	315,465	153,050	162,413	41,580	18,014	23,569	5,021	2,448	2,572
65-69	350,596	160,403	190,193	307,111	142,552	164,558	39,719	16,284	23,434	3,764	1,566	2,200
70-74	313,632	137,328	176,304	275,107	121,138	153,969	35,811	14,998	20,814	2,714	1,192	1,520
75-79	251,106	101,923	149,183	224,254	91,366	132,887	25,168	9,900	15,270	1,684	656	1,026
80-84	166,209	60,965	105,244	148,225	54,660	93,564	17,040	5,951	11,088	944	355	591
85+	132,467	37,743	94,724	117,796	33,457	84,339	14,161	4,083	10,078	510	203	306
All Ages	9,773,892	4,764,800	5,009,092	8,111,355	3,984,236	4,127,120	1,454,521	677,396	777,126	208,015	103,168	104,847

Source: Michigan Resident Birth and Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.19
Abridged Life Table
Michigan Residents, 1997

Age	nx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.00838	100,000	838	99,254	7,618,890	76.2
1-5	0.00130	99,162	128	396,375	7,519,636	75.8
5-10	0.00111	99,034	110	494,869	7,123,261	71.9
10-15	0.00120	98,924	118	494,381	6,628,392	67.0
15-20	0.00373	98,806	368	493,182	6,134,011	62.1
20-25	0.00462	98,438	455	491,079	5,640,829	57.3
25-30	0.00495	97,984	485	488,729	5,149,750	52.6
30-35	0.00580	97,499	565	486,141	4,661,021	47.8
35-40	0.00795	96,934	770	482,853	4,174,880	43.1
40-45	0.01119	96,164	1,076	478,319	3,692,027	38.4
45-50	0.01751	95,089	1,665	471,553	3,213,708	33.8
50-55	0.02542	93,424	2,374	461,616	2,742,155	29.4
55-60	0.04099	91,050	3,732	446,603	2,280,538	25.0
60-65	0.06464	87,319	5,643	423,375	1,833,936	21.0
65-70	0.09807	81,675	8,010	389,469	1,410,560	17.3
70-75	0.14947	73,665	11,011	341,892	1,021,091	13.9
75-80	0.21150	62,655	13,251	281,085	679,200	10.8
80-85	0.31409	49,404	15,517	208,349	398,115	8.1
85+	1.00000	33,887	33,887	189,766	189,766	5.6

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.20
Abridged Life Table for Males
Michigan Residents, 1997

Age	qx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.00891	100,000	891	99,214	7,324,323	73.2
1-5	0.00183	99,109	181	395,985	7,225,109	72.9
5-10	0.00094	98,928	92	494,387	6,829,124	69.0
10-15	0.00135	98,836	133	493,934	6,334,738	64.1
15-20	0.00519	98,703	512	492,354	5,840,803	59.2
20-25	0.00721	98,191	708	489,215	5,348,449	54.5
25-30	0.00671	97,483	653	485,814	4,859,234	49.8
30-35	0.00878	96,830	850	482,099	4,373,421	45.2
35-40	0.01044	95,980	1,001	477,532	3,891,322	40.5
40-45	0.01570	94,979	1,491	471,391	3,413,790	35.9
45-50	0.02214	93,488	2,070	462,546	2,942,398	31.5
50-55	0.03094	91,419	2,828	450,505	2,479,852	27.1
55-60	0.04948	88,590	4,383	432,852	2,029,347	22.9
60-65	0.08247	84,207	6,944	404,817	1,596,495	19.0
65-70	0.12767	77,263	9,863	362,821	1,191,678	15.4
70-75	0.18595	67,400	12,532	306,630	828,857	12.3
75-80	0.26408	54,867	14,489	238,691	522,227	9.5
80-85	0.37904	40,378	15,305	163,184	283,536	7.0
85+	1.00000	25,073	25,073	120,352	120,352	4.8

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.21
Abridged Life Table for Females
Michigan Residents, 1997

Age	qx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.00760	100,000	760	99,328	7,872,904	78.7
1-5	0.00172	99,240	171	396,525	7,773,576	78.3
5-10	0.00077	99,070	76	495,141	7,377,051	74.5
10-15	0.00085	98,994	84	494,792	6,881,910	69.5
15-20	0.00219	98,911	216	494,042	6,387,118	64.6
20-25	0.00220	98,695	216	492,952	5,893,076	59.7
25-30	0.00306	98,479	301	491,682	5,400,124	54.8
30-35	0.00414	98,178	406	489,939	4,908,443	50.0
35-40	0.00618	97,772	603	487,439	4,418,503	45.2
40-45	0.00842	97,169	817	483,932	3,931,064	40.5
45-50	0.01273	96,352	1,226	478,896	3,447,132	35.8
50-55	0.01879	95,126	1,787	471,482	2,968,236	31.2
55-60	0.02967	93,338	2,769	460,388	2,496,755	26.8
60-65	0.05256	90,569	4,760	441,832	2,036,367	22.5
65-70	0.08178	85,810	7,017	412,512	1,594,535	18.6
70-75	0.12175	78,792	9,593	371,090	1,182,023	15.0
75-80	0.17835	69,200	12,341	316,367	810,933	11.7
80-85	0.27179	56,858	15,453	246,136	494,567	8.7
85+	1.00000	41,405	41,405	248,431	248,431	6.0

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.22
Abridged Life Table for Whites
Michigan Residents, 1997

Age	nqx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.00661	100,000	661	99,408	7,713,312	77.1
1-5	0.00104	99,339	103	397,143	7,613,904	76.6
5-10	0.00096	99,236	95	495,922	7,216,762	72.7
10-15	0.00107	99,142	106	495,491	6,720,840	67.8
15-20	0.00321	99,036	318	494,437	6,225,349	62.9
20-25	0.00360	98,718	355	492,717	5,730,912	58.1
25-30	0.00393	98,363	386	490,873	5,238,195	53.3
30-35	0.00478	97,977	468	488,768	4,747,322	48.5
35-40	0.00657	97,509	640	486,029	4,258,554	43.7
40-45	0.00899	96,869	871	482,320	3,772,525	38.9
45-50	0.01423	95,998	1,366	476,835	3,290,205	34.3
50-55	0.02222	94,633	2,102	468,339	2,813,370	29.7
55-60	0.03707	92,531	3,429	454,758	2,345,031	25.3
60-65	0.06006	89,102	5,351	433,064	1,890,273	21.2
65-70	0.09447	83,750	7,912	400,145	1,457,209	17.4
70-75	0.14477	75,839	10,979	352,920	1,057,063	13.9
75-80	0.20886	64,860	13,546	291,528	704,143	10.9
80-85	0.31637	51,314	16,234	216,167	412,615	8.0
85+	1.00000	35,080	35,080	196,448	196,448	5.6

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.23
Abridged Life Table for White Males
Michigan Residents, 1997

Age	nqx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.00702	100,000	702	99,381	7,443,528	74.4
1-05	0.00171	99,298	169	396,761	7,344,147	74.0
5-10	0.00076	99,129	75	495,438	6,947,386	70.1
10-15	0.00115	99,054	113	495,059	6,451,947	65.1
15-20	0.00428	98,941	423	493,729	5,956,889	60.2
20-25	0.00528	98,517	520	491,296	5,463,160	55.5
25-30	0.00480	97,997	470	488,845	4,971,864	50.7
30-35	0.00702	97,527	685	486,001	4,483,019	46.0
35-40	0.00866	96,843	838	482,223	3,997,017	41.3
40-45	0.01236	96,005	1,186	477,235	3,514,795	36.6
45-50	0.01775	94,819	1,683	470,168	3,037,560	32.0
50-55	0.02720	93,136	2,533	459,844	2,567,392	27.6
55-60	0.04478	90,604	4,057	443,714	2,107,548	23.3
60-65	0.07579	86,547	6,559	417,502	1,663,833	19.2
65-70	0.12067	79,988	9,652	377,115	1,246,331	15.6
70-75	0.18223	70,336	12,817	320,753	869,216	12.4
75-80	0.26072	57,519	14,996	250,823	548,463	9.5
80-85	0.38233	42,523	16,258	171,567	297,640	7.0
85+	1.00000	26,265	26,265	126,074	126,074	4.8

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.24
Abridged Life Table for White Females
Michigan Residents, 1997

Age	qx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.00589	100,000	589	99,482	7,947,167	79.5
1-5	0.00142	99,411	141	397,297	7,847,685	78.9
5-10	0.00075	99,271	74	496,149	7,450,388	75.1
10-15	0.00074	99,197	73	495,826	6,954,238	70.1
15-20	0.00204	99,123	201	495,134	6,458,412	65.2
20-25	0.00175	98,922	173	494,189	5,963,278	60.3
25-30	0.00258	98,749	254	493,148	5,469,089	55.4
30-35	0.00356	98,495	350	491,647	4,975,941	50.5
35-40	0.00492	98,145	483	489,584	4,484,294	45.7
40-45	0.00686	97,662	670	486,749	3,994,710	40.9
45-50	0.01054	96,993	1,022	482,596	3,507,961	36.2
50-55	0.01633	95,971	1,566	476,258	3,025,366	31.5
55-60	0.02707	94,405	2,556	466,249	2,549,107	27.0
60-65	0.04917	91,849	4,516	448,840	2,082,858	22.7
65-70	0.07785	87,333	6,799	420,719	1,634,019	18.7
70-75	0.11863	80,535	9,554	379,970	1,213,300	15.1
75-80	0.17561	70,981	12,465	325,086	833,330	11.7
80-85	0.27341	58,516	15,998	253,137	508,244	8.7
85+	1.00000	42,518	42,518	255,107	255,107	6.0

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.25
Abridged Life Table for Blacks
Michigan Residents, 1997

Age	qx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.01000	100,000	1,398	98,765	7,092,540	70.9
1-5	0.00000	98,602	224	393,906	6,993,774	70.9
5-10	0.00000	98,377	172	491,415	6,599,868	67.1
10-15	0.00000	98,206	175	490,686	6,108,453	62.2
15-20	0.01000	98,031	627	488,723	5,617,767	57.3
20-25	0.01000	97,403	845	484,984	5,129,044	52.7
25-30	0.01000	96,558	1,010	480,333	4,644,060	48.1
30-35	0.01000	95,548	1,163	474,956	4,163,727	43.6
35-40	0.02000	94,385	1,601	468,159	3,688,771	39.1
40-45	0.02000	92,784	2,304	458,572	3,220,612	34.7
45-50	0.04000	90,480	3,589	443,828	2,762,040	30.5
50-55	0.05000	86,891	4,232	424,332	2,318,212	26.7
55-60	0.07000	82,658	5,796	399,517	1,893,880	22.9
60-65	0.10000	76,862	7,663	365,747	1,494,363	19.4
65-70	0.12000	69,200	8,637	325,131	1,128,616	16.3
70-75	0.18000	60,562	11,152	275,556	803,485	13.3
75-80	0.24000	49,411	11,633	217,967	527,928	10.7
80-85	0.29000	37,778	11,134	160,757	309,961	8.2
85+	1.00000	26,644	26,644	149,204	149,204	5.6

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.26
Abridged Life Table for Black Males
Michigan Residents, 1997

Age	qx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.01477	100,000	1,477	98,696	6,616,781	66.2
1-5	0.00209	98,523	205	393,643	6,518,085	66.2
5-10	0.00169	98,318	166	491,134	6,124,442	62.3
10-15	0.00225	98,152	221	490,377	5,633,308	57.4
15-20	0.00991	97,932	970	487,494	5,142,930	52.5
20-25	0.01526	96,961	1,479	481,250	4,655,436	48.0
25-30	0.01731	95,482	1,653	473,380	4,174,186	43.7
30-35	0.02097	93,829	1,967	464,338	3,700,806	39.4
35-40	0.02366	91,862	2,173	454,215	3,236,468	35.2
40-45	0.03996	89,689	3,584	440,025	2,782,253	31.0
45-50	0.05535	86,105	4,766	418,911	2,342,228	27.2
50-55	0.06175	81,339	5,022	394,610	1,923,317	23.6
55-60	0.09190	76,317	7,013	365,001	1,528,707	20.0
60-65	0.13814	69,304	9,573	323,453	1,163,706	16.8
65-70	0.18696	59,731	11,167	270,927	840,254	14.1
70-75	0.21599	48,564	10,489	216,615	569,327	11.7
75-80	0.29574	38,075	11,260	161,975	352,712	9.3
80-85	0.34659	26,815	9,294	110,139	190,737	7.1
85+	1.00000	17,521	17,521	80,598	80,598	4.6

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.27
Abridged Life Table for Black Females
Michigan Residents, 1997

