

---

**MICHIGAN DEPARTMENT OF COMMUNITY HEALTH**  
Division for Vital Records and Health Statistics

**MICHIGAN INFANT DEATH STATISTICS**  
January 1 through December 31, 2006



LANSING, MICHIGAN  
SEPTEMBER 2007

---

## Table Of Contents

Summary .....	1
<b>Selected Infant Death Statistics, Numbers, Averages and Rates</b>	
Table 1     Number of Infant Deaths, Live Births and Infant Death Rates for Michigan Residents, 1970-2006 .....	2
Figure 1     Figure of Infant Deaths, 1970-2006 .....	4
Table 2     Number of Infant Deaths, Live Births and Infant Death Rates By Race, 1970-2006 .....	5
Figure 2     Comparison of White and Black Infant Death Rates for Michigan Residents, 1970-2006 .....	7
Table 3     Number of Infant Deaths, Live Births and Infant Death Rates by County of Residence, 2006 and 2002 - 2006 Average .....	8
Table 4     Number of Infant Deaths, Live Births and Infant Death Rates by Selected Cities of Residence, 2006 and 2002 - 2006 Average .....	11
Table 5     Number and Rate of Infant Deaths by Race for Residents of Michigan, Detroit City, Wayne County (Excluding Detroit City) and Michigan (Excluding Wayne County), 1990- 2006 .....	12
Table 6     Number of Infant Deaths, Live Births and Infant Death Rates by Selected Characteristics of Newborn and of Mother for Michigan Residents, 2006 .....	14
Table 7     Number and Rate of Infant Deaths by Race, Michigan and United States Residents, 1989 - 2006 .....	15
Table 8     Number of Hispanic and Arabic Infant Deaths by Selected County and Michigan Michigan Residents, 2000 - 2006 .....	16
Table 9     Infant, Hebdomadal, Fetal and Perinatal Death Rates by Specified Race and Ancestry, 2006 .....	18
<b>Cause of Death</b>	
Table 10    Number of Infant Deaths by Cause of Death, 1980-2006, Michigan Residents .....	19
Table 11    Three-year Moving Average Infant Deaths Rates per 10,000 Live Births, by Cause of Death, 1980-2006, Michigan Residents .....	20
Figure 3    Three-year Average Infant Death Rates by Cause, 1980-2006, Michigan Residents .....	21
<b>Three-year Moving Averages by Region</b>	
Table 12-A  Three-Year Moving Average Infant Death Rates by County, Michigan Residents, 1995-2006 .....	22
Table 12-B  White Three-Year Moving Average Infant Death Rates by County Michigan Residents, 1995-2006 .....	25
Table 12-C  Black Three-Year Moving Average Infant Death Rates by County, Michigan Residents, 1995-2006 .....	28
Table 13-A  Three-Year Moving Average Infant Death Rates by District, Michigan Residents, 1995-2006 .....	29

## Table of Contents (Continued)

Table 13-B	White Three-Year Moving Average Infant Death Rates by District, Michigan Residents, 1995-2006 .....	32
Table 13-C	Black Three-Year Moving Average Infant Death Rates by District, Michigan Residents, 1995-2006 .....	35
Table 14-A	Three-Year Moving Average Infant Death Rates by City, Michigan Residents, 1995-2006 ..	36
Table 14-B	White Three-Year Moving Average Infant Death Rates by City, Michigan Residents, 1995-2006 .....	38
Table 14-C	Black Three-Year Moving Average Infant Death Rates by City, Michigan Residents, 1995-2006 .....	40

## SUMMARY OF 2006 INFANT DEATH STATISTICS

**INFANT MORTALITY:** For every 1,000 Michigan live births, approximately seven infants die before reaching their first birthday. In 2006, 940 infants under the age of one year died, resulting in an infant mortality rate of 7.4 per 1,000 live births. Michigan experienced a significant decline in infant mortality in the early 1990s; in recent years the infant mortality rates have tended to level off. (See Table 1.)

The disparity between the black infant mortality rate and the rate for white infants continues. In 2006 the white infant mortality rate was 5.4 per 1,000 live births while the black rate was 14.8 per 1,000 live births. The infant mortality rate for infants of other races was 10.1 per 1,000 live births. (See Table 2.)

The Michigan infant mortality rate continues to be higher than the national rate. The 2006 provisional infant death rate for the United States is 6.6. (See Table 7.)

**LIVE BIRTHS:** Live births increased in Michigan in 2006. Between 2005 and 2006 live births to Michigan residents increased 0.1 percent, from 127,518 in 2005 to 127,537 in 2006. Live births increased nationally from 4,112,052 in 2004 to a provisional 4,143,000 in 2005.

**CHARACTERISTICS OF NEWBORN:** Certain newborns are at higher risk of dying. In 2006, infants born with very low birth weight (less than 1,500 grams) experienced an infant death rate of 256.6 per 1,000 live births compared with a rate of 2.3 for those infants weighing 2,500 grams or more. Multiple birth infants had an infant mortality rate of 32.9 per 1,000 live births compared with the rate of 6.3 for single birth infants. The infant mortality rate was higher for male infants (8.0 per 1,000 live births) than for female infants (6.7 per 1,000 live births). (See Table 6.)

**CHARACTERISTICS OF MOTHER:** Infant death rates were the lowest for mothers aged 30-39 years old and highest for mothers less than 20 years old and 40 years old and older. Unmarried mothers had infant mortality rates nearly twice those of married mothers. Women receiving inadequate prenatal care experienced infant mortality rates almost three times as high as those women receiving adequate prenatal care. Mothers who reported smoking while pregnant had an infant death rate of 9.9 per 1,000 live births compared with a rate of 6.8 for mothers who reported not smoking during pregnancy. (See Table 6.)

**Table 1**  
**Number of Infant Deaths**  
**Live Births and Infant Death Rates**  
**Michigan Residents, 1970 - 2006**

Year	Infant Deaths	Live Births	Infant Death Rate
1970	3,492	171,667	20.3 ±0.7
1971	3,157	162,244	19.5 ±0.7
1972	2,801	146,854	19.1 ±0.7
1973	2,561	141,550	18.1 ±0.7
1974	2,387	137,414	17.4 ±0.7
1975	2,205	133,931	16.5 ±0.7
1976	1,978	131,378	15.1 ±0.7
1977	1,945	138,416	14.1 ±0.6
1978	1,931	138,802	13.9 ±0.6
1979	1,921	144,452	13.3 ±0.6
1980	1,851	145,162	12.8 ±0.6
1981	1,851	140,579	13.2 ±0.6
1982	1,672	137,950	12.1 ±0.6
1983	1,573	133,026	11.8 ±0.6
1984	1,595	135,782	11.7 ±0.6
1985	1,575	138,052	11.4 ±0.6
1986	1,565	137,626	11.4 ±0.6
1987	1,538	140,466	10.9 ±0.5
1988	1,542	139,635	11.0 ±0.5
1989	1,645	148,164	11.1 ±0.5
1990	1,638	153,080	10.7 ±0.5
1991	1,554	149,478	10.4 ±0.5
1992	1,460	143,827	10.2 ±0.5
1993	1,319	139,560	9.5 ±0.5
1994	1,184	137,844	8.6 ±0.5
1995	1,110	134,169	8.3 ±0.5

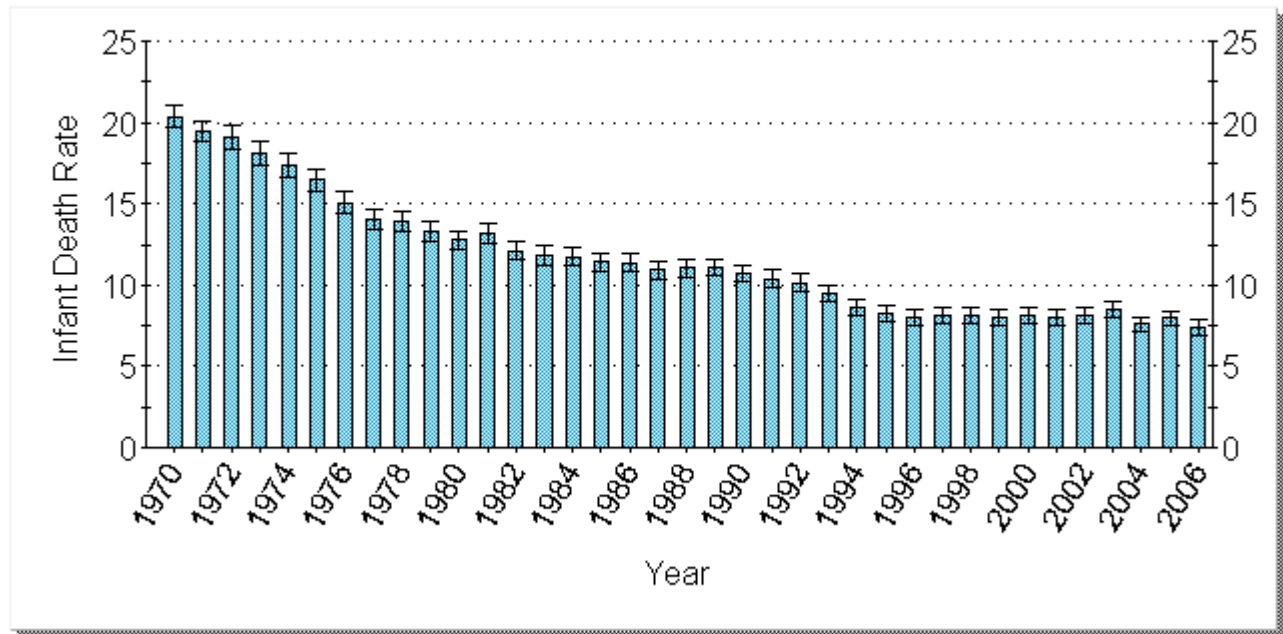
**Table 1**  
**Number of Infant Deaths**  
**Live Births and Infant Death Rates**  
**Michigan Residents, 1970 - 2006**  
**(Continued)**

Year	Infant Deaths	Live Births	Infant Death Rate
1996	1,072	133,231	8.0 ±0.5
1997	1,085	133,549	8.1 ±0.5
1998	1,091	133,649	8.2 ±0.5
1999	1,071	133,429	8.0 ±0.5
2000	1,112	136,048	8.2 ±0.5
2001	1,066	133,247	8.0 ±0.5
2002	1,054	129,518	8.1 ±0.5
2003	1,112	130,850	8.5 ±0.5
2004	984	129,710	7.6 ±0.5
2005	1,013	127,518	7.9 ±0.5
2006	940	127,537	7.4 ±0.5

**Note:** Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

**Source:** 1970 - 2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Figure 1**  
**Infant Death Rates, Michigan Residents, 1970-2006**



**Note:** Rates are per 1,000 live births. The range indicated on each bar represents a 95% confidence interval; this means that the true rate lies between the lower and upper bounds of the interval with 95% statistical confidence.

**Source:** 1970-2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Table 2**  
**Number of Infant Deaths, Live Births and Infant Death Rates By Race**  
**Michigan Residents, 1970 - 2006**

Year	White			Black			Other		
	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate
1970	2,661	144,159	18.5 ±0.7	811	26,513	30.6 ±2.1	14	871	16.1 ±8.4
1971	2,293	134,486	17.1 ±0.7	843	26,755	31.5 ±2.1	17	890	19.1 ±9.0
1972	1,957	120,042	16.3 ±0.7	835	25,760	32.4 ±2.2	8	936	8.5 ±5.9
1973	1,749	115,150	15.2 ±0.7	796	25,252	31.5 ±2.2	11	926	11.9 ±7.0
1974	1,673	112,768	14.8 ±0.7	705	22,836	30.9 ±2.2	7	950	7.4 ±5.4
1975	1,574	110,058	14.3 ±0.7	616	22,692	27.1 ±2.1	8	951	8.4 ±5.8
1976	1,383	108,295	12.8 ±0.7	575	21,778	26.4 ±2.1	16	1,100	14.5 ±7.1
1977	1,373	114,511	12.0 ±0.6	559	22,620	24.7 ±2.0	8	1,059	7.6 ±5.2
1978	1,344	114,652	11.7 ±0.6	566	22,423	25.2 ±2.1	13	1,507	8.6 ±4.7
1979	1,352	119,218	11.3 ±0.6	550	23,346	23.6 ±1.9	12	1,622	7.4 ±4.2
1980	1,246	119,698	10.4 ±0.6	582	23,422	24.8 ±2.0	15	1,825	8.2 ±4.1
1981	1,261	116,596	10.8 ±0.6	564	22,002	25.6 ±2.1	18	1,847	9.7 ±4.5
1982	1,110	114,465	9.7 ±0.6	548	21,574	25.4 ±2.1	13	1,797	7.2 ±3.9
1983	1,048	109,892	9.5 ±0.6	506	21,295	23.8 ±2.0	15	1,721	8.7 ±4.4
1984	1,034	111,574	9.3 ±0.6	541	22,322	24.2 ±2.0	15	1,792	8.4 ±4.2
1985	1,053	114,150	9.2 ±0.6	510	21,935	23.3 ±2.0	11	1,820	6.0 ±3.6
1986	999	112,255	8.9 ±0.5	553	23,366	23.7 ±1.9	12	1,927	6.2 ±3.5
1987	953	113,386	8.4 ±0.5	567	24,975	22.7 ±1.8	17	1,992	8.5 ±4.0
1988	952	112,232	8.5 ±0.5	570	25,217	22.6 ±1.8	19	2,093	9.1 ±4.1
1989	946	115,186	8.2 ±0.5	672	29,839	22.5 ±1.7	23	2,525	9.1 ±3.7
1990	930	118,180	7.9 ±0.5	689	31,842	21.6 ±1.6	18	2,623	6.9 ±3.2
1991	857	114,983	7.5 ±0.5	683	31,543	21.7 ±1.6	13	2,522	5.2 ±2.8
1992	781	111,458	7.0 ±0.5	656	29,656	22.1 ±1.7	23	2,223	10.3 ±4.2
1993	770	108,329	7.1 ±0.5	530	28,249	18.8 ±1.6	17	2,418	7.0 ±3.3
1994	670	106,828	6.3 ±0.5	495	27,129	18.2 ±1.6	19	3,137	6.1 ±2.7
1995	655	105,274	6.2 ±0.5	432	24,914	17.3 ±1.6	19	3,124	6.1 ±2.7
1996	627	104,922	6.0 ±0.5	421	24,073	17.5 ±1.7	21	3,307	6.4 ±2.7
1997	640	104,980	6.1 ±0.5	425	24,201	17.6 ±1.7	17	3,628	4.7 ±2.2
1998	660	105,161	6.3 ±0.5	405	24,179	16.8 ±1.6	23	3,833	6.0 ±2.4
1999	616	104,493	5.9 ±0.5	428	23,850	17.9 ±1.7	19	4,210	4.5 ±2.0