Age	qx(1)	lx(2)	ndx(3)	nLx(4)	Tx(5)	ex(6)
0-1	0.01291	100,000	1,291	98,850	7,483,088	74.8
1-5	0.00293	98,709	289	394,055	7,384,238	74.8
5-10	0.00087	98,420	85	491,867	6,990,182	71.0
10-15	0.00123	98,335	121	491,414	6,498,316	66.1
15-20	0.00291	98,214	286	490,411	6,006,901	61.2
20-25	0.00390	97,928	381	488,734	5,516,490	56.3
25-30	0.00515	97,547	502	486,559	5,027,756	51.5
30-35	0.00785	97,045	761	483,478	4,541,197	46.8
35-40	0.01309	96,283	1,260	478,446	4,057,718	42.1
40-45	0.01698	95,024	1,613	471,316	3,579,273	37.7
45-50	0.02523	93,411	2,357	461,510	3,107,956	33.3
50-55	0.03591	91,055	3,269	447,502	2,646,446	29.1
55-60	0.04886	87,785	4,288	428,838	2,198,944	25.0
60-65	0.07552	83,497	6,305	402,587	1,770,106	21.2
65-70	0.10938	77,192	8,443	365,592	1,367,519	17.7
70-75	0.14352	68,748	9,866	319,751	1,001,927	14.6
75-80	0.19835	58,882	11,679	265,677	682,176	11.6
80-85	0.25608	47,204	12,087	205,802	416,499	8.8
85+	1.00000	35,116	35,116	210,697	210,697	6.0

Note: Definitions of life table values are contained in the Technical Notes.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.28
Age-Adjusted Death Rates by Race and Sex
Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	586.2	771.9	437.1	555.9	734.2	413.8	824.0	1,084.9	610.8
	1981	584.6	767.5	438.3	553.7	729.7	414.0	831.7	1,086.5	624.6
	1982	574.3	755.5	430.1	543.4	717.3	406.3	814.4	1,066.2	610.2
	1983	573.9	749.9	433.7	541.9	709.8	409.5	818.3	1,071.0	614.8
	1984	563.0	733.2	428.4	531.0	691.6	405.1	808.5	1,071.8	598.5
	1985	570.5	751.0	427.0	536.8	706.4	403.4	829.7	1,113.4	602.5
	1986	569.6	742.9	431.9	534.2	696.3	406.8	835.1	1,114.3	613.5
	1987	560.6	725.1	430.1	523.6	674.5	405.2	835.6	1,124.0	608.1
	1988	551.2	713.4	421.9	515.2	668.1	394.4	818.1	1,073.7	615.5
	1989	538.5	692.8	415.0	496.1	637.6	384.1	832.4	1,102.1	619.2
	1990	525.6	677.9	403.7	486.0	625.2	375.6	792.9	1,062.3	581.5
	1991	524.6	672.9	405.6	484.7	619.3	378.2	793.7	1,056.8	585.2
	1992	508.1	651.7	392.1	468.5	600.5	362.5	766.8	1,013.5	575.2
	1993	517.1	659.1	401.8	475.2	603.1	372.2	792.6	1,057.6	585.6
	1994	510.2	647.9	397.1	468.9	591.2	368.9	781.5	1,057.6	567.5
	1995	504.1	635.6	396.2	464.4	581.5	368.7	766.6	1,032.9	561.1
	1996	492.2	617.2	389.5	457.7	569.9	365.6	716.0	960.5	529.6
1997	481.8	600.0	384.7	449.0	557.5	359.4	695.6	908.4	534.9	
United States	1980	585.8	777.2	432.6	559.4	745.3	411.1	842.5	1,112.8	631.1
	1981	568.2	753.3	420.4	544.6	724.4	401.4	803.9	1,067.7	599.1
	1982	553.8	733.1	411.2	531.8	706.0	393.3	778.7	1,035.0	581.4
	1983	550.5	725.3	411.5	528.0	698.4	392.7	777.9	1,019.6	590.4
	1984	545.9	716.7	409.6	523.6	689.9	391.3	771.9	1,011.7	585.3
	1985	546.1	716.8	409.4	523.1	688.7	390.6	779.9	1,024.0	589.1
	1986	541.7	709.1	406.6	518.0	679.8	387.7	781.0	1,026.9	588.2
	1987	535.5	698.6	403.3	511.1	668.2	384.1	778.6	1,023.2	586.2
	1988	535.5	696.7	404.4	509.8	664.3	384.4	788.8	1,037.8	593.1
	1989	523.0	678.7	395.3	496.1	644.2	374.9	783.1	1,032.1	585.6
	1990	520.2	680.2	390.6	492.8	644.3	369.9	789.2	1,061.3	581.6
	1991	513.7	669.9	386.5	486.8	634.4	366.3	780.7	1,048.8	575.1
	1992	504.5	656.0	380.3	477.5	620.9	359.9	767.5	1,026.9	568.4
	1993	513.3	664.9	388.3	485.1	627.5	367.7	785.2	1,052.2	578.8
	1994	507.4	654.6	385.2	479.8	617.9	364.9	772.1	1,029.9	572.0
	1995	503.9	646.3	385.2	476.9	610.5	364.9	765.7	1,016.7	571.0
	1996	491.6	623.7	381.0	466.8	591.4	361.9	738.3	967.0	561.0
1997Pr	478.1	601.6	375.1	456.6	573.8	358.2	696.3	900.3	538.5	

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.29
Age-Adjusted Diseases of the Heart Death Rates by Race and Sex
Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	214.0	294.5	149.8	209.3	291.5	143.8	256.1	324.6	201.4
	1981	213.3	297.1	146.3	207.9	294.1	139.2	261.5	328.5	207.0
	1982	208.6	288.1	145.7	203.1	284.8	138.5	256.3	320.4	205.5
	1983	207.2	281.2	148.3	201.5	277.5	140.9	258.0	316.5	211.6
	1984	199.9	270.3	144.3	193.2	264.2	137.4	257.8	327.7	202.0
	1985	200.1	273.9	141.6	193.8	267.6	135.4	255.6	334.4	193.8
	1986	198.2	266.2	144.5	191.0	259.1	137.2	261.4	332.6	206.0
	1987	191.0	257.6	138.6	183.7	249.7	131.7	253.9	331.7	193.4
	1988	184.6	247.4	135.1	176.4	240.2	125.9	254.9	315.7	207.9
	1989	170.7	230.0	123.6	161.5	220.4	114.5	243.4	310.4	192.0
	1990	162.8	217.9	119.1	154.0	208.3	110.9	231.6	299.6	179.8
	1991	158.9	211.8	116.7	150.7	202.9	108.8	224.0	287.5	175.7
	1992	151.5	201.9	111.5	143.6	193.2	103.9	210.7	270.6	165.9
	1993	157.3	208.5	116.3	148.0	198.8	107.0	227.9	291.0	180.4
	1994	152.9	202.4	112.7	143.6	191.5	104.1	222.9	292.2	171.8
	1995	147.6	195.0	108.9	138.2	184.1	100.5	218.6	286.6	167.8
	1996	143.9	189.7	106.5	135.7	180.2	99.0	204.7	269.7	156.6
1997	137.7	178.8	103.8	130.3	170.3	97.0	193.2	250.2	151.7	
United States	1980	202.0	280.4	140.3	197.6	277.5	134.6	255.7	327.3	201.1
	1981	195.0	271.2	135.1	191.1	268.8	129.8	245.4	316.7	191.2
	1982	190.5	264.4	132.5	186.8	262.1	127.4	239.0	309.4	186.3
	1983	188.8	260.4	132.3	184.6	257.8	126.7	242.0	308.2	191.5
	1984	183.6	252.2	129.3	179.5	249.5	124.0	235.8	300.1	186.6
	1985	180.5	247.7	127.3	176.1	244.5	121.7	236.2	301.0	186.8
	1986	175.0	238.2	124.6	170.4	234.8	119.0	232.6	294.3	185.1
	1987	169.6	229.6	121.7	165.0	225.9	116.3	226.9	287.1	180.8
	1988	166.3	224.5	119.8	161.5	220.5	114.2	226.6	286.2	181.1
	1989	155.9	210.2	112.3	151.0	205.9	106.6	216.4	272.6	172.9
	1990	152.0	206.7	108.9	146.9	202.0	103.1	213.5	275.9	168.1
	1991	148.2	201.0	106.3	143.1	196.1	100.7	210.9	272.7	165.5
	1992	144.3	195.1	103.8	139.2	190.3	98.1	205.4	264.1	162.4
	1993	145.3	195.5	105.0	139.9	190.3	99.2	208.9	267.9	165.3
	1994	140.4	188.5	101.6	135.4	183.8	96.1	198.8	254.0	158.0
	1995	138.3	184.9	100.4	133.1	179.7	94.9	198.8	255.9	156.3
	1996	134.5	178.8	98.2	129.8	174.5	92.9	191.5	242.6	153.4
1997Pr	129.9	-	-	-	-	-	-	-	-	-

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.30
Age-Adjusted Cancer Death Rates by Race and Sex
 Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	134.1	167.4	109.5	130.5	161.5	107.9	169.0	224.3	125.2
	1981	135.5	164.1	114.9	130.9	156.7	112.7	181.1	235.8	138.6
	1982	137.8	169.5	114.9	134.0	163.4	113.3	175.6	230.1	133.8
	1983	137.5	170.3	114.0	133.2	163.4	112.1	176.9	233.3	133.7
	1984	136.9	168.5	114.4	132.4	160.7	112.5	179.0	241.6	132.1
	1985	137.4	168.4	115.6	133.4	162.0	113.5	176.9	231.9	136.3
	1986	136.6	169.6	113.0	131.7	162.5	110.1	180.2	237.9	137.4
	1987	137.2	167.3	116.2	133.5	161.5	114.0	174.7	226.9	137.3
	1988	136.8	166.9	115.2	132.0	160.5	111.8	179.3	227.6	143.8
	1989	137.3	166.3	116.7	132.5	158.9	114.2	175.8	229.5	136.2
	1990	136.3	167.5	114.2	131.2	160.0	110.9	176.9	231.0	138.2
	1991	139.2	168.0	119.1	134.5	161.0	116.2	177.3	228.1	141.3
	1992	136.0	167.0	113.7	130.5	158.9	110.1	179.5	236.3	139.3
	1993	133.3	160.5	114.0	128.2	152.3	111.4	172.8	228.2	133.7
	1994	132.7	160.4	112.5	127.5	151.9	110.0	173.0	231.4	131.1
	1995	130.2	155.7	111.9	125.9	148.9	109.4	163.8	215.9	127.4
	1996	129.0	154.3	110.4	124.4	147.5	107.5	165.2	213.8	131.2
1997	126.4	150.2	109.2	122.5	144.8	106.4	156.3	198.2	128.1	
United States	1980	132.8	165.5	109.2	129.6	160.5	107.7	172.1	229.9	129.7
	1981	131.6	163.7	108.6	128.5	158.3	107.2	171.3	232.0	127.1
	1982	132.5	164.8	109.5	129.4	159.4	108.2	173.2	235.2	128.7
	1983	132.6	164.3	109.9	129.4	158.9	108.5	172.9	232.2	129.8
	1984	133.5	164.6	111.1	130.2	159.0	109.9	174.8	234.9	131.0
	1985	133.6	164.5	111.4	130.7	159.2	110.3	173.0	231.6	130.4
	1986	133.2	163.6	111.4	130.4	158.8	110.1	172.8	229.0	132.1
	1987	132.9	163.2	111.0	130.1	158.4	109.7	172.2	227.9	132.0
	1988	132.7	162.4	111.2	130.0	157.6	110.1	171.3	227.0	131.2
	1989	133.0	162.4	111.7	130.2	157.2	110.7	172.7	230.6	130.9
	1990	135.0	166.3	112.7	131.5	160.3	111.2	182.0	248.1	137.2
	1991	134.5	165.0	112.6	131.3	159.5	111.2	179.3	242.4	136.3
	1992	133.1	162.6	111.8	129.9	157.3	110.3	177.5	238.1	136.6
	1993	132.6	161.9	111.4	129.4	156.4	110.1	177.2	238.9	135.3
	1994	131.5	159.6	111.1	128.6	154.4	109.9	173.8	232.6	133.7
	1995	129.9	156.8	110.4	127.0	151.8	108.9	171.6	226.8	134.1
	1996	127.9	153.8	108.8	125.2	149.2	107.6	167.8	221.9	130.7
1997Pr	125.0	-	-	-	-	-	-	-	-	

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.31
Age-Adjusted Stroke Death Rates by Race and Sex
 Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	40.4	44.7	37.2	37.9	42.2	34.8	60.6	65.4	56.6
	1981	39.8	42.9	37.5	37.3	40.4	35.0	61.3	64.9	58.2
	1982	36.9	41.5	33.4	34.8	39.2	31.4	54.8	61.4	49.6
	1983	36.0	39.0	33.6	33.4	36.5	31.1	56.3	59.7	53.2
	1984	34.4	37.7	31.9	32.8	36.0	30.4	46.3	52.3	41.8
	1985	33.3	36.8	30.6	31.1	34.7	28.4	50.7	54.2	47.2
	1986	32.0	34.8	29.6	29.9	32.8	27.6	48.3	52.3	44.9
	1987	31.9	34.5	29.9	29.4	31.4	27.8	52.4	60.3	46.2
	1988	29.5	32.7	26.8	27.7	30.6	25.3	43.8	51.0	38.1
	1989	28.9	30.6	27.4	26.6	28.6	25.0	46.1	46.7	45.0
	1990	27.6	29.7	25.9	26.1	28.0	24.5	38.7	42.6	35.4
	1991	27.4	29.2	25.9	25.4	26.9	24.3	41.7	47.3	36.8
	1992	26.2	28.0	24.7	24.6	26.2	23.4	36.6	41.7	32.6
	1993	26.5	29.8	23.8	24.5	27.3	22.2	41.4	50.7	34.2
	1994	27.9	29.5	26.3	25.4	26.9	24.1	45.2	50.1	41.4
	1995	27.9	29.6	26.7	25.7	27.1	24.8	44.2	49.9	40.0
	1996	26.7	29.4	24.6	24.6	26.6	23.1	40.3	51.1	32.5
1997	26.0	28.2	24.1	24.3	26.3	22.5	38.0	43.8	33.8	
United States	1980	40.8	44.9	37.6	38.0	41.9	35.2	68.5	77.5	61.7
	1981	38.1	41.7	35.4	35.6	38.9	33.1	64.4	72.7	58.1
	1982	35.8	39.2	33.2	33.4	36.6	31.0	60.8	68.9	54.7
	1983	34.4	37.7	31.8	32.0	35.2	29.6	58.3	64.2	53.8
	1984	33.4	36.4	31.1	31.1	33.9	28.9	56.7	62.8	51.8
	1985	32.3	35.2	30.0	30.1	32.8	27.9	55.0	60.8	50.3
	1986	31.0	33.5	29.0	28.8	31.1	27.1	52.6	58.9	47.6
	1987	30.3	32.7	28.3	28.1	30.3	26.3	51.2	57.1	46.7
	1988	29.7	32.4	27.6	27.5	30.0	25.5	51.5	57.8	46.6
	1989	28.0	30.4	26.2	25.9	28.0	24.1	49.0	54.1	44.9
	1990	27.7	30.2	25.7	25.5	27.7	23.8	48.4	56.1	42.7
	1991	26.8	29.4	24.7	24.7	26.9	22.8	46.8	54.9	41.0
	1992	26.2	28.6	24.2	24.2	26.3	22.5	45.0	52.0	39.9
	1993	26.5	29.0	24.5	24.5	26.8	22.7	45.0	51.9	39.9
	1994	26.5	29.0	24.5	24.5	26.6	22.8	45.4	52.4	40.1
	1995	26.7	28.9	24.8	24.7	26.5	23.1	45.0	52.2	39.6
	1996	26.4	28.5	24.6	24.5	26.3	22.9	44.2	50.9	39.2
1997Pr	25.9	-	-	-	-	-	-	-	-	

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.32
Age-Adjusted Chronic Obstructive Pulmonary Disease Death Rates by Race and Sex
 Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	15.7	25.4	8.9	15.8	25.6	9.1	13.7	23.1	6.3
	1981	16.3	26.5	9.3	16.5	26.9	9.4	14.3	23.1	7.8
	1982	16.2	25.4	9.8	16.2	25.5	9.9	15.1	24.1	8.4
	1983	17.8	26.8	11.8	17.8	26.8	12.1	16.9	26.8	9.7
	1984	17.5	27.2	10.8	17.7	27.6	11.0	14.8	24.0	8.1
	1985	19.3	29.3	12.5	19.3	29.4	12.6	18.7	28.9	11.5
	1986	19.5	29.2	13.1	19.8	29.4	13.4	16.7	26.6	9.6
	1987	19.0	27.1	13.8	19.2	27.2	14.1	16.8	25.8	10.9
	1988	19.3	27.9	13.5	19.7	28.3	14.0	16.0	25.3	9.4
	1989	18.7	25.6	14.2	18.8	25.8	14.3	16.7	24.3	11.7
	1990	19.3	26.2	14.7	19.6	26.5	15.1	16.1	24.0	10.6
	1991	19.4	25.8	15.3	19.7	26.0	15.7	16.8	24.3	11.5
	1992	18.8	25.4	14.4	18.9	25.6	14.5	16.8	23.6	12.3
	1993	20.5	26.8	16.3	20.5	26.4	16.6	19.1	27.8	13.1
	1994	19.9	25.0	16.7	20.1	25.0	17.0	17.9	24.9	13.3
	1995	20.5	25.7	17.2	20.7	25.9	17.5	17.5	22.9	13.9
	1996	20.6	25.3	17.6	20.9	25.4	18.0	17.2	23.5	12.9
	1997	19.9	25.2	16.3	20.7	26.1	17.1	12.7	17.6	9.6
United States	1980	15.9	26.1	8.9	16.3	26.7	9.2	12.5	20.9	6.3
	1981	16.3	26.2	9.5	16.7	26.8	9.8	12.6	21.4	6.3
	1982	16.2	25.5	9.8	16.6	26.2	10.0	12.8	20.6	7.3
	1983	17.4	27.0	10.9	17.9	27.6	11.3	13.7	22.2	7.6
	1984	17.7	27.0	11.4	18.2	27.6	11.8	14.2	22.8	8.1
	1985	18.7	27.9	12.5	19.2	28.5	12.9	15.0	23.9	8.7
	1986	18.8	27.6	12.8	19.2	28.1	13.3	15.4	24.6	8.9
	1987	18.7	26.9	13.2	19.2	27.4	13.7	15.5	24.0	9.5
	1988	19.4	27.5	14.0	19.8	27.8	14.5	16.6	26.0	10.0
	1989	19.4	26.4	14.7	19.8	26.8	15.2	16.6	24.9	10.9
	1990	19.7	27.2	14.7	20.1	27.4	15.2	16.9	26.5	10.7
	1991	20.1	27.0	15.5	20.6	27.4	16.1	17.1	25.9	11.3
	1992	19.9	26.4	15.5	20.4	26.8	16.1	16.6	24.8	11.2
	1993	21.4	27.8	17.1	21.9	28.2	17.8	17.8	26.6	12.2
	1994	21.0	26.9	17.1	21.6	27.3	17.8	17.7	25.7	12.4
	1995	20.8	26.3	17.1	21.3	26.6	17.8	17.6	25.4	12.5
	1996	21.0	25.9	17.6	21.5	26.3	18.3	17.8	24.8	13.1
	1997Pr	21.4	-	-	-	-	-	-	-	-

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.33
Age-Adjusted Unintentional Injury Death Rates by Race and Sex
Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	36.4	53.4	20.6	36.4	52.4	21.3	38.1	64.5	15.6
	1981	33.9	51.0	17.8	34.0	51.0	17.9	34.8	55.1	17.4
	1982	31.3	46.1	17.4	30.9	45.4	17.1	34.0	52.3	18.3
	1983	29.2	44.2	15.2	29.2	44.1	14.9	30.8	46.3	17.8
	1984	30.2	44.7	16.5	30.0	44.0	16.6	33.1	52.7	16.5
	1985	32.1	47.3	17.8	31.7	46.3	17.9	35.9	58.3	17.1
	1986	31.4	45.9	17.9	31.5	45.5	18.3	32.7	53.0	15.8
	1987	31.0	44.8	18.0	30.9	44.6	17.8	34.1	50.7	20.2
	1988	31.7	45.3	18.9	31.7	45.6	18.5	33.5	48.4	21.1
	1989	30.8	42.9	19.4	30.4	42.4	18.9	34.2	48.6	22.4
	1990	29.3	42.7	16.9	29.1	42.2	16.8	30.6	48.1	16.2
	1991	27.6	38.8	17.2	26.9	37.3	17.2	32.4	49.0	18.2
	1992	25.8	37.2	15.2	25.1	36.1	14.7	30.5	45.8	17.7
	1993	25.8	36.1	16.0	24.8	34.2	15.8	31.5	48.1	17.4
	1994	26.1	36.3	16.5	25.5	35.5	15.8	28.2	40.9	17.7
	1995	27.6	38.0	17.9	26.8	36.7	17.3	32.2	47.8	19.6
	1996	26.4	36.6	17.0	25.8	35.1	16.9	29.8	46.6	16.1
1997	26.7	36.7	17.2	25.2	34.6	16.0	36.2	51.9	23.1	
United States	1980	42.3	64.0	21.8	41.5	62.3	21.4	51.2	82.0	25.1
	1981	39.8	60.2	20.4	39.3	59.1	20.2	45.8	74.7	21.6
	1982	36.6	55.2	18.9	36.1	54.1	18.7	42.5	68.3	20.8
	1983	35.3	52.9	18.7	34.7	51.8	18.3	42.1	66.2	21.9
	1984	35.0	52.3	18.7	34.6	51.3	18.5	40.6	64.7	20.1
	1985	34.7	51.8	18.6	34.1	50.4	18.4	41.8	66.7	20.7
	1986	35.2	52.5	18.7	34.5	51.1	18.4	42.1	66.9	21.0
	1987	34.6	51.2	18.8	33.9	49.7	18.6	42.2	66.8	21.0
	1988	35.0	51.5	19.1	34.1	49.9	18.8	43.7	69.0	22.2
	1989	33.8	49.5	18.9	32.9	47.8	18.5	42.7	67.3	21.6
	1990	32.5	47.7	17.9	31.8	46.4	17.6	39.7	62.4	20.4
	1991	31.0	45.3	17.2	30.3	43.9	17.0	38.9	61.0	19.9
	1992	29.4	43.1	16.4	28.8	41.9	16.1	36.5	56.7	19.3
	1993	30.3	44.2	17.0	29.6	42.9	16.6	38.4	59.8	20.1
	1994	30.3	44.0	17.2	29.5	42.7	16.8	38.1	58.5	20.7
	1995	30.5	44.1	17.5	29.9	43.0	17.2	37.4	57.6	20.2
	1996	30.4	43.3	17.9	29.9	42.4	17.6	36.7	55.7	20.5
1997Pr	28.9	-	-	-	-	-	-	-	-	

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.34
Age-Adjusted Pneumonia and Influenza Death Rates by Race and Sex
 Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	11.7	16.0	8.5	10.7	14.5	8.1	19.5	29.5	11.6
	1981	10.8	15.0	7.9	9.7	13.4	7.4	19.0	27.8	12.1
	1982	10.7	14.9	7.8	9.9	14.0	7.3	15.9	22.6	10.8
	1983	12.7	17.5	9.3	11.8	16.1	8.9	19.9	29.5	12.5
	1984	12.0	16.7	8.8	11.2	15.8	8.3	18.0	24.8	12.9
	1985	12.4	17.0	9.4	11.9	16.4	8.9	16.4	21.8	12.4
	1986	13.9	18.5	10.8	13.2	17.8	10.2	18.9	24.4	14.9
	1987	13.0	17.0	10.5	12.3	15.9	10.0	18.7	24.9	14.1
	1988	14.0	18.9	10.9	13.4	18.1	10.5	17.8	24.5	12.9
	1989	13.6	18.2	10.5	12.7	16.7	10.2	19.7	29.3	12.4
	1990	14.1	19.2	10.7	13.2	18.2	10.0	19.6	27.4	14.3
	1991	13.9	18.6	10.6	13.0	17.5	10.0	19.4	26.0	14.4
	1992	13.0	17.4	10.2	12.1	16.0	9.6	19.1	27.8	12.7
	1993	13.9	18.6	10.6	12.8	17.1	9.9	20.8	30.0	14.1
	1994	13.3	17.7	10.3	12.2	16.3	9.5	20.7	29.6	14.7
	1995	13.6	17.4	11.0	12.6	15.7	10.6	20.2	30.7	12.9
	1996	13.5	17.2	11.0	12.4	15.6	10.3	20.8	29.6	14.8
1997	12.3	16.3	9.5	11.5	15.3	8.9	17.9	23.9	13.7	
United States	1980	12.9	17.4	9.8	12.2	16.2	9.4	19.2	28.0	12.7
	1981	12.3	16.6	9.2	11.6	15.6	9.0	17.7	26.4	11.3
	1982	10.9	15.2	8.0	10.3	14.3	7.6	15.6	23.2	10.1
	1983	11.8	16.2	8.8	11.3	15.3	8.6	16.2	24.3	10.2
	1984	12.2	16.7	9.1	11.6	15.8	8.8	17.2	25.2	11.3
	1985	13.4	18.2	10.1	12.8	17.4	9.8	18.5	26.8	12.4
	1986	13.5	18.4	10.3	12.9	17.5	9.9	19.0	27.2	13.1
	1987	13.1	17.7	10.0	12.5	16.8	9.7	18.2	26.4	12.2
	1988	14.2	18.9	11.0	13.6	18.0	10.7	19.6	28.0	13.4
	1989	13.7	17.9	10.7	13.0	16.9	10.3	19.8	27.9	13.8
	1990	14.0	18.5	11.0	13.4	17.5	10.6	19.8	28.7	13.7
	1991	13.4	17.5	10.6	12.8	16.6	10.2	18.7	26.2	13.5
	1992	12.7	16.7	9.9	12.1	15.8	9.7	17.4	25.0	12.2
	1993	13.5	17.5	10.7	12.9	16.6	10.4	18.6	25.9	13.5
	1994	13.0	16.7	10.4	12.5	15.9	10.1	17.5	24.2	12.8
	1995	12.9	16.5	10.4	12.4	15.7	10.1	17.8	24.5	13.2
	1996	12.8	16.2	10.4	12.2	15.2	10.1	17.8	24.8	12.9
1997Pr	13.2	-	-	-	-	-	-	-	-	