**Table 2**  
**Number of Infant Deaths, Live Births and Infant Death Rates By Race**  
**Michigan Residents, 1970 - 2006**  
**(Continued)**

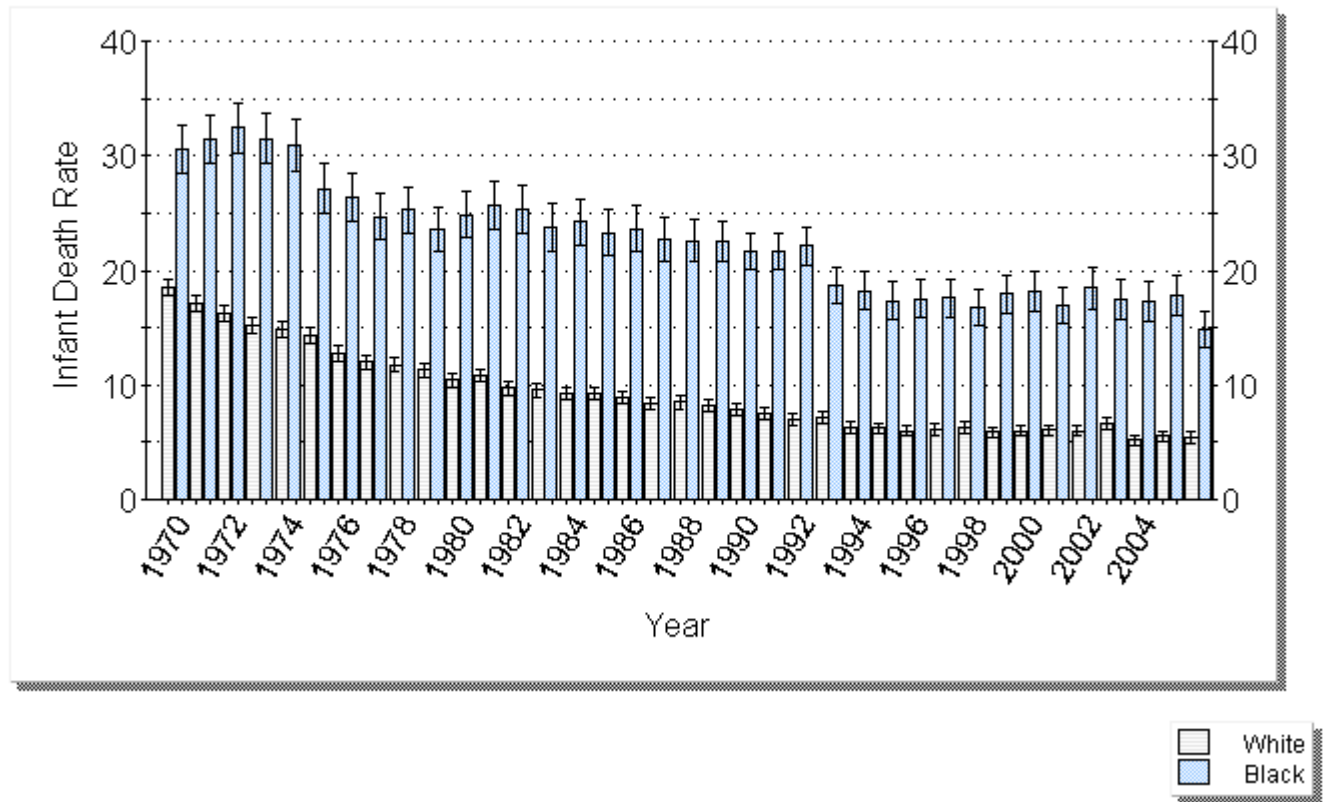
Year	White			Black			Other		
	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate	Infant Deaths	Live Births	Infant Death Rate
2000	637	106,322	6.0 ±0.5	437	24,069	18.2 ±1.7	30	4,525	6.6 ±2.4
2001	635	104,489	6.1 ±0.5	398	23,494	16.9 ±1.7	25	4,752	5.3 ±2.1
2002	611	101,611	6.0 ±0.5	410	22,248	18.4 ±1.8	21	5,056	4.2 ±1.8
2003	680	102,146	6.7 ±0.5	391	22,380	17.5 ±1.7	37	5,508	6.7 ±2.2
2004	527	100,795	5.2 ±0.4	388	22,484	17.3 ±1.7	61	5,719	10.7 ±2.7
2005	549	99,117	5.5 ±0.5	400	22,365	17.9 ±1.7	62	5,461	11.4 ±2.8
2006	534	98,551	5.4 ±0.5	339	22,873	14.8 ±1.6	60	5,636	10.6 ±2.7

**Note:** Infant deaths by race of infant; live births used in calculating infant death rates are by race of mother. Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

Infant deaths of unknown race are not included in this table.

**Source:** 1970 - 2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Figure 2**  
**Comparison of White and Black Infant Death Rates for Michigan Residents, 1970-2006**



**Note:** Rates are per 1,000 live births. The range indicated on each bar represents a 95% confidence interval; this means that the true rate lies between the lower and upper bounds of the interval with 95% statistical confidence.

**Source:** 1970- 2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Table 3**  
**Number of Infant Deaths, Live Births and Infant Death Rates by**  
**Michigan and Michigan County of Residence,**  
**2006 and 2002 - 2006 Average**

County of Residence	2006			2002 - 2006		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
MICHIGAN	940	127,537	7.4 ±0.5	1,020.6	129,026.6	7.9 ±0.2
Alcona	1	86	*	1.4	74.8	18.7 ±13.7
Alger	-	75	-	0.6	79.0	*
Allegan	8	1,594	5.0 ±3.5	10.2	1,499.0	6.8 ±1.9
Alpena	4	303	*	1.2	287.0	4.2 ±3.3
Antrim	2	259	*	1.2	249.2	4.8 ±3.8
Arenac	1	174	*	1.0	173.6	*
Baraga	-	84	-	0.6	92.6	*
Barry	7	736	9.5 ±7.0	3.4	710.6	4.8 ±2.3
Bay	12	1,251	9.6 ±5.4	7.8	1,255.6	6.2 ±1.9
Benzie	2	220	*	1.8	203.6	8.8 ±5.8
Berrien	17	2,123	8.0 ±3.8	16.4	2,082.6	7.9 ±1.7
Branch	2	629	*	5.0	605.2	8.3 ±3.2
Calhoun	17	1,797	9.5 ±4.5	16.8	1,863.0	9.0 ±1.9
Cass	3	534	*	5.0	516.8	9.7 ±3.8
Charlevoix	1	280	*	1.0	287.6	*
Cheboygan	1	261	*	1.0	271.0	*
Chippewa	4	411	*	2.8	386.8	7.2 ±3.8
Clare	3	375	*	3.2	339.6	9.4 ±4.6
Clinton	3	844	*	4.4	826.2	5.3 ±2.2
Crawford	2	151	*	1.2	135.2	8.9 ±7.1
Delta	1	410	*	2.6	404.6	6.4 ±3.5
Dickinson	4	274	*	1.6	277.4	5.8 ±4.0
Eaton	6	1,121	5.4 ±4.3	6.0	1,191.0	5.0 ±1.8
Emmet	-	384	-	1.8	371.6	4.8 ±3.2
Genesee	61	6,075	10.0 ±2.5	68.6	6,146.2	11.2 ±1.2
Gladwin	-	248	-	2.4	261.2	9.2 ±5.2
Gogebic	2	150	*	0.6	133.4	*
Gd. Traverse	6	1,008	6.0 ±4.7	5.6	969.2	5.8 ±2.1
Gratiot	5	468	*	3.2	484.8	6.6 ±3.2
Hillsdale	7	567	12.3 ±9.1	2.6	582.8	4.5 ±2.4

**Table 3**  
**Number of Infant Deaths, Live Births and Infant Death Rates by**  
**Michigan and Michigan County of Residence,**  
**2006 and 2002 - 2006 Average**  
**(Continued)**

County of Residence	2006			2002 - 2006		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Houghton	2	420	*	2.4	395.0	6.1 ±3.4
Huron	3	335	*	1.6	337.2	4.7 ±3.3
Ingham	18	3,639	4.9 ±2.3	25.4	3,648.4	7.0 ±1.2
Ionia	3	887	*	4.0	848.4	4.7 ±2.1
Iosco	1	219	*	1.0	225.4	*
Iron	-	77	-	0.2	91.0	*
Isabella	6	753	8.0 ±6.4	6.2	726.2	8.5 ±3.0
Jackson	17	2,006	8.5 ±4.0	17.2	2,061.4	8.3 ±1.8
Kalamazoo	17	3,109	5.5 ±2.6	24.4	3,111.8	7.8 ±1.4
Kalkaska	-	200	-	1.8	217.2	8.3 ±5.4
Kent	84	9,393	8.9 ±1.9	77.8	9,315.8	8.4 ±0.8
Keweenaw	1	13	*	0.4	18.6	*
Lake	1	116	*	1.6	114.2	14.0 ±9.6
Lapeer	7	926	7.6 ±5.6	4.6	1,016.0	4.5 ±1.8
Leelanau	-	164	-	2.0	187.6	10.7 ±6.6
Lenawee	10	1,272	7.9 ±4.9	5.8	1,243.0	4.7 ±1.7
Livingston	7	1,931	3.6 ±2.7	9.0	1,986.8	4.5 ±1.3
Luce	2	49	*	0.8	59.4	*
Mackinac	1	109	*	0.8	108.0	*
Macomb	51	10,128	5.0 ±1.4	56.2	10,105.8	5.6 ±0.6
Manistee	1	227	*	2.8	246.4	11.4 ±5.9
Marquette	4	636	*	2.6	621.0	4.2 ±2.3
Mason	4	350	*	1.8	317.8	5.7 ±3.7
Mecosta	2	449	*	3.2	460.6	6.9 ±3.4
Menominee	-	229	-	0.6	236.8	*
Midland	8	892	9.0 ±6.2	7.0	951.2	7.4 ±2.4
Missaukee	-	182	-	1.0	171.6	*
Monroe	15	1,785	8.4 ±4.2	11.6	1,732.0	6.7 ±1.7
Montcalm	4	838	*	5.0	834.0	6.0 ±2.3
Montmorency	1	98	*	0.2	85.8	*

**Table 3**  
**Number of Infant Deaths, Live Births and Infant Death Rates by**  
**Michigan and Michigan County of Residence,**  
**2006 and 2002 - 2006 Average**  
**(Continued)**

County of Residence	2006			2002 - 2006		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Muskegon	13	2,367	5.5 ±3.0	17.2	2,344.2	7.3 ±1.5
Newaygo	4	661	*	3.4	629.6	5.4 ±2.6
Oakland	91	14,387	6.3 ±1.3	98.0	14,989.6	6.5 ±0.6
Oceana	2	377	*	3.6	383.6	9.4 ±4.3
Ogemaw	-	190	-	0.6	206.4	*
Ontonagon	1	49	*	0.4	49.4	*
Osceola	2	308	*	2.4	308.0	7.8 ±4.4
Oscoda	-	95	-	0.4	89.0	*
Otsego	2	288	*	1.2	285.4	4.2 ±3.4
Ottawa	22	3,531	6.2 ±2.6	20.2	3,523.8	5.7 ±1.1
Presque Isle	1	112	*	0.8	120.2	*
Roscommon	-	158	-	1.6	195.8	8.2 ±5.6
Saginaw	18	2,550	7.1 ±3.2	23.0	2,631.2	8.7 ±1.6
St. Clair	13	2,012	6.5 ±3.5	15.2	2,051.6	7.4 ±1.7
St. Joseph	9	937	9.6 ±6.2	7.0	938.4	7.5 ±2.5
Sanilac	4	474	*	2.4	524.2	4.6 ±2.6
Schoolcraft	1	59	*	0.6	73.6	*
Shiawasee	2	863	*	7.6	873.2	8.7 ±2.8
Tuscola	5	635	*	5.8	663.8	8.7 ±3.2
Van Buren	1	1,041	*	7.0	1,030.8	6.8 ±2.2
Washtenaw	23	4,267	5.4 ±2.2	25.8	4,227.8	6.1 ±1.0
Wayne	273	27,383	10.0 ±1.2	313.8	28,221.2	11.1 ±0.5
Wexford	1	431	*	2.2	411.6	5.3 ±3.2
Unknown	-	38	-	-	18.6	-

Note: Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

Source: 2002 - 2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Table 4**  
**Number of Infant Deaths, Live Births and Infant Death Rates for**  
**Selected Cities of Residence, 2006 and 2002 - 2006 Average**

City of Residence	2006			2002 - 2006		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Ann Arbor	8	1,318	6.1 ±4.2	7.4	1,383.0	5.4 ±1.7
Battle Creek	12	1,154	10.4 ±5.9	7.4	1,187.0	6.2 ±2.0
Dearborn	13	1,846	7.0 ±3.8	9.2	1,876.2	4.9 ±1.4
Dearborn Heights	4	735	*	4.0	727.6	5.5 ±2.4
Detroit	175	13,016	13.4 ±2.0	213.2	13,646.4	15.6 ±0.9
East Lansing	-	258	-	1.2	297.2	4.0 ±3.2
Farmington Hills	5	801	*	6.4	908.4	7.0 ±2.4
Flint	28	2,304	12.2 ±4.5	35.8	2,443.8	14.6 ±2.1
Grand Rapids	45	3,710	12.1 ±3.5	37.6	3,756.8	10.0 ±1.4
Kalamazoo	6	1,381	4.3 ±3.5	12.8	1,380.4	9.3 ±2.3
Lansing	16	2,180	7.3 ±3.6	18.0	2,257.6	8.0 ±1.6
Lincoln Park	2	551	*	4.2	545.0	7.7 ±3.3
Livonia	3	906	*	6.2	945.4	6.6 ±2.3
Muskegon	4	1,014	*	8.2	920.4	8.9 ±2.7
Pontiac	16	1,293	12.4 ±6.0	16.6	1,262.4	13.1 ±2.8
Portage	2	667	*	2.8	604.2	4.6 ±2.4
Rochester Hills	5	791	*	4.4	789.8	5.6 ±2.3
Roseville	5	639	*	3.6	630.2	5.7 ±2.6
Royal Oak	4	758	*	3.6	746.6	4.8 ±2.2
Saginaw	11	1,082	10.2 ±6.0	14.4	1,147.4	12.6 ±2.9
Southfield	8	806	9.9 ±6.8	9.4	838.4	11.2 ±3.2
St. Clair Shores	2	627	*	3.4	611.0	5.6 ±2.6
Sterling Heights	6	1,521	3.9 ±3.2	7.4	1,535.6	4.8 ±1.5
Taylor	10	837	11.9 ±7.4	8.8	868.2	10.1 ±3.0
Troy	4	801	*	3.2	843.2	3.8 ±1.9
Warren	11	1,719	6.4 ±3.8	12.0	1,695.2	7.1 ±1.8
Westland	7	1,108	6.3 ±4.7	7.2	1,141.8	6.3 ±2.1
Wyoming	15	1,289	11.6 ±5.9	9.2	1,234.8	7.5 ±2.1