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. Vol. 47, No.4, October 7, 1998

Table 4.35
Age-Adjusted Diabetes Mellitus Death Rates by Race and Sex
 Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	11.2	11.0	11.3	10.5	10.5	10.4	17.1	14.9	18.7
	1981	11.2	11.9	10.7	10.4	11.3	9.8	17.2	16.7	17.5
	1982	10.0	10.3	9.7	9.4	9.9	8.8	15.3	13.7	16.7
	1983	11.1	10.9	11.3	10.4	10.3	10.5	16.8	16.0	17.1
	1984	10.7	11.2	10.4	9.8	10.7	9.2	18.3	15.4	20.4
	1985	9.9	10.6	9.4	9.1	9.9	8.3	17.4	16.6	18.0
	1986	10.8	11.3	10.4	10.0	10.6	9.5	17.5	17.3	17.7
	1987	10.3	10.8	9.8	9.4	9.9	8.8	17.7	18.3	17.0
	1988	10.6	11.3	10.0	9.6	10.5	8.8	18.7	18.2	19.1
	1989	14.2	14.9	13.6	12.5	13.1	11.9	27.3	29.3	25.6
	1990	13.4	14.5	12.6	11.9	12.9	11.1	25.5	27.0	24.3
	1991	13.8	15.4	12.4	12.2	13.9	10.8	26.2	28.3	24.4
	1992	13.9	14.5	13.2	12.2	13.0	11.5	26.3	26.3	26.0
	1993	13.4	14.4	12.7	12.2	13.3	11.4	21.9	22.4	21.5
	1994	13.7	14.7	12.8	12.4	13.4	11.6	23.0	25.6	20.8
	1995	14.0	15.7	12.5	12.5	14.3	10.9	24.8	27.4	22.6
	1996	14.0	14.7	13.5	12.9	14.0	12.1	21.9	20.2	23.2
	1997	14.5	16.1	13.2	13.0	14.5	11.9	25.0	28.0	22.6
United States	1980	10.1	10.2	10.0	9.1	9.5	8.7	20.3	17.7	22.1
	1981	9.8	10.0	9.6	8.8	9.3	8.4	19.5	16.8	21.3
	1982	9.6	9.8	9.3	8.7	9.2	8.3	18.3	16.1	19.8
	1983	9.9	9.9	9.8	8.9	9.2	8.6	19.7	17.7	21.1
	1984	9.5	9.8	9.2	8.5	9.0	8.0	19.3	17.6	20.5
	1985	9.6	9.9	9.4	8.6	9.2	8.1	19.7	17.7	21.1
	1986	9.6	9.9	9.3	8.5	9.1	8.1	20.0	17.9	21.4
	1987	9.8	10.3	9.3	8.7	9.5	8.1	20.2	18.3	21.3
	1988	10.1	10.5	9.8	9.0	9.6	8.4	21.2	19.8	22.1
	1989	11.5	12.0	11.0	10.3	11.0	9.6	23.7	22.6	24.2
	1990	11.7	12.3	11.1	10.4	11.3	9.5	24.8	23.6	25.4
	1991	11.8	12.6	11.1	10.5	11.5	9.6	25.4	24.6	25.7
	1992	11.9	12.7	11.1	10.5	11.6	9.6	25.3	24.2	25.8
	1993	12.4	13.4	11.7	11.0	12.2	10.0	26.8	26.3	26.9
	1994	12.9	13.9	12.1	11.5	12.7	10.4	27.4	27.1	27.4
	1995	13.3	14.4	12.4	11.7	13.1	10.6	28.5	28.4	28.3
	1996	13.6	14.9	12.5	12.0	13.7	10.7	28.8	27.8	29.4
	1997Pr	13.4	-	-	-	-	-	-	-	-

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.36
Age-Adjusted Chronic Liver Disease and Cirrhosis Death Rates by Race and Sex
Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	14.1	19.7	9.1	11.6	16.5	7.3	32.3	45.4	21.2
	1981	12.8	17.9	8.2	10.8	15.6	6.7	27.8	37.9	19.3
	1982	12.6	17.7	8.1	10.6	15.3	6.5	27.4	38.0	18.6
	1983	12.6	18.7	7.2	10.6	15.7	6.1	27.4	43.0	14.5
	1984	11.9	16.6	7.7	9.9	14.0	6.3	26.1	37.1	17.1
	1985	12.3	17.6	7.6	9.9	14.1	6.3	29.8	45.6	16.8
	1986	10.7	15.9	6.2	8.9	13.0	5.4	23.8	38.8	11.5
	1987	10.4	15.1	6.3	8.3	12.2	4.9	24.9	37.0	15.2
	1988	10.2	14.8	6.1	8.2	12.0	4.9	24.3	36.2	14.5
	1989	10.8	15.8	6.3	8.6	12.4	5.2	26.2	41.8	13.3
	1990	10.3	14.3	6.7	8.4	11.7	5.5	22.9	34.6	13.5
	1991	9.4	13.7	5.7	8.1	11.9	4.9	18.5	28.3	10.6
	1992	8.3	11.9	5.1	6.9	10.1	4.1	17.5	25.2	11.4
	1993	8.7	12.1	5.6	7.4	10.2	4.9	17.5	27.5	9.5
	1994	8.8	12.5	5.4	7.5	11.0	4.3	17.8	25.5	11.7
	1995	8.3	12.6	4.5	7.2	10.7	3.9	16.2	27.2	7.6
	1996	7.9	11.2	4.8	7.0	9.7	4.4	14.0	23.2	6.9
1997	7.8	11.0	4.9	6.9	9.6	4.4	14.0	22.3	7.6	
United States	1980	12.2	17.1	7.9	11.0	15.7	7.0	21.6	30.6	14.4
	1981	11.4	16.0	7.4	10.5	14.8	6.7	19.2	27.3	12.7
	1982	10.5	14.9	6.7	9.8	14.1	6.1	16.5	23.5	10.9
	1983	10.2	14.3	6.6	9.5	13.4	6.0	16.2	22.8	10.8
	1984	10.0	14.1	6.4	9.3	13.2	5.9	15.8	22.5	10.3
	1985	9.6	13.6	6.1	8.9	12.6	5.6	16.1	23.4	10.1
	1986	9.2	13.0	5.9	8.6	12.2	5.4	14.5	20.8	9.3
	1987	9.1	13.0	5.6	8.4	12.1	5.1	14.9	22.0	9.1
	1988	9.0	12.9	5.6	8.4	12.1	5.0	14.5	20.7	9.3
	1989	8.9	12.8	5.5	8.3	11.9	5.0	13.9	20.5	8.5
	1990	8.6	12.2	5.3	8.0	11.5	4.8	13.7	20.0	8.7
	1991	8.3	11.7	5.2	7.8	11.2	4.8	12.3	17.4	8.2
	1992	8.0	11.6	4.8	7.7	11.1	4.6	11.4	17.2	6.9
	1993	7.9	11.3	4.9	7.6	10.8	4.6	10.9	16.1	6.6
	1994	7.9	11.3	4.8	7.5	10.9	4.5	10.7	15.9	6.6
	1995	7.6	11.0	4.6	7.4	10.7	4.3	9.9	14.7	6.0
	1996	7.5	10.7	4.5	7.3	10.5	4.4	9.2	13.8	5.7
1997Pr	7.2	-	-	-	-	-	-	-	-	-

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.37
Age-Adjusted Suicide Death Rates by Race and Sex
 Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	11.2	17.7	5.2	11.7	18.2	5.6	8.2	14.6	*
	1981	11.5	17.6	5.8	12.0	18.2	6.3	7.6	13.8	*
	1982	11.8	18.6	5.5	12.4	19.4	5.9	7.7	13.8	*
	1983	11.7	18.7	5.2	12.1	19.0	5.6	9.0	16.8	*
	1984	12.1	19.0	5.9	12.8	19.9	6.1	8.1	12.7	4.2
	1985	11.5	19.5	4.1	11.9	19.9	4.4	9.2	17.8	*
	1986	11.5	18.3	5.3	12.0	19.0	5.5	9.2	15.2	4.1
	1987	11.2	18.2	4.7	11.6	18.5	5.0	9.2	16.5	3.1
	1988	11.0	18.1	4.5	11.5	18.7	4.8	8.4	15.0	*
	1989	10.6	18.1	3.8	11.1	18.6	4.0	8.0	14.0	3.0
	1990	10.7	18.0	3.9	11.0	18.4	4.1	8.3	15.3	*
	1991	11.2	18.9	4.2	11.7	19.4	4.4	9.0	16.5	*
	1992	10.6	17.8	3.8	11.0	18.2	4.1	7.9	14.6	*
	1993	10.6	18.4	3.3	10.9	18.6	3.6	8.6	16.5	*
	1994	10.1	17.3	3.4	10.5	17.8	3.5	8.2	14.6	*
	1995	9.4	16.1	3.2	9.6	16.4	3.1	8.0	14.2	2.8
	1996	10.5	17.8	3.7	10.9	18.2	3.9	8.0	14.6	2.4
1997	9.5	16.1	3.1	10.0	16.8	3.5	6.2	11.8	*	
United States	1980	11.4	18.0	5.4	12.1	18.9	5.7	6.4	11.1	2.4
	1981	11.5	18.0	5.7	12.2	18.9	6.0	6.4	11.0	2.5
	1982	11.6	18.3	5.4	12.4	19.4	5.8	6.2	10.8	2.2
	1983	11.4	18.2	5.2	12.2	19.3	5.6	6.0	10.5	2.1
	1984	11.6	18.7	5.2	12.4	19.7	5.6	6.4	11.2	2.3
	1985	11.5	18.8	4.9	12.3	19.9	5.3	6.4	11.3	2.1
	1986	11.9	19.3	5.1	12.7	20.5	5.4	6.6	11.5	2.4
	1987	11.7	19.1	4.9	12.5	20.1	5.3	6.7	12.0	2.1
	1988	11.4	18.7	4.7	12.2	19.8	5.1	6.8	11.8	2.4
	1989	11.3	18.6	4.5	12.0	19.6	4.8	7.1	12.5	2.4
	1990	11.5	19.0	4.5	12.2	20.1	4.8	7.0	12.4	2.4
	1991	11.4	18.8	4.3	12.1	19.9	4.8	6.9	12.5	1.9
	1992	11.1	18.4	4.3	11.8	19.5	4.6	6.9	12.4	2.1
	1993	11.3	18.7	4.3	12.0	19.7	4.6	7.2	12.9	2.1
	1994	11.2	18.7	4.2	11.9	19.7	4.5	7.1	12.7	2.1
	1995	11.2	18.6	4.1	11.9	19.7	4.4	6.9	12.4	2.0
	1996	10.8	18.0	4.0	11.6	19.1	4.4	6.6	11.8	2.0
1997Pr	10.3	-	-	-	-	-	-	-	-	-

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.38
Age-Adjusted Homicide Death Rates by Race and Sex
 Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	11.0	16.9	5.4	4.6	6.4	2.8	55.8	95.9	21.5
	1981	10.3	15.9	5.0	4.1	5.7	2.5	53.4	91.8	20.6
	1982	10.2	15.8	4.9	4.1	5.5	2.9	51.5	92.1	16.8
	1983	10.7	17.1	4.5	4.1	5.9	2.3	55.1	98.2	18.2
	1984	10.4	16.4	4.6	4.0	5.5	2.7	52.0	94.0	16.1
	1985	11.8	18.5	5.3	4.5	6.3	2.8	58.8	103.3	20.4
	1986	12.2	19.6	5.0	4.0	5.7	2.3	64.5	114.8	21.1
	1987	12.6	19.7	5.8	4.2	5.7	2.8	64.5	111.7	23.6
	1988	11.5	18.5	4.8	3.7	5.2	2.2	59.2	105.8	19.0
	1989	11.7	18.8	4.8	3.4	5.1	1.8	61.2	107.6	21.4
	1990	12.0	19.0	5.1	3.9	5.3	2.6	58.8	104.4	19.2
	1991	12.7	20.4	5.2	4.3	5.7	2.9	60.7	110.4	17.1
	1992	11.7	18.6	4.9	4.1	6.1	2.2	54.2	93.8	19.6
	1993	11.6	18.1	5.1	3.4	4.4	2.5	56.4	99.1	18.6
	1994	11.4	18.5	4.5	3.6	5.0	2.3	54.3	97.3	16.0
	1995	10.4	16.4	4.5	3.4	4.7	2.2	47.9	83.7	16.0
	1996	8.8	13.9	3.8	2.7	3.6	1.8	41.8	72.8	14.3
1997	8.6	13.3	3.8	2.8	3.8	1.8	39.1	67.1	14.4	
United States	1980	10.8	17.4	4.5	6.9	10.9	3.2	40.6	71.9	13.7
	1981	10.4	16.7	4.3	6.6	10.3	3.1	38.9	69.2	12.9
	1982	9.7	15.3	4.2	6.3	9.5	3.1	35.3	62.3	12.0
	1983	8.6	13.6	3.8	5.6	8.4	2.8	30.9	53.8	11.2
	1984	8.4	13.0	3.9	5.5	8.2	2.9	29.5	50.8	11.0
	1985	8.3	12.8	3.9	5.4	8.1	2.9	29.0	49.9	10.8
	1986	9.0	13.9	4.1	5.6	8.4	2.9	32.4	55.9	11.8
	1987	8.6	13.2	4.1	5.3	7.7	2.9	31.8	53.8	12.3
	1988	9.0	13.9	4.2	5.3	7.7	2.8	34.1	58.2	12.7
	1989	9.4	14.7	4.1	5.4	8.1	2.8	35.7	61.5	12.5
	1990	10.2	16.3	4.2	5.9	8.9	2.8	39.5	68.7	13.0
	1991	10.9	17.3	4.5	6.2	9.4	3.0	41.9	72.5	13.9
	1992	10.5	16.7	4.2	6.1	9.3	2.8	39.4	68.1	13.0
	1993	10.7	17.0	4.5	6.0	8.9	3.0	40.9	70.7	13.4
	1994	10.3	16.4	4.0	5.8	8.8	2.7	38.2	66.2	12.3
	1995	9.4	14.7	4.0	5.5	8.2	2.8	33.4	57.6	11.0
	1996	8.5	13.3	3.6	4.9	7.3	2.5	30.6	52.6	10.2
1997Pr	7.5	-	-	-	-	-	-	-	-	-

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
 United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.39
Age-Adjusted AIDS Death Rates by Race and Sex
Michigan and United States Residents, 1987 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1987	1.7	3.2	*	1.2	2.3	*	5.2	10.3	*
	1988	2.3	4.3	0.4	1.5	3.0	*	8.3	14.5	3.1
	1989	3.5	6.5	0.6	2.2	4.2	*	12.3	23.4	3.2
	1990	3.9	6.9	0.9	2.4	4.6	*	13.7	24.7	4.7
	1991	4.8	8.6	1.1	3.1	5.9	*	16.5	29.5	5.8
	1992	5.8	10.5	1.3	3.6	6.8	*	20.9	38.3	6.6
	1993	7.0	12.3	1.8	4.1	7.7	0.6	25.4	45.6	8.9
	1994	7.5	13.5	1.7	4.2	7.9	*	29.7	54.3	9.7
	1995	7.9	13.9	2.1	4.2	7.5	0.8	32.4	60.6	9.5
	1996	4.9	8.5	1.4	2.8	5.0	0.6	18.5	34.0	6.1
1997	3.0	5.1	1.0	1.4	2.4	*	13.5	24.7	4.5	
United States	1987	5.5	10.0	1.1	4.4	8.3	0.6	14.2	25.4	4.7
	1988	6.6	12.0	1.4	5.3	9.9	0.7	17.9	31.6	6.2
	1989	8.7	15.8	1.8	7.1	13.2	0.9	23.0	40.3	8.1
	1990	9.8	17.7	2.1	8.0	15.0	1.1	25.7	44.2	9.9
	1991	11.3	20.1	2.7	9.0	16.7	1.3	30.8	52.9	12.0
	1992	12.6	22.3	3.2	9.8	18.1	1.6	36.2	61.8	14.3
	1993	13.8	24.1	3.8	10.5	19.0	1.9	41.6	70.0	17.3
	1994	15.4	26.4	4.8	11.2	20.1	2.3	49.4	81.7	21.8
	1995	15.6	26.2	5.2	11.1	19.6	2.5	51.8	84.3	24.0
	1996	11.1	18.1	4.2	7.2	12.5	1.8	41.4	66.4	20.2
1997Pr	5.9	-	-	-	-	-	-	-	-	

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.40
Age-Adjusted Kidney Disease Death Rates by Race and Sex
Michigan and United States Residents, 1980 - 1997

Place	Year	All Races			White			Black		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Michigan	1980	4.5	5.5	3.9	3.8	4.9	3.2	10.6	11.6	10.1
	1981	4.7	5.5	4.1	3.9	4.8	3.3	11.1	11.8	10.8
	1982	4.8	6.3	3.8	4.1	5.6	3.2	9.8	11.8	8.3
	1983	4.8	5.8	4.3	4.3	5.3	3.8	8.5	9.9	7.5
	1984	4.6	6.1	3.5	3.9	5.3	3.0	9.8	12.9	7.6
	1985	4.8	6.1	3.9	4.0	5.4	3.2	11.1	12.9	9.9
	1986	5.3	6.6	4.4	4.3	5.6	3.6	12.4	14.5	11.1
	1987	5.0	6.1	4.4	4.1	5.1	3.6	12.0	14.1	10.4
	1988	5.2	6.3	4.4	4.3	5.3	3.7	11.9	14.4	9.9
	1989	4.6	6.3	3.4	3.8	5.1	2.9	10.8	16.1	7.0
	1990	4.5	5.6	3.9	3.9	5.0	3.2	9.1	9.8	8.9
	1991	4.5	5.8	3.6	3.9	5.1	3.2	8.6	11.5	6.4
	1992	4.8	5.8	4.1	4.0	5.0	3.3	10.1	11.2	9.3
	1993	5.2	6.0	4.6	4.5	5.5	3.8	10.6	10.8	10.4
	1994	4.7	5.6	4.2	4.1	4.9	3.6	10.0	11.5	9.0
	1995	4.7	5.5	4.1	4.2	4.9	3.6	8.3	10.6	6.8
	1996	4.8	6.0	3.9	4.1	5.3	3.3	9.3	11.0	7.9
1997	5.3	6.6	4.5	4.6	5.7	3.9	11.0	13.7	9.1	
United States	1980	4.5	5.7	3.6	3.7	4.9	2.9	11.9	14.2	10.3
	1981	4.5	5.6	3.6	3.8	4.9	3.1	11.1	13.2	9.6
	1982	4.5	5.8	3.7	3.9	5.1	3.0	11.2	13.2	9.8
	1983	4.6	5.7	3.9	4.0	5.0	3.3	10.8	12.6	9.6
	1984	4.7	6.0	3.9	4.1	5.3	3.3	11.2	13.0	10.0
	1985	4.9	6.1	4.0	4.2	5.4	3.4	12.0	14.1	10.5
	1986	4.9	6.2	4.0	4.2	5.4	3.3	11.7	14.2	9.9
	1987	4.8	6.0	3.9	4.1	5.3	3.3	11.3	13.4	9.8
	1988	4.8	6.0	4.0	4.1	5.2	3.3	11.6	13.3	10.3
	1989	4.4	5.6	3.6	3.7	4.7	3.0	11.4	13.9	9.6
	1990	4.3	5.4	3.6	3.6	4.6	3.0	10.8	12.9	9.4
	1991	4.3	5.4	3.5	3.7	4.7	3.0	10.3	12.8	8.6
	1992	4.3	5.5	3.6	3.7	4.8	3.0	10.2	12.5	8.7
	1993	4.5	5.5	3.8	3.8	4.9	3.2	10.5	12.4	9.2
	1994	4.3	5.2	3.6	3.7	4.6	3.1	10.1	11.7	8.8
	1995	4.3	5.4	3.6	3.7	4.7	3.1	10.2	12.0	8.8
	1996	4.3	5.3	3.6	3.8	4.7	3.1	9.8	11.5	8.5
1997Pr	4.5	-	-	-	-	-	-	-	-	-

Note: Rates are 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). Michigan rates for 1980-1996 have been revised based upon revisions to population estimates; see Qualifications & Limitations of Data & Calculations.

Source: Michigan Resident Death Files, Division for Vital Records and Health Statistics, MDCH
United States data: Table 10, NCHS *Monthly Vital Statistics Report*, Vol. 47, No.4, October 7, 1998

Table 4.41
Population by Age and County of Residence
Michigan Residents, 1997

County	All Ages	Age									
		Under 1	1 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
Michigan	9,773,892	129,533	1,938,918	1,358,577	1,434,487	1,640,788	1,260,695	796,884	664,228	417,315	132,467
Alcona	10,980	95	1,571	1,086	891	1,542	1,317	1,681	1,639	945	215
Alger	9,958	97	1,559	1,527	1,115	1,727	1,161	938	877	733	221
Allegan	100,585	1,198	22,623	13,590	13,858	17,798	12,563	7,778	5,917	4,144	1,118
Alpena	30,638	326	5,462	4,368	3,209	5,095	3,764	3,257	2,829	1,740	590
Antrim	20,975	211	3,729	2,448	2,221	3,222	2,427	2,446	2,523	1,328	420
Arenac	16,411	185	2,904	2,319	1,918	2,457	1,954	1,968	1,543	841	317
Baraga	8,448	86	1,528	1,192	959	1,248	1,090	728	696	737	186
Barry	53,533	575	10,744	7,179	6,424	9,481	7,378	5,198	3,624	2,174	754
Bay	110,423	1,286	20,427	14,857	14,359	18,324	15,280	9,841	8,390	5,842	1,818
Benzie	14,290	147	2,461	1,494	1,519	2,267	1,828	1,747	1,726	818	280
Berrien	160,713	2,329	32,381	21,967	21,410	24,935	20,817	13,829	12,582	8,118	2,346
Branch	43,628	558	9,097	5,981	5,738	7,251	5,255	4,083	3,146	1,977	542
Calhoun	141,821	1,953	27,916	20,169	18,835	22,703	18,460	12,620	10,615	6,393	2,152
Cass	49,967	557	9,806	6,737	6,214	8,048	6,879	4,772	3,997	2,287	671
Charlevoix	23,630	302	4,544	2,887	2,890	4,090	2,869	2,403	1,956	1,296	392
Cheboygan	23,535	239	4,155	2,959	2,288	3,494	2,992	2,855	2,690	1,390	474
Chippewa	37,900	403	6,807	6,047	6,279	6,588	3,989	3,128	2,549	1,630	479
Clare	29,011	391	5,702	3,523	3,372	4,131	3,045	3,517	3,310	1,563	454
Clinton	63,087	686	12,616	8,759	8,789	11,027	9,304	5,583	3,531	2,046	742
Crawford	13,880	166	2,620	1,632	1,625	2,309	1,617	1,617	1,359	686	246
Delta	38,801	370	6,980	5,570	4,303	6,405	5,013	3,703	3,478	2,230	743
Dickinson	27,062	274	5,093	3,289	2,950	4,783	3,419	2,312	2,399	1,841	697
Eaton	100,173	1,044	19,987	14,488	13,097	16,961	15,203	8,604	5,752	3,620	1,409
Emmet	28,339	311	5,675	3,475	3,318	5,228	3,659	2,316	2,348	1,490	517
Genesee	435,393	6,520	90,240	61,183	60,990	72,273	58,060	37,705	27,856	15,344	5,220
Gladwin	24,879	246	4,562	3,110	2,701	3,406	2,910	3,178	2,993	1,410	364
Gogebic	17,439	152	2,945	2,198	1,672	2,564	2,083	1,672	1,896	1,749	509
Gd Traverse	73,161	699	14,267	9,516	9,401	14,046	9,588	5,854	5,191	3,343	1,256
Gratiot	40,024	479	7,408	6,826	5,380	6,179	4,998	3,337	2,708	1,934	775
Hillsdale	46,240	542	9,661	7,235	5,796	7,268	5,602	4,007	3,322	2,018	790
Houghton	35,810	349	5,617	8,177	4,905	4,402	3,750	2,926	2,363	2,518	811
Huron	35,270	445	6,899	4,346	3,917	5,649	3,996	3,297	3,483	2,467	771
Ingham	284,089	3,583	52,271	57,011	50,990	44,784	33,886	17,330	12,853	8,491	2,890
Ionia	61,112	645	12,015	10,906	9,420	10,244	7,218	4,426	3,282	2,155	802
Iosco	25,129	244	4,481	2,535	2,817	3,744	3,358	3,034	2,603	1,780	535
Iron	13,067	111	1,993	1,475	1,025	1,971	1,630	1,342	1,687	1,483	354
Isabella	57,623	648	9,758	19,078	6,657	7,502	5,568	3,580	2,779	1,670	383
Jackson	155,346	1,890	29,711	21,059	22,544	27,026	19,995	12,722	10,886	7,122	2,390
Kalamazoo	229,192	2,755	42,922	38,389	36,918	37,199	28,888	17,382	13,175	8,770	2,793
Kalkaska	15,451	183	2,998	2,065	1,925	2,641	1,788	1,661	1,326	661	204
Kent	539,425	8,024	118,682	70,079	93,290	94,634	63,014	36,854	29,906	19,479	5,464
Keweenaw	2,078	15	260	214	145	284	261	300	223	289	88

Source: Michigan Resident Birth and Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.41
Population by Age and County of Residence
 Michigan Residents, 1997 (continued)