**Note:** Cities with greater than 40,000 population based upon the 1990 Census. Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

**\*** A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

**Source:** 2002 - 2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Table 5**  
**Number and Rate of Infant Deaths by Race for**  
**Residents of Michigan, Detroit City, Wayne County (Excluding Detroit City)**  
**and Michigan (Excluding Wayne County), 1990- 2006**

Year	Race	Michigan		Detroit City		Wayne County (excluding Detroit)		Michigan (excluding Wayne County)	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
1990	Total	1,638	10.7 ±0.5	491	20.3 ±1.8	170	10.3 ±1.5	977	8.7 ±0.5
	White	930	7.9 ±0.5	36	8.7 ±2.8	130	8.8 ±1.5	764	7.7 ±0.5
	Black	689	21.6 ±1.6	451	23.0 ±2.1	38	24.8 ±7.8	200	18.7 ±2.6
1991	Total	1,554	10.4 ±0.5	456	19.4 ±1.8	139	8.4 ±1.4	959	8.8 ±0.6
	White	857	7.5 ±0.5	39	10.0 ±3.1	103	7.1 ±1.4	715	7.4 ±0.5
	Black	683	21.7 ±1.6	417	21.6 ±2.1	34	20.3 ±6.7	232	21.9 ±2.8
1992	Total	1,460	10.2 ±0.5	462	21.4 ±1.9	128	8.1 ±1.4	870	8.2 ±0.5
	White	781	7.0 ±0.5	43	12.3 ±3.7	92	6.6 ±1.4	646	6.9 ±0.5
	Black	656	22.1 ±1.7	415	23.3 ±2.2	34	21.8 ±7.2	207	20.1 ±2.7
1993	Total	1,319	9.5 ±0.5	348	17.2 ±1.8	111	7.1 ±1.3	860	8.3 ±0.6
	White	770	7.1 ±0.5	28	9.1 ±3.3	88	6.4 ±1.3	654	7.2 ±0.5
	Black	530	18.8 ±1.6	317	18.7 ±2.0	21	14.4 ±6.1	192	19.4 ±2.7
1994	Total	1,184	8.6 ±0.5	322	16.6 ±1.8	105	6.8 ±1.3	757	7.3 ±0.5
	White	670	6.3 ±0.5	28	9.4 ±3.5	69	5.1 ±1.2	573	6.3 ±0.5
	Black	495	18.2 ±1.6	293	18.2 ±2.1	35	23.7 ±7.7	167	17.5 ±2.6
1995	Total	1,110	8.3 ±0.5	274	15.6 ±1.8	89	5.8 ±1.2	747	7.4 ±0.5
	White	655	6.2 ±0.5	17	6.0 ±2.8	64	4.8 ±1.2	574	6.4 ±0.5
	Black	432	17.3 ±1.6	254	17.6 ±2.1	25	18.2 ±7.1	153	16.8 ±2.6
1996	Total	1,072	8.0 ±0.5	248	15.0 ±1.8	101	6.7 ±1.3	723	7.1 ±0.5
	White	627	6.0 ±0.5	9	3.4 ±2.2	74	5.6 ±1.3	544	6.1 ±0.5
	Black	421	17.5 ±1.7	238	17.5 ±2.2	23	16.2 ±6.6	160	17.7 ±2.7
1997	Total	1,085	8.1 ±0.5	253	15.1 ±1.8	100	6.6 ±1.3	732	7.2 ±0.5
	White	640	6.1 ±0.5	23	8.6 ±3.5	76	5.8 ±1.3	541	6.1 ±0.5
	Black	425	17.6 ±1.7	229	16.7 ±2.1	23	16.5 ±6.7	173	19.1 ±2.8
1998	Total	1,091	8.2 ±0.5	241	14.7 ±1.8	99	6.6 ±1.3	751	7.4 ±0.5
	White	660	6.3 ±0.5	15	5.8 ±2.9	74	5.7 ±1.3	571	6.4 ±0.5
	Black	405	16.8 ±1.6	219	16.1 ±2.1	22	14.9 ±6.2	164	18.0 ±2.7
1999	Total	1,071	8.0 ±0.5	245	15.5 ±1.9	97	6.4 ±1.3	729	7.1 ±0.5
	White	616	5.9 ±0.5	15	5.6 ±2.8	72	5.6 ±1.3	529	5.9 ±0.5
	Black	428	17.9 ±1.7	228	17.8 ±2.3	23	15.1 ±6.1	177	18.6 ±2.7

**Table 5**  
**Number and Rate of Infant Deaths by Race for**  
**Residents of Michigan, Detroit City, Wayne County (Excluding Detroit City)**  
**and Michigan (Excluding Wayne County), 1990- 2006**  
**(Continued)**

Year	Race	Michigan		Detroit City		Wayne County (excluding Detroit)		Michigan (excluding Wayne County)	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
2000	Total	1,112	8.2 ±0.5	233	14.7 ±1.9	100	6.6 ±1.3	779	7.4 ±0.5
	White	637	6.0 ±0.5	20	7.4 ±3.2	66	5.1 ±1.2	551	6.1 ±0.5
	Black	437	18.2 ±1.7	207	16.2 ±2.2	33	20.3 ±6.9	197	20.5 ±2.8
2001	Total	1,066	8.0 ±0.5	214	14.0 ±1.9	77	5.1 ±1.1	775	7.5 ±0.5
	White	635	6.1 ±0.5	14	5.2 ±2.7	58	4.5 ±1.2	563	6.3 ±0.5
	Black	398	16.9 ±1.7	199	16.1 ±2.2	17	10.8 ±5.1	182	19.0 ±2.7
2002	Total	1,054	8.1 ±0.5	240	16.7 ±2.1	103	6.9 ±1.3	711	7.1 ±0.5
	White	611	6.0 ±0.5	19	7.4 ±3.3	71	5.8 ±1.3	521	6.0 ±0.5
	Black	410	18.4 ±1.8	219	19.1 ±2.5	27	16.8 ±6.3	164	17.8 ±2.7
2003	Total	1,112	8.5 ±0.5	230	16.3 ±2.1	119	8.1 ±1.4	763	7.5 ±0.5
	White	680	6.7 ±0.5	28	11.5 ±4.2	86	7.1 ±1.5	566	6.5 ±0.5
	Black	391	17.5 ±1.7	202	18.1 ±2.5	27	16.0 ±6.0	162	17.0 ±2.6
2004	Total	984	7.6 ±0.5	211	15.5 ±2.1	90	6.1 ±1.3	683	6.7 ±0.5
	White	527	5.2 ±0.4	12	5.0 ±2.8	55	4.7 ±1.2	460	5.3 ±0.5
	Black	388	17.3 ±1.7	193	17.8 ±2.5	30	16.1 ±5.7	165	16.9 ±2.6
2005	Total	1,013	7.9 ±0.5	210	15.9 ±2.1	93	6.5 ±1.3	710	7.1 ±0.5
	White	549	5.5 ±0.5	13	5.6 ±3.1	58	5.1 ±1.3	478	5.6 ±0.5
	Black	400	17.9 ±1.7	188	17.9 ±2.5	34	17.6 ±5.9	178	18.0 ±2.6
2006	Total	940	7.4 ±0.5	175	13.4 ±2.0	98	6.8 ±1.3	667	6.7 ±0.5
	White	534	5.4 ±0.5	8	3.5 ±2.4	62	5.6 ±1.4	464	5.5 ±0.5
	Black	339	14.8 ±1.6	154	14.9 ±2.3	30	13.7 ±4.9	155	15.0 ±2.3