County	All Ages	Age									
		Under 1	1 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
Lake	10,153	82	1,839	1,108	941	1,344	1,180	1,396	1,419	610	232
Lapeer	86,893	959	17,625	13,372	11,926	15,441	12,235	7,145	4,551	2,575	1,062
Leelanau	18,755	177	3,688	2,014	1,783	3,619	2,547	1,829	1,880	941	282
Lenawee	97,998	1,254	19,415	15,704	13,311	15,536	13,132	7,924	6,496	4,010	1,218
Livingston	141,914	1,437	29,510	18,765	19,088	28,746	21,038	11,465	6,685	3,742	1,434
Luce	6,584	68	1,035	1,105	799	1,084	761	672	605	317	141
Mackinac	11,113	110	2,062	1,407	1,094	1,737	1,347	1,294	1,197	632	232
Macomb	783,451	8,873	137,392	87,815	123,575	133,253	103,290	70,160	61,910	43,591	13,588
Manistee	23,179	202	3,724	3,139	2,526	3,768	3,060	2,536	2,305	1,478	440
Marquette	61,792	560	11,516	9,529	8,346	11,544	7,608	4,563	4,052	3,168	904
Mason	27,854	310	5,235	3,952	3,031	4,418	3,652	2,704	2,420	1,672	459
Mecosta	39,178	435	6,555	11,316	4,441	4,371	4,197	3,261	2,695	1,526	383
Menominee	24,443	184	4,248	3,061	2,560	4,348	3,272	2,318	2,247	1,685	519
Midland	81,248	1,015	15,819	11,093	11,936	13,576	11,082	7,172	5,230	3,240	1,081
Missaukee	13,682	138	2,895	1,719	1,589	2,219	1,506	1,507	1,237	680	192
Monroe	142,301	1,709	29,158	20,928	19,382	23,915	19,249	12,042	9,129	5,115	1,674
Montcalm	59,647	754	12,294	8,730	8,409	10,124	7,162	4,898	3,986	2,468	819
Montmorency	9,980	88	1,499	1,133	704	1,506	1,049	1,346	1,622	780	250
Muskegon	165,882	2,251	35,328	23,125	22,202	27,741	20,084	13,031	11,634	8,084	2,402
Newaygo	45,059	547	10,037	6,015	5,631	7,435	5,339	4,398	3,288	1,873	498
Oakland	1,166,512	13,832	214,466	134,000	184,333	217,262	171,698	96,774	75,309	43,139	15,702
Oceana	24,599	295	5,135	3,510	2,901	3,777	3,147	2,306	2,107	1,117	306
Ogemaw	20,955	269	3,836	2,668	2,078	3,096	2,326	2,791	2,504	1,146	238
Ontonagon	8,117	73	1,285	976	774	1,188	1,107	1,113	783	652	164
Osceola	22,028	259	4,685	3,053	2,527	3,213	2,734	2,378	1,919	970	290
Oscoda	8,844	87	1,451	843	862	1,268	897	1,308	1,313	612	197
Otsego	21,800	223	4,341	2,653	2,662	3,731	2,520	1,991	2,158	1,062	455
Ottawa	220,403	2,716	49,770	33,436	33,361	38,289	26,313	15,342	11,359	7,474	2,345
Presque Isle	14,392	160	2,499	1,850	1,290	2,069	1,581	1,590	2,031	1,002	319
Roscommon	23,174	221	3,362	2,196	1,837	2,995	2,430	3,344	4,047	2,098	642
Saginaw	211,278	3,109	43,102	30,520	27,955	33,034	28,409	18,393	14,244	9,312	3,200
St Clair	157,704	1,846	32,512	21,833	22,035	26,664	20,866	12,790	10,446	6,564	2,150
St Joseph	61,234	733	12,822	8,288	8,040	9,978	8,036	5,157	4,419	2,729	1,028
Sanilac	42,736	467	8,394	6,328	5,137	6,666	5,082	3,924	3,643	2,382	714
Schoolcraft	8,748	67	1,385	1,191	883	1,430	1,051	976	961	572	226
Shiawassee	72,236	871	14,021	11,095	9,421	11,793	10,151	6,466	4,503	3,040	874
Tuscola	58,087	632	11,355	8,934	7,252	9,464	8,008	5,288	3,674	2,730	749
Van Buren	75,686	991	16,168	10,782	9,173	12,944	9,540	6,342	5,409	3,251	1,086
Washtenaw	299,503	3,644	49,178	59,744	59,502	46,199	38,675	19,387	13,091	7,808	2,278
Wayne	2,127,087	36,210	458,907	282,995	317,321	348,193	262,035	157,379	145,478	91,494	27,073
Wexford	29,147	357	6,265	3,707	3,797	4,878	3,429	2,645	2,228	1,403	441

Source: Michigan Resident Birth and Death Files, Division for Vital Records and Health Statistics, MDCH

Table 4.42
Deaths by Age and County of Residence
Michigan Residents, 1997

County	All Ages	Age at Death									
		Under 1	1 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
Michigan	82,994	1,085	495	1,129	1,550	3,143	5,362	8,459	17,310	24,215	20,246
Alcona	170	-	2	1	4	3	10	18	36	54	42
Alger	91	1	1	-	1	3	2	9	16	36	22
Allegan	784	9	3	10	10	18	54	67	164	259	190
Alpena	333	2	1	2	2	8	19	32	52	117	98
Antrim	226	2	5	2	2	5	5	25	51	74	55
Arenac	176	1	-	1	1	6	8	19	53	45	42
Baraga	139	2	-	3	-	4	4	11	23	44	48
Barry	429	9	4	5	5	13	34	53	95	118	93
Bay	1,029	10	-	11	9	36	54	112	207	310	280
Benzie	137	1	-	2	4	1	4	15	27	42	41
Berrien	1,480	22	11	31	24	34	96	141	309	452	360
Branch	435	4	2	-	4	11	25	48	95	118	128
Calhoun	1,517	17	20	22	26	43	80	150	345	458	356
Cass	430	6	4	6	8	14	31	43	94	124	100
Charlevoix	216	5	1	-	3	4	11	18	40	67	67
Cheboygan	323	3	1	4	3	4	20	29	71	96	92
Chippewa	281	3	3	-	3	9	13	30	57	81	82
Clare	373	1	4	5	6	5	22	46	100	110	74
Clinton	401	3	2	9	9	11	17	37	76	132	105
Crawford	127	1	-	-	3	3	11	14	38	36	21
Delta	404	2	3	8	1	7	21	42	70	138	112
Dickinson	314	-	2	2	7	6	16	25	55	93	108
Eaton	675	2	2	8	13	11	38	77	139	208	177
Emmet	245	-	3	4	3	7	8	20	49	71	80
Genesee	3,731	81	30	56	71	166	274	453	832	931	837
Gladwin	280	3	1	-	2	9	17	43	62	71	72
Gogebic	278	6	-	3	4	6	11	12	38	104	94
Gd Traverse	627	4	3	9	9	27	29	54	121	189	182
Gratiot	423	5	2	2	6	13	21	39	74	118	143
Hillsdale	418	4	6	5	4	11	29	42	82	128	107
Houghton	391	2	2	6	7	9	18	31	42	148	126
Huron	398	1	2	2	4	3	16	31	75	128	136
Ingham	1,717	28	5	26	28	70	118	178	311	506	447
Ionia	434	7	2	8	5	12	20	48	86	126	120
Iosco	345	-	-	1	2	7	13	42	105	99	76
Iron	214	-	-	-	1	1	3	18	35	90	66
Isabella	364	1	1	12	4	11	25	33	82	96	99
Jackson	1,398	18	8	15	19	46	97	150	283	385	377
Kalamazoo	1,737	27	10	16	39	49	98	156	338	482	522
Kalkaska	141	2	1	1	3	3	8	16	38	46	23
Kent	3,937	63	20	56	80	150	243	333	702	1,131	1,159
Keweenaw	31	-	-	-	-	-	2	1	6	12	10

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.42
Deaths by Age and County of Residence
Michigan Residents, 1997 (continued)

County	All Ages	Age at Death									
		Under 1	1 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
Lake	141	-	2	2	3	1	14	16	35	36	32
Lapeer	595	10	8	14	10	25	41	70	129	154	134
Leelanau	165	1	-	1	2	5	8	12	26	46	64
Lenawee	801	4	3	17	15	26	36	79	152	242	227
Livingston	855	9	3	9	13	31	62	107	160	268	193
Luce	69	2	-	1	1	1	1	1	11	23	28
Mackinac	133	1	1	1	1	1	6	16	28	42	36
Macomb	6,622	57	24	58	102	217	367	654	1,454	2,141	1,548
Manistee	271	1	1	-	1	7	11	21	66	88	75
Marquette	599	3	1	11	5	17	21	55	106	202	178
Mason	306	5	-	3	-	11	16	27	69	86	89
Mecosta	316	3	1	8	6	6	19	29	67	84	93
Menominee	254	1	-	3	4	5	9	25	55	72	80
Midland	581	7	5	6	11	14	40	54	121	160	163
Missaukee	133	-	1	2	4	2	5	10	32	38	39
Monroe	1,126	12	8	14	29	52	75	110	246	310	270
Montcalm	519	4	4	10	15	9	33	61	116	163	104
Montmorency	153	-	1	-	1	3	7	16	36	51	38
Muskegon	1,536	23	9	20	31	50	92	154	326	458	373
Newaygo	448	3	5	5	9	12	27	55	86	130	116
Oakland	8,402	97	47	92	145	305	500	788	1,713	2,432	2,283
Oceana	216	1	3	3	13	1	15	30	35	62	53
Ogemaw	255	1	-	4	2	7	15	42	71	72	41
Ontonagon	135	-	-	1	1	2	8	14	28	49	32
Osceola	233	-	5	2	5	3	15	29	55	65	54
Oscoda	105	1	-	-	1	1	4	17	23	37	21
Otsego	183	2	2	3	-	10	11	17	37	54	47
Ottawa	1,340	20	8	16	24	35	67	116	240	374	440
Presque Isle	189	-	-	3	-	1	8	11	56	63	47
Roscommon	347	1	2	3	3	14	12	47	76	119	70
Saginaw	1,895	27	12	26	32	66	127	188	378	553	486
St Clair	1,360	16	9	20	16	46	62	134	298	426	333
St Joseph	580	5	2	10	16	20	34	65	135	158	135
Sanilac	498	-	1	6	5	17	20	46	107	164	132
Schoolcraft	125	-	-	1	-	5	2	10	29	43	35
Shiawassee	564	8	5	4	8	19	28	54	121	174	143
Tuscola	539	10	4	8	10	12	32	48	108	163	144
Van Buren	636	12	5	6	14	17	45	72	131	185	149
Washtenaw	1,622	25	9	23	40	76	131	168	306	427	417
Wayne	20,200	353	136	356	507	1,121	1,680	2,202	4,376	5,631	3,834
Wexford	298	2	1	2	3	11	10	23	76	82	88
Unknown	50	-	-	1	3	-	1	5	16	15	9

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.43
Live Births by Race, Ancestry and County of Residence
Michigan Residents, 1997

County	Race						Ancestry	
	All Races	White	Black	American Indian	Asian & Pacific Islander	All Other Races	Arab	Hispanic
Michigan	133,549	104,980	24,201	761	2,829	38	2,901	5,440
Alcona	92	90	-	1	1	-	-	-
Alger	96	94	-	2	-	-	-	1
Allegan	1,415	1,376	22	7	10	-	3	112
Alpena	353	347	-	4	1	-	1	-
Antrim	250	240	1	8	1	-	1	4
Arenac	165	161	1	2	1	-	-	5
Baraga	108	83	-	23	2	-	-	2
Barry	682	676	3	1	2	-	1	8
Bay	1,338	1,302	18	5	10	-	2	88
Benzie	190	180	1	7	-	-	-	3
Berrien	2,201	1,581	588	7	25	-	5	82
Branch	507	500	3	1	3	-	3	12
Calhoun	1,825	1,537	257	3	27	-	1	78
Cass	523	467	44	4	8	-	2	22
Charlevoix	320	312	-	7	1	-	-	8
Cheboygan	276	268	2	5	1	-	-	2
Chippewa	418	327	-	87	4	-	-	8
Clare	358	352	-	4	2	-	-	1
Clinton	793	783	2	3	5	-	-	27
Crawford	150	144	1	4	1	-	-	2
Delta	391	370	2	16	3	-	1	2
Dickinson	299	295	-	1	3	-	-	3
Eaton	1,200	1,134	47	5	13	-	8	35
Emmet	345	323	2	17	3	-	1	4
Genesee	6,315	4,501	1,737	3	69	-	34	75
Gladwin	252	247	-	2	3	-	-	1
Gogebic	170	152	-	15	3	-	-	1
Gd Traverse	894	868	6	11	8	-	2	20
Gratiot	509	507	1	-	1	-	1	23
Hillsdale	567	563	-	2	1	-	1	8
Houghton	388	371	-	4	13	-	-	4
Huron	390	380	2	3	5	-	-	14
Ingham	3,989	3,141	646	16	182	-	45	291
Ionia	780	773	-	4	2	-	3	17
Iosco	251	245	-	3	3	-	1	2
Iron	106	102	-	3	1	-	-	2
Isabella	633	587	9	28	9	-	4	11
Jackson	2,072	1,871	166	7	15	1	5	66
Kalamazoo	3,124	2,556	478	17	65	2	18	117
Kalkaska	196	193	-	2	1	-	-	5

Note: Unknown race is included in the "all races" column only.

Source: 1997 Michigan Resident Live Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.43
Live Births by Race, Ancestry and County of Residence
 Michigan Residents, 1997 (continued)

County	Race						Ancestry	
	All Races	White	Black	American Indian	Asian & Pacific Islander	All Other Races	Arab	Hispanic
Kent	8,998	7,668	1,073	49	190	16	51	818
Keweenaw	18	18	-	-	-	-	1	-
Lake	114	92	20	1	1	-	-	2
Lapeer	1,097	1,091	2	1	2	-	4	43
Leelanau	197	179	-	17	1	-	1	19
Lenawee	1,184	1,159	10	3	4	-	1	111
Livingston	1,901	1,833	4	9	22	-	7	36
Luce	72	64	-	7	1	-	-	-
Mackinac	114	93	-	20	1	-	-	2
Macomb	9,776	9,117	246	29	286	2	319	177
Manistee	248	243	-	2	1	1	-	18
Marquette	638	613	2	18	3	-	-	7
Mason	288	279	1	8	-	-	-	14
Mecosta	444	414	23	2	2	2	3	5
Menominee	218	206	-	12	-	-	-	1
Midland	988	953	11	2	21	-	-	20
Missaukee	173	172	-	1	-	-	-	2
Monroe	1,789	1,726	37	3	13	-	2	32
Montcalm	845	825	5	6	8	-	-	34
Montmorency	91	90	-	1	-	-	-	-
Muskegon	2,385	1,870	480	19	14	-	-	102
Newaygo	633	618	6	6	2	1	-	51
Oakland	15,992	13,512	1,603	34	647	4	641	410
Oceana	323	320	1	1	1	-	-	70
Ogemaw	238	233	-	3	2	-	-	8
Ontonagon	66	64	-	2	-	-	-	-
Osceola	279	273	-	3	3	-	1	4
Oscoda	105	103	-	-	2	-	-	1
Otsego	275	272	-	2	-	-	1	4
Ottawa	3,356	3,225	34	16	78	2	2	357
Presque Isle	143	140	-	2	1	-	-	-
Roscommon	202	195	-	6	1	-	1	5
Saginaw	2,903	2,124	739	7	31	-	17	277
St Clair	2,057	1,978	44	17	14	-	12	58
St Joseph	856	823	24	1	7	1	-	53
Sanilac	604	596	2	4	2	-	3	28
Schoolcraft	93	82	-	10	1	-	-	2
Shiawassee	943	934	1	1	6	-	-	20
Tuscola	684	675	1	3	4	-	1	16
Van Buren	1,053	978	64	6	5	-	3	139
Washtenaw	4,048	2,928	603	14	308	3	131	92
Wayne	31,843	15,868	15,125	65	634	3	1,555	1,233
Wexford	337	329	1	4	2	-	-	3
Unknown	7	6	-	-	-	-	1	-

Note: Unknown race is included in the "all races" column only.

Source: 1997 Michigan Resident Live Birth File, Division for Vital Records and Health Statistics, MDCH

Table 4.44
Deaths by Race, Ancestry and County of Residence
Michigan Residents, 1997

County	Race						Ancestry	
	All Races	White	Black	American Indian	Asian & Pacific Islander	All Other Races	Arab	Hispanic
Michigan	82,994	70,193	12,037	422	292	6	653	750
Alcona	170	168	-	1	-	-	-	-
Alger	91	90	-	1	-	-	-	-
Allegan	784	763	13	8	-	-	-	9
Alpena	333	330	1	1	1	-	-	-
Antrim	226	225	-	1	-	-	-	2
Arenac	176	175	-	1	-	-	-	1
Baraga	139	124	-	15	-	-	-	-
Barry	429	429	-	-	-	-	-	2
Bay	1,029	1,018	5	5	-	-	1	9
Benzie	137	136	-	1	-	-	-	-
Berrien	1,480	1,251	223	5	1	-	2	12
Branch	435	432	1	2	-	-	2	1
Calhoun	1,517	1,335	164	10	7	-	1	10
Cass	430	383	40	5	2	-	-	3
Charlevoix	216	211	-	4	1	-	-	1
Cheboygan	323	316	-	7	-	-	1	1
Chippewa	281	257	1	22	-	-	1	-
Clare	373	370	-	3	-	-	-	1
Clinton	401	396	1	2	2	-	-	4
Crawford	127	127	-	-	-	-	-	1
Delta	404	397	-	7	-	-	2	-
Dickinson	314	312	-	2	-	-	-	-
Eaton	675	649	23	1	2	-	3	3
Emmet	245	238	1	6	-	-	-	-
Genesee	3,731	3,014	681	28	6	-	14	21
Gladwin	280	279	-	-	1	-	-	1
Gogebic	278	274	-	4	-	-	-	-
Gd Traverse	627	621	1	3	1	-	-	5
Gratiot	423	420	1	1	1	-	-	9
Hillsdale	418	417	1	-	-	-	-	1
Houghton	391	386	3	2	-	-	-	1
Huron	398	398	-	-	-	-	-	3
Ingham	1,717	1,545	154	4	12	-	11	49
Ionia	434	431	2	-	-	-	-	2
Iosco	345	337	-	7	1	-	-	-
Iron	214	213	-	1	-	-	-	-
Isabella	364	339	9	15	-	-	3	2
Jackson	1,398	1,293	96	7	1	-	-	8
Kalamazoo	1,737	1,575	145	8	8	-	4	7
Kalkaska	141	138	1	2	-	-	-	-

Note: Unknown race is included in the "all races" column only.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Table 4.44
Deaths by Race, Ancestry and County of Residence
Michigan Residents, 1997 (continued)

County	Race						Ancestry	
	All Races	White	Black	American Indian	Asian & Pacific Islander	All Other Races	Arab	Hispanic
Kent	3,937	3,598	305	16	16	1	25	64
Keweenaw	31	31	-	-	-	-	-	-
Lake	141	110	29	1	1	-	-	-
Lapeer	595	587	2	6	-	-	1	4
Leelanau	165	159	-	6	-	-	-	2
Lenawee	801	789	6	3	2	-	1	23
Livingston	855	848	2	4	1	-	2	5
Luce	69	67	-	2	-	-	-	1
Mackinac	133	119	-	13	-	-	-	-
Macomb	6,622	6,464	103	14	33	1	110	25
Manistee	271	269	-	1	1	-	-	1
Marquette	599	596	-	3	-	-	2	2
Mason	306	300	-	5	1	-	-	2
Mecosta	316	308	3	5	-	-	-	-
Menominee	254	251	-	3	-	-	1	-
Midland	581	568	3	9	-	-	1	3
Missaukee	133	132	-	1	-	-	-	1
Monroe	1,126	1,087	32	6	-	-	-	2
Montcalm	519	515	-	2	2	-	1	6
Montmorency	153	153	-	-	-	-	1	-
Muskegon	1,536	1,341	185	8	2	-	-	13
Newaygo	448	436	10	2	-	-	-	7
Oakland	8,402	7,649	637	18	85	2	192	62
Oceana	216	214	1	1	-	-	1	5
Ogemaw	255	255	-	-	-	-	-	1
Ontonagon	135	135	-	-	-	-	-	-
Osceola	233	232	-	-	-	-	-	-
Oscoda	105	104	-	1	-	-	-	1
Otsego	183	182	-	1	-	-	1	-
Ottawa	1,340	1,325	10	3	1	-	1	28
Presque Isle	189	189	-	-	-	-	-	-
Roscommon	347	346	-	1	-	-	-	1
Saginaw	1,895	1,565	322	6	2	-	1	54
St Clair	1,360	1,332	26	2	-	-	5	12
St Joseph	580	550	22	6	1	-	-	3
Sanilac	498	495	-	3	-	-	-	5
Schoolcraft	125	116	1	8	-	-	-	1
Shiawassee	564	557	2	4	1	-	1	4
Tuscola	539	529	8	1	1	-	1	4
Van Buren	636	568	59	7	2	-	1	6
Washtenaw	1,622	1,379	212	8	22	-	9	11
Wayne	20,200	11,588	8,489	47	70	2	250	221
Wexford	298	294	-	3	1	-	-	1
Unknown	50	49	1	-	-	-	-	-

Note: Unknown race is included in the "all races" column only.

Source: 1997 Michigan Resident Death File, Division for Vital Records and Health Statistics, MDCH

Figure 4.2
Michigan Live Birth Certificate

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

STATE FILE NUMBER
121 - 0416973

1 CHILD - NAME (FIRST, MIDDLE, LAST)

2 SEX Male Female

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 CERTIFIER'S NAME & TITLE (print or type)

SIGNATURE

6c NAME AND TITLE OF ATTENDANT IF OTHER THAN CERTIFIER

6d MAILING ADDRESS AT BIRTH (STREET NO., CITY OR VILLAGE, STATE, ZIP)

7a REGISTRAR'S SIGNATURE

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)

INSIDE CITY OR VILLAGE OF

TWP. OF

8g COUNTY

8h STATE

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

10b THE PARENT(S) REQUEST THAT INFORMATION ON THIS BIRTH BE RELEASED TO THE SOCIAL SECURITY ADMIN. FOR ISSUANCE OF A SOCIAL SECURITY NUMBER AND CARD.

YES NO

SIGNATURE (PARENT OR OTHER INFORMANT)

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 i.e., Chinese, Filipino, Asian Indian, etc. (Specify below)

13 EDUCATION (Specify only highest grade completed) Elementary/Secondary (0-12) College (14 or 5+)

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

20a LIVE BIRTHS (Do not include this child) 20b OTHER TERMINATIONS (Spontaneous and induced at any time after conception) 20c MOTHER TRANSFERRED PRIOR TO DELIVERY (If yes enter name of facility transferred from)

20a NOW LIVING 20b NOW DEAD

20c MOTHER TRANSFERRED

21 INFANT ADMITTED TO NICU? YES NO

22 ATTENDANT AT BIRTH MD DO NURSE NURSE MIDWIFE OTHER

23 DATE OF LAST LIVE BIRTH (Mo., Year)

24 BIRTHWEIGHT (Specify unit)

25 ESTIMATED GESTATIONAL AGE

26 APGAR SCORE 1 MIN 5 MIN

27 PLACE OF BIRTH Hospital Freestanding Birth Center Clinic/Doctor's Office Residence Other (Specify)

28 MEDICAL RISK FACTORS FOR THIS PREGNANCY (Check all that apply)

Anemia (Hct < 30; Hgb < 10)

Cardiac disease

Acute or chronic lung disease

Dilatation

Genital herpes

Hypertension/Dislipidemia

Hemoglobinopathy

Hypertension chronic

Hypertension pregnancy associated

Cholestasis

Incompetent cervix

Preterm infant 4000+ grams

Preterm preterm or small for gestational age infant

Bleeding

Other (Specify)

29 OTHER RISK FACTORS FOR THIS PREGNANCY

Induced use during pregnancy Yes No

Average number cigarettes per day

Average number drinks per week

Weight gained during pregnancy

30 OBSTETRIC PROCEDURES (Check all that apply)

Amniocentesis

Electronic fetal monitoring

Induction of labor

Simulation of labor

Tocolytic

Uterine vacuum

Other (Specify)

31 COMPLICATIONS OF LABOR AND/OR DELIVERY (Check all that apply)

Fetal (> 100" F or 38" C)

Macromom, moderate/heavy

Primovula rupture of membranes (> 12 hours)

Abruptio placenta

Placenta previa

Other excessive bleeding

Seizures during labor

Prolonged labor (> 3 hours)

Protracted labor (> 20 hours)

Dysfunctional labor

Breech/Malpresentation

Cephalopelvic disproportion

Cord problems

Anesthetic complications

Fetal distress

None

Other (Specify)

32 METHOD OF DELIVERY (Check all that apply)

Vaginal

Vaginal birth after previous C-section

Primary C-section

Repeat C-section

Forceps

Vacuum

33 ABNORMAL CONDITIONS OF THE NEWBORN (Check all that apply)

Anemia (Hct < 35; Hgb < 13)

Birth injury

Fetal alcohol syndrome

Hyaline membrane disease-RDS

Mechanical ventilation syndrome

Assisted ventilation > 30 min

Assisted ventilation > 30 min

Seizures

None

Other (Specify)

34 APPARENT CONGENITAL ANOMALIES OF NEWBORN (Check all that apply)

Anencephaly

Spina Bifida/Meningocele

Hydrocephalus

Microcephalus

Other central nervous system anomalies (Specify)

Heart malformations

Other circulatory/respiratory anomalies (Specify)

Rectal atresia/stenosis

Tracheo-esophageal fistula, Esophageal atresia

Omphalocele/Gastrochisis

Other gastrointestinal anomalies (Specify)

Malformed genitalia

Other urogenital anomalies (Specify)

Club foot

Polysyndactyly/Syndactyly/Actinoly

Club foot

Diaphragmatic hernia

Other musculoskeletal integument anomalies (Specify)