**Note:** Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

**Source:** 1990- 2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health.



**Table 6**  
**Number of Infant Deaths, Live Births and Infant Death Rates**  
**by Selected Characteristics of Newborn and of Mother**  
**for Michigan Residents, 2006**

<b>Characteristics of Newborn</b>	<b>Infant Deaths</b>	<b>Live Births</b>	<b>Infant Death Rate</b>
<b>Sex of Infant</b>	940	127,537	7.4 ±0.5
Male	519	65,129	8.0 ±0.7
Female	421	62,406	6.7 ±0.6
<b>Birthweight</b>	940	127,537	7.4 ±0.5
1,499 Grams or Less	536	2,090	256.5 ±19.1
1,500 - 2,499 Grams	123	8,630	14.3 ±2.5
2,500 Grams or More	274	116,791	2.3 ±0.3
<b>Plurality</b>	940	127,537	7.4 ±0.5
Single Birth	776	122,796	6.3 ±0.4
Multiple Birth	156	4,735	32.9 ±5.1
<b>Characteristics of Mother</b>	<b>Infant Deaths</b>	<b>Live Births</b>	<b>Infant Death Rate</b>
<b>Age of Mother</b>	940	127,537	7.4 ±0.5
< 20	136	12,493	10.9 ±1.8
20 - 29	483	68,255	7.1 ±0.6
30 - 39	278	43,868	6.3 ±0.7
40 +	36	2,904	12.4 ±4.0
<b>Marital Status</b>	940	127,537	7.4 ±0.5
Married	426	78,927	5.4 ±0.5
Unmarried	507	48,610	10.4 ±0.9
<b>Level of Prenatal Care</b>	940	127,537	7.4 ±0.5
Adequate	600	99,100	6.1 ±0.5
Intermediate	179	18,983	9.4 ±1.4
Inadequate	148	8,129	18.2 ±2.9
<b>Smoked During Pregnancy</b>	940	127,537	7.4 ±0.5
No	741	109,535	6.8 ±0.5
Yes	173	17,542	9.9 ±1.5

**Note:** Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence. Records with selected characteristics unknown are included in total only. Level of prenatal care is according to the Kessner Index which is a classification of prenatal care based on the month of pregnancy in which prenatal care began, the number of prenatal visits and the length of pregnancy (i.e. for shorter pregnancies, fewer prenatal visits constitute adequate care.)

**Source:** 2006 Michigan Resident Birth-Death Matched File, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Table 7**  
**Number and Rate of Infant Deaths by Race,**  
**Michigan and United States Residents, 1989 - 2006**

Year	United States						Michigan					
	All Races		White		Black		All Races		White		Black	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1989	39,655	9.8	25,794	8.0	12,527	18.6	1,645	11.1	946	8.2	672	22.5
1990	38,351	9.2	24,883	7.6	12,290	18.0	1,638	10.7	930	7.9	689	21.6
1991	36,766	8.9	23,657	7.3	11,994	17.6	1,554	10.4	857	7.5	683	21.7
1992	34,628	8.5	22,164	6.9	11,348	16.8	1,460	10.2	781	7.0	656	22.1
1993	33,466	8.4	21,497	6.8	10,887	16.5	1,319	9.5	770	7.1	530	18.8
1994	31,710	8.0	20,504	6.6	10,072	15.8	1,184	8.6	670	6.3	495	18.2
1995	29,583	7.6	19,490	6.3	9,118	15.1	1,110	8.3	655	6.2	432	17.3
1996	28,487	7.3	18,761	6.1	8,730	14.7	1,072	8.0	627	6.0	421	17.5
1997	28,045	7.2	18,539	6.0	8,496	14.2	1,085	8.1	640	6.1	425	17.6
1998	28,371	7.2	18,561	6.0	8,726	14.3	1,091	8.2	660	6.3	405	16.8
1999	27,953	7.1	18,069	5.8	8,832	14.6	1,071	8.0	616	5.9	428	17.9
2000	28,035	6.9	18,144	5.7	8,771	14.0	1,112	8.2	637	6.0	437	18.2
2001	27,568	6.8	17,955	5.7	8,498	14.0	1,066	8.0	635	6.1	398	16.9
2002	28,034	7.0	18,369	5.8	8,524	14.4	1,054	8.1	611	6.0	410	18.4
2003	28,025	6.9	18,440	5.7	8,402	14.0	1,112	8.5	680	6.7	391	17.5
2004	27,936	6.8	18,231	5.7	8,494	13.3	984	7.6	527	5.2	388	17.3
2005	28,000	6.8	---	---	---	---	1,013	7.9	549	5.5	400	17.9
2006	28,100	6.6	---	---	---	---	940	7.4	534	5.4	339	14.8

**Note:** Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

The United States data for 2005 and 2006 is provisional.

---: Data not available.

**Source:** 1989 - 2006 Michigan Resident Birth and Death Files, Vital Records & Health Data Development Section, Michigan Department of Community Health. National Vital Statistics Reports, "Deaths: Final Data For 2003", Vol 54, No. 13, April 19, 2006; and National Vital Statistics Reports, "Deaths: Final Data for 2004", Vol 55, No. 19, August 21, 2007; National Vital Statistics Reports, "Births, Marriages, Divorces, and Deaths: Provisional Data for 2006", Vol 55, No. 20, August 28, 2007; and National Center for Health Statistics, historical data (<http://www.cdc.gov/nchs/deaths.htm>).

**Table 8**  
**Number of Hispanic and Arabic Infant Deaths by Selected County and Michigan**  
**Michigan Residents, 2000 - 2006**

**Hispanic Infant Deaths**

County	2000	2001	2002	2003	2004	2005	2006
Michigan	46	53	59	73	78	96	94
Hispanic Infant Death Rates	6.6	7.2	8.2	9.6	10.0	11.4	10.4
Allegan	3	2	-	2	1	2	2
Genesee	1	-	4	3	4	3	5
Ingham	2	1	5	5	4	4	2
Kalamazoo	2	2	1	1	-	4	2
Kent	13	11	14	13	14	14	27
Lenawee	1	2	-	-	1	-	1
Macomb	2	3	-	3	1	1	3
Muskegon	2	2	1	1	3	1	1
Oakland	2	4	3	5	7	13	7
Ottawa	4	5	4	2	3	4	4
Saginaw	-	-	-	2	1	3	3
Van Buren	1	1	1	1	2	7	-
Washtenaw	-	-	-	1	1	2	2
Wayne	5	7	13	22	17	14	15
All Other Counties	8	13	13	12	19	24	20

**Table 8**  
**Number of Hispanic and Arabic Infant Deaths by Selected County and Michigan**  
**Michigan Residents, 2000 - 2006 (Continued)**

**Arabic Infant Deaths**

County	2000	2001	2002	2003	2004	2005	2006
Michigan	20	18	22	19	12	24	31
Arabic Infant Death Rates	5.9	4.8	5.7	5.1	3.3	6.3	7.6
Macomb	2	1	7	3	2	2	5
Oakland	1	3	1	2	1	5	3
Wayne	12	11	13	13	5	13	22
All Other Counties	5	3	1	1	4	4	1

**Note:** The increase in hispanic mortality incidence reflects a change in death certificate reporting. Michigan's death certificate was revised in 2003 to comply with a change in the National Standard death certificate and a separate indicator of hispanic ancestry was introduced. In 2005, the hispanic ancestry indicator was used in tabulations for the first time, resulting in the identification of hispanic deaths that might otherwise have been missed. The increase in hispanic death cases between 2004 and 2005 should not be considered as a change in trend.