Down's syndrome

Other chromosomal anomalies (Specify)

None

Other (Specify)

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

Figure 4.3
Michigan Fetal Death Certificate

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 1 <input type="checkbox"/> MALE 2 <input type="checkbox"/> FEMALE <input type="checkbox"/> UNDETERMINABLE	1d. WEIGHT OF FETUS	1e. ESTIMATED WEEKS GESTATION WEEKS	1f. ATTENDANT AT DELIVERY 1 <input type="checkbox"/> M.D. 3 <input type="checkbox"/> NURSE 5 <input type="checkbox"/> NURSE-MIDWIFE 2 <input type="checkbox"/> D.O. 4 <input type="checkbox"/> MIDWIFE <input type="checkbox"/> OTHER (SPECIFY)	
	2a. RESIDENCE - STATE, IF OUTSIDE USA ENTER COUNTRY		2b. RESIDENCE - COUNTY		2c. RESIDENCE - LOCAL (Check one box and specify) <input type="checkbox"/> INSIDE CITY OR VILLAGE OF <input type="checkbox"/> TWP. OF		2d. ZIP CODE
MOTHER	3. ANCESTRY - (Indicate Father Race Caucasian, Central or South American, Chinese, other Chinese, African-American, Irish, English, French, Finnish, etc. (Specify later))		4. RACE - (American Indian, Black, White, etc. If Asian, give nationality i.e. Chinese, Filipino, Asian Indian, etc. (Specify later))		5. EDUCATION (Specify only highest grade completed) Elementary/Secondary (0-12) _____ College (1-4 or 5+) _____		6. OCCUPATION AND BUSINESS/INDUSTRY (Worked during last year) Occupation _____ Business/Industry _____
	3a. _____		4a. _____		5a. _____		7a. AGE (At Time of Delivery)
FATHER	3b. _____		4b. _____		5b. _____		7b. _____
MEDICAL AND PREGNANCY HISTORY INFORMATION	8. EXPECTED SOURCE OF PAYMENT FOR MEDICAL SERVICES (Private Insurance, Medicaid, etc.)		9. MOTHER TRANSFERRED PRIOR TO DELIVERY (Specify name of facility transferred from) <input type="checkbox"/> YES <input type="checkbox"/> NO				
	10. PREGNANCY HISTORY (Complete each space) DATE LAST NORMAL MENSTRUATION BEGAN (Month, Day, Year)						
	LIVE BIRTHS		11. INTER-UTERINE DEATHS (Specify fetus)		12. PLURALITY - Single, Twin, Triplet, etc. (Specify)		13. IF NOT SINGLE BIRTH - Born First, Second, Third, etc. (Specify)
	10a. NOW LIVING Number _____ None <input type="checkbox"/>	10b. NOW DEAD Number _____ None <input type="checkbox"/>			14a. MONTH OF PREGNANCY PRENATAL CARE BEGAN - First, Second, Third, etc. (Specify)		14b. PRENATAL VISITS - Total Number (if none, so state)
	10c. DATE OF LAST LIVE BIRTH (Mo., Year)		10d. DATE OF LAST OTHER TERMINATION (Mo., Year)				
	15a. MEDICAL RISK FACTORS FOR THIS PREGNANCY (Check all that apply)		15b. OTHER RISK FACTORS FOR THIS PREGNANCY (Complete all items)		16. OBSTETRIC PROCEDURES (Check all that apply)		
Anemia (Hct < 30/Male < 10) 01 <input type="checkbox"/> Cardiac disease 02 <input type="checkbox"/> Acute or chronic lung disease 03 <input type="checkbox"/> Diabetes 04 <input type="checkbox"/> Genital herpes 05 <input type="checkbox"/> Hydramnios/Oligohydramnios 06 <input type="checkbox"/> Hemoglobinopathy 07 <input type="checkbox"/> Hypertension, chronic 08 <input type="checkbox"/> Hypertension, pregnancy associated 09 <input type="checkbox"/> Ectopic pregnancy 10 <input type="checkbox"/> Incompetent cervix 11 <input type="checkbox"/> Previous infant 4000+ grams 12 <input type="checkbox"/> Previous preterm or small-for gestational-age infant 13 <input type="checkbox"/> Renal disease 14 <input type="checkbox"/> 9th sensation 15 <input type="checkbox"/> Uterine bleeding 16 <input type="checkbox"/> None 17 <input type="checkbox"/> Other (Specify) 17 <input type="checkbox"/>		Tobacco use during pregnancy Yes <input type="checkbox"/> No <input type="checkbox"/> Average number cigarettes per day _____ Alcohol use during pregnancy Yes <input type="checkbox"/> No <input type="checkbox"/> Average number of drinks per week _____ Weight gained during pregnancy _____ lb		Amniocentesis 01 <input type="checkbox"/> Electronic fetal monitoring 02 <input type="checkbox"/> Induction of labor 03 <input type="checkbox"/> Stimulation of labor 04 <input type="checkbox"/> Tocolysis 05 <input type="checkbox"/> Ultrasound 06 <input type="checkbox"/> None 07 <input type="checkbox"/> Other (Specify) 07 <input type="checkbox"/>			
17. COMPLICATIONS OF LABOR AND/OR DELIVERY (Check all that apply)		19. APPARENT CONGENITAL ANOMALIES OF FETUS (Check all that apply)					
Fetus (> 100° F. or 38° C) 01 <input type="checkbox"/> Meconium, moderate/heavy 02 <input type="checkbox"/> Premature rupture of membrane (> 12 hours) 03 <input type="checkbox"/> Abrupt placenta 04 <input type="checkbox"/> Placenta previa 05 <input type="checkbox"/> Other excessive bleeding 06 <input type="checkbox"/> Seizures during labor 07 <input type="checkbox"/> Precipitate labor (< 3 hours) 08 <input type="checkbox"/> Prolonged labor (> 20 hours) 09 <input type="checkbox"/> Dysfunctional labor 10 <input type="checkbox"/> Breech/Malpresentation 11 <input type="checkbox"/> Cephalopelvic disproportion 12 <input type="checkbox"/> Cord prolapse 13 <input type="checkbox"/> Anesthetic complication 14 <input type="checkbox"/> Fetal distress 15 <input type="checkbox"/> None 16 <input type="checkbox"/>		Anencephalus 01 <input type="checkbox"/> Spina Bifida/Meningocele 02 <input type="checkbox"/> Hydrocephalus 03 <input type="checkbox"/> Microcephalus 04 <input type="checkbox"/> Other central nervous system anomalies (Specify) 05 <input type="checkbox"/> Heart malformations 06 <input type="checkbox"/> Other circulatory/respiratory anomalies (Specify) 07 <input type="checkbox"/> Rectal atresia/stenosis 08 <input type="checkbox"/> Tracheo-esophageal fistula/Esophageal atresia 09 <input type="checkbox"/> Omphalocele/Gastroschisis 10 <input type="checkbox"/> Other gastrointestinal anomalies (Specify) 11 <input type="checkbox"/> Deformed genitalia 12 <input type="checkbox"/> Testicular agenesis 13 <input type="checkbox"/> Other genital anomalies (Specify) 14 <input type="checkbox"/> Club foot 15 <input type="checkbox"/> Polydactyl/Syndactyl/Adactyl 16 <input type="checkbox"/> Club foot 17 <input type="checkbox"/> Diaphragmatic hernia 18 <input type="checkbox"/> Other musculoskeletal/integumental anomalies (Specify) 19 <input type="checkbox"/> Down's syndrome 20 <input type="checkbox"/> Other chromosomal anomalies (Specify) 21 <input type="checkbox"/> None 22 <input type="checkbox"/> Other (Specify) 22 <input type="checkbox"/>					
20. PART I. Fetal or maternal condition, directly causing fetal death. IMMEDIATE CAUSE. Enter only one cause per line for a, b, and c.							
a. _____ DUE TO (OR AS A CONSEQUENCE OF) _____ b. _____ DUE TO (OR AS A CONSEQUENCE OF) _____ c. _____ DUE TO (OR AS A CONSEQUENCE OF) _____							
Fetal and/or maternal conditions, if any, giving rise to the immediate cause(s), stating the underlying cause last. 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)	

9-35 1/89
AUTHORITY
Act 388 Pa 1972

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.

Figure 4.4
Michigan Death Certificate

STATE OF MICHIGAN
DEPARTMENT OF PUBLIC HEALTH
CERTIFICATE OF DEATH

STATE FILE NUMBER
No 0187597

LF _____
CF _____

TYPE/PRINT IN PERMANENT BLACK INK

NAME OF DECEDENT FOR USE BY PHYSICIAN OR INSTITUTION

DECEDENT

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) _____ 6 COUNTY OF DEATH _____

7a LOCATION OF DEATH (Enter place officially pronounced dead in 7a, 7b, 7c.) HOSPITAL OR OTHER INSTITUTION - Name (If not an ether, give street and number) _____ 7b IF HOSP OR INST. Inpatient, Op./Liner, Room, DOA (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) INSIDE CITY OR VILLAGE OF _____ 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 decedent was ever first married) _____ 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 below) _____ 16. RACE - American Indian, Alaska Native, Hawaiian, Other Pacific Islander, White, Black, etc. (Specify below) _____ 17. DECEDENT'S EDUCATION (Specify only highest grade completed) Elementary/Secondary (9-12) _____ College (1-4 or 5+) _____

PARENTS

18 FATHER'S NAME (First, Middle, Last) _____ 19 MOTHER'S NAME (First, Middle, Surname before first married) _____

INFORMANT

20a. INFORMANT'S NAME (Type/Print) _____ 20b. ADDRESS (Street and Number or Rural Route Number, City or Village, State, ZIP Code) _____

DISPOSITION

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 _____

CAUSE OF DEATH

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. Approximate Interval Between Onset and Death

IMMEDIATE CAUSE (Final disease or condition resulting in death) _____

a. _____ DUE TO (OR AS A CONSEQUENCE OF) _____

b. _____ DUE TO (OR AS A CONSEQUENCE OF) _____

c. _____ DUE TO (OR AS A CONSEQUENCE OF) _____

d. _____

Sequentially 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) _____

CERTIFIER

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 causes stated. (Signature and Title) _____ 30b. DATE SIGNED (Mo., Day, Yr.) _____ 30c. TIME OF DEATH _____ 30d. NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print) _____

31a. (Check one only) The case reviewed and determined not to be a medical examiner's case. On the basis of observation and of investigation, in my opinion death occurred at the time, date and place and due to the causes and manner stated. 31b. DATE SIGNED (Mo., Day, Yr.) _____ 31c. CASE NUMBER _____ 31d. PRONOUNCED DEAD (Mo., Day, Yr.) _____ 31e. TIME OF DEATH _____ M _____

MEDICAL EXAMINER

32a. NAME AND ADDRESS OF PERSON WHO COMPLETED CAUSE OF DEATH (ITEM 26) (Type or Print) _____ 32b. LICENSE NUMBER _____

33a. ACC. SUICIDE, DOM. 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 R.F.D. No _____ City, Village or Twp _____ State _____

34a. REGISTRAR'S SIGNATURE _____ 34b. DATE FILED (Month, Day, Year) _____

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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
Michigan Marriage License

ROTARY MULTIFORMS, INC. • GRAND RAPIDS, MI • 616-942-2574



Marriage License

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

STATE FILE NO.

LOCAL FILE NO.

0166087

DATE OF APPLICATION

DATE CERTIFICATE FILED

Except for signature, spaces left blank must be completed by typewriter or printed legibly.

between and

FULL NAME OF MALE (FIRST, MIDDLE, LAST)

FULL NAME OF FEMALE (FIRST, MIDDLE, LAST)

LAST NAME BEFORE FIRST MARRIED, 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 TIMES PREVIOUSLY MARRIED

RESIDENCE COUNTY

NUMBER OF TIMES PREVIOUSLY MARRIED

BIRTHPLACE - CITY AND STATE

BIRTHPLACE - CITY AND STATE

FATHER'S FULL NAME

FATHER'S FULL NAME

MOTHER'S FULL NAME BEFORE FIRST MARRIED

MOTHER'S FULL NAME BEFORE FIRST MARRIED

FATHER'S BIRTHPLACE

MOTHER'S BIRTHPLACE

FATHER'S BIRTHPLACE

MOTHER'S BIRTHPLACE

An affidavit has been filed in this 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 _____, 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 CLERGY

NAME AND TITLE OF MAGISTRATE OR CLERGY (TYPE OR PRINT)

POST OFFICE ADDRESS OF MAGISTRATE OR CLERGY

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.

8138 (1/89)

By Authority of MCL 333.2813

This Space Reserved for Binding

Figure 4.6
Michigan Divorce Record

**RECORD OF
DIVORCE OR ANNULMENT**
MICHIGAN DEPARTMENT OF PUBLIC HEALTH
By authority of MCL 333.2813.

State File Number _____ Court Case Number _____
County Circuit Court _____

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 Check If Not Separated _____ Month, Day, Year

15. Number of Minor Children in Household at Separation Date (Filing Date if Not Separated) Check If None _____ Number

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 _____
 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 _____

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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