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

**Source:** 2006 Michigan Resident Infant Death File, Vital Records & Health Data Development Section, Michigan Department of Community Health.

**Table 9**  
**Infant, Hebdomadal, Fetal and Perinatal Death Rates**  
**by Specified Race and Ancestry**  
**Michigan Residents, 2006**

Race/Ancestry	Live Births	Infant Deaths		Hebdomadal Deaths		Fetal Deaths		Perinatal Deaths	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Races	127,537	940	7.4 ±0.5	528	4.1 ±0.4	751	5.9 ±0.4	1,279	10.0 ±0.5
White	98,551	534	5.4 ±0.5	292	3.0 ±0.3	444	4.5 ±0.4	736	7.4 ±0.5
Black	22,873	339	14.8 ±1.6	194	8.5 ±1.2	241	10.4 ±1.3	435	18.8 ±1.8
American Indian	726	8	11.0 ±7.6	4	*	4	*	8	11.0 ±7.6
Asian and Pacific Islander	4,645	15	3.2 ±1.6	13	2.8 ±1.5	8	1.7 ±1.2	21	4.5 ±1.9
Arabic	4,061	31	7.6 ±2.7	17	4.2 ±2.0	23	5.6 ±2.3	40	9.8 ±3.0
Hispanic	9,079	94	10.4 ±2.1	50	5.5 ±1.5	47	5.2 ±1.5	97	10.6 ±2.1

**Note:** Hebdomadal deaths are deaths to infants ages zero to six days. Perinatal deaths are hebdomadal plus fetal deaths.

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. 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 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 standards of precision or reliability.

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

**Source:** 2006 Michigan Resident Infant Death File, 2006 Michigan Fetal Death Registry  
Vital Records & Health Data Development Section, Michigan Department of Community Health.

**Table 10**  
**Number of Infant Deaths by Cause of Death,**  
**1980-2006, Michigan Residents**

Causes of Death	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005	2006
All Causes	2,280	1,575	1,638	1,110	1,112	1,066	1,054	1,112	984	1,013	940
Certain gastrointestinal diseases	7	6	6	6	10	6	9	16	11	12	11
Septicemia	8	6	17	2	5	7	8	10	2	10	3
Remainder of infectious and parasitic diseases	5	11	18	12	7	7	7	5	5	6	10
Meningitis	13	7	11	2	3	-	2	4	1	3	4
Pneumonia and Influenza	27	11	26	20	20	13	9	10	10	6	8
Congenital anomalies	321	330	300	204	192	174	186	200	184	197	185
Newborn affected by maternal complications of pregnancy	72	52	108	47	45	64	119	90	73	67	72
Newborn affected by complications of placenta, cord and membranes	50	34	24	33	36	38	23	27	21	28	26
Disorders relating to short gestation and unspecified low birthweight	145	150	251	219	262	247	191	225	207	219	201
Birth trauma	45	14	16	8	2	2	5	-	-	1	-
Intrauterine hypoxia and birth asphyxia	69	43	25	11	24	16	22	27	22	19	7
Respiratory distress syndrome	206	176	164	82	65	58	57	46	56	57	36
Other respiratory conditions	199	132	120	63	65	63	44	53	44	52	28
Infections specific to the perinatal period	35	32	33	23	35	43	40	34	43	42	29
Neonatal hemorrhage	38	10	8	13	28	15	7	28	27	23	16
All other and ill-define conditions originating in the perinatal period	169	168	73	47	39	46	39	55	45	46	67
Sudden infant death syndrome	260	228	257	148	99	96	85	49	51	47	51
Accidents and adverse effects	39	35	38	40	55	57	72	64	70	68	71
Homicides	7	8	17	12	13	10	10	7	8	15	9
All other causes	136	122	126	118	107	104	119	162	104	95	106

**Note:** The underlying cause of death is the condition giving rise to the chain of events leading to death. Between January 1, 1979 and December 31, 1998, the underlying causes of death were classified in accordance with the Ninth Revision of the International Classification of Diseases (ICD-9), a coding structure developed by the [World Health Organization](#). Starting January 1, 1999, causes of death were classified using the Tenth Revision of the International Classification of Diseases (ICD-10). With each revision there are differences in classifying the underlying cause of death. Therefore, health statistics based on one revision are not directly comparable to the other revision without the use of [comparability ratios](#). (See "Comparability of cause of death between ICD-9 and ICD-10: Preliminary estimates." National vital statistics reports; vol 49 no. 2. Hyattsville, Maryland: National Center for Health Statistics. 2001. )

**Source:** 1980-2006 Michigan Resident Infant Death File, Vital Records & Health Data Development Section, Michigan Department of Community Health.

**Table 11**  
**Three-year Moving Average Infant Deaths Rates per 10,000 Live Births, by Cause of Death,**  
**1980-2006, Michigan Residents**

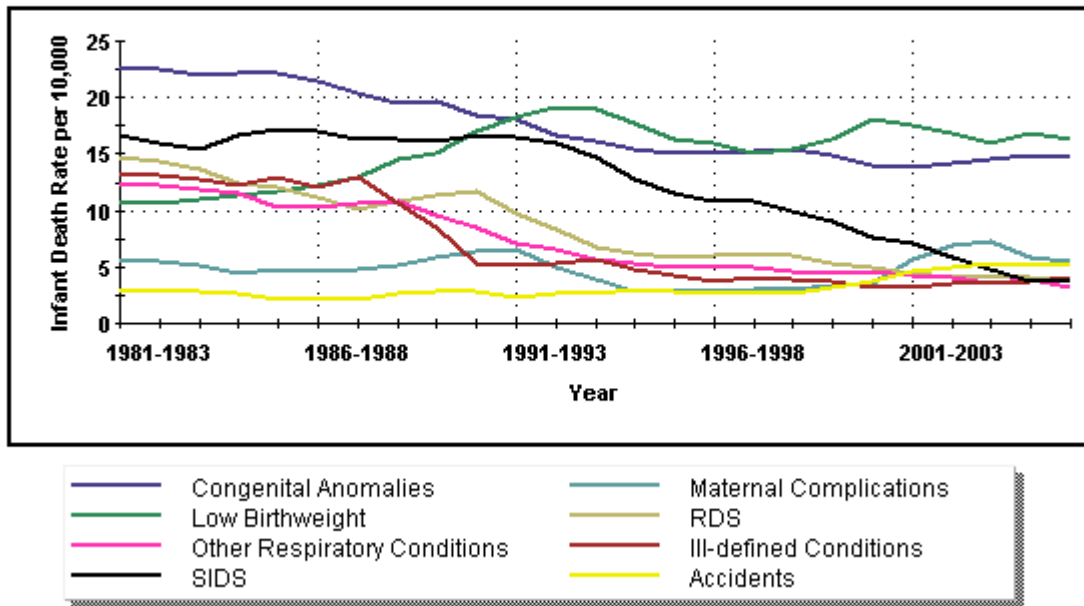
Causes of Death	1980 to 1982	1985 to 1987	1990 to 1992	1995 to 1997	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
Total Infant Deaths	126.8	112.4	104.2	81.5	81.0	82.1	80.8	80.1	76.3
Certain gastrointestinal diseases	.6	.6	.6	.6	.6	.8	.9	1.0	.9
Septicemia	.4	.5	.9	.4	.5	.6	.5	.6	.4
Remainder of infectious and parasitic diseases	.4	.8	1.1	.6	.5	.5	.4	.4	.5
Meningitis	.9	.4	.4	*	*	.2	.2	.2	.2
Pneumonia and Influenza	1.4	1.1	1.8	1.1	1.1	.8	.7	.7	.6
Congenital anomalies	22.7	21.4	18.1	15.1	13.8	14.2	14.6	15.0	14.7
Newborn affected by maternal complications of pregnancy	5.8	4.6	6.6	2.9	5.7	6.9	7.2	5.9	5.5
Newborn affected by complications of placenta, cord and membranes	3.2	2.6	2.1	2.9	2.4	2.2	1.8	2.0	1.9
Disorders relating to short gestation and unspecified low birthweight	10.6	12.2	18.2	16.0	17.6	16.8	16.0	16.8	16.3
Birth trauma	2.5	.7	.7	.4	.2	.2	*	*	*
Intrauterine hypoxia and birth asphyxia	4.5	2.4	1.6	1.2	1.6	1.7	1.8	1.8	1.2
Respiratory distress syndrome	14.8	11.2	9.7	6.1	4.5	4.1	4.1	4.1	3.9
Other respiratory conditions	12.2	10.2	7.1	5.1	4.3	4.1	3.6	3.8	3.2
Infections specific to the perinatal period	2.2	2.3	2.2	2.1	3.0	3.0	3.0	3.1	3.0
Neonatal hemorrhage	2.0	.7	.6	.8	1.3	1.3	1.6	2.0	1.7
All other and ill-define conditions originating in the perinatal period	13.3	12.1	5.1	3.7	3.1	3.6	3.6	3.8	4.1
Sudden infant death syndrome	16.6	17.1	16.6	10.8	4.3	3.4	3.7	3.8	3.7
Accidents and adverse effects	2.8	2.1	2.4	2.7	4.6	4.9	5.3	5.2	5.4
Homicides	.4	.9	.9	.9	.8	.7	.6	.8	.8
All other causes	9.7	8.6	7.6	7.9	8.3	9.8	9.9	9.3	7.9

**Note:** For purposes of comparing small values, these rates are calculated at deaths per **10,000** live births; in most Michigan Community Health infant death reports, infant deaths are per **1,000**. The underlying cause of death is the condition giving rise to the chain of events leading to death. Between January 1, 1979 and December 31, 1998, the underlying causes of death were classified in accordance with the Ninth Revision of the International Classification of Diseases (ICD-9), a coding structure developed by the [World Health Organization](#). Starting January 1, 1999, causes of death were classified using the Tenth Revision of the International Classification of Diseases (ICD-10). With each revision there are differences in classifying the underlying cause of death. Therefore, health statistics based on one revision are not directly comparable to the other revision without the use of [comparability ratios](#). (See "Comparability of cause of death between ICD-9 and ICD-10: Preliminary estimates." National vital statistics reports; vol 49 no. 2. Hyattsville, Maryland: National Center for Health Statistics. 2001. )

An asterisk (\*) indicates the rate does not meet standards of reliability or precision. A dash (-) indicates quantity zero.

**Source:** 1980-2006 Michigan Resident Infant Death File, Vital Records & Health Data Development Section, Michigan Department of Community Health.

**Figure 3**  
**Three-year Average Infant Death Rates by Cause,**  
**Michigan Residents, 1980-2006**



**Note:** For purposes of comparing small values, these rates are calculated at deaths per **10,000** live births; in most Michigan Community Health infant death reports, infant deaths are per **1,000**.

The underlying cause of death is the condition giving rise to the chain of events leading to death. Between January 1, 1979 and December 31, 1998, the underlying causes of death were classified in accordance with the Ninth Revision of the International Classification of Diseases (ICD-9), a coding structure developed by the [World Health Organization](#). Starting January 1, 1999, causes of death were classified using the Tenth Revision of the International Classification of Diseases (ICD-10). With each revision there are differences in classifying the underlying cause of death. Therefore, health statistics based on one revision are not directly comparable to the other revision without the use of [comparability ratios](#). (See "Comparability of cause of death between ICD-9 and ICD-10: Preliminary estimates." National vital statistics reports; vol 49 no. 2. Hyattsville, Maryland: National Center for Health Statistics. 2001. )

An asterisk (\*) indicates the rate does not meet standards of reliability or precision. A dash (-) indicates quantity zero.

**Source:** 1980-2006 Michigan Resident Infant Death File, Vital Records & Health Data Development Section, Michigan Department of Community Health.



**Table 12-A**  
**Three-Year Moving Average Infant Death Rates by County**  
**Michigan Residents, 1995-2006**

County	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.2 ±0.3	8.1 ±0.3	8.0 ±0.3	7.6 ±0.3
<b>Alcona</b>	-	-	-	*	*	*	*	*	*	*
<b>Alger</b>	*	*	*	*	-	*	*	*	*	-
<b>Allegan</b>	7.0 ±2.5	7.8 ±2.7	7.7 ±2.6	7.5 ±2.6	7.0 ±2.5	7.0 ±2.5	8.3 ±2.7	7.0 ±2.5	7.7 ±2.6	6.1 ±2.3
<b>Alpena</b>	6.1 ±4.9	9.1 ±5.9	12.8 ±6.9	12.9 ±7.0	9.9 ±6.1	*	*	*	*	*
<b>Antrim</b>	8.4 ±6.7	*	*	*	8.3 ±6.6	*	*	*	*	*
<b>Arenac</b>	*	*	*	*	*	*	*	*	*	*
<b>Baraga</b>	*	*	*	*	*	*	*	*	*	*
<b>Barry</b>	6.7 ±3.5	8.2 ±3.9	9.9 ±4.2	8.4 ±3.9	6.9 ±3.5	4.7 ±2.9	3.8 ±2.6	4.2 ±2.8	4.3 ±2.8	5.6 ±3.2
<b>Bay</b>	7.4 ±2.6	7.7 ±2.7	5.6 ±2.3	4.6 ±2.1	5.4 ±2.3	6.1 ±2.4	6.7 ±2.6	4.5 ±2.1	5.4 ±2.3	6.4 ±2.5
<b>Benzie</b>	*	*	*	*	*	-	*	*	11.8 ±8.7	*
<b>Berrien</b>	9.4 ±2.3	8.5 ±2.2	9.6 ±2.4	9.1 ±2.3	10.0 ±2.4	9.2 ±2.3	9.4 ±2.4	7.3 ±2.1	7.5 ±2.1	7.2 ±2.1
<b>Branch</b>	6.4 ±4.0	7.6 ±4.3	6.9 ±4.1	6.4 ±3.8	9.2 ±4.5	9.1 ±4.4	9.6 ±4.5	9.6 ±4.5	10.3 ±4.6	8.7 ±4.2
<b>Calhoun</b>	7.2 ±2.2	6.9 ±2.2	8.0 ±2.3	7.5 ±2.3	10.1 ±2.6	10.0 ±2.6	10.0 ±2.6	8.7 ±2.4	9.2 ±2.5	9.6 ±2.6
<b>Cass</b>	7.7 ±4.3	5.4 ±3.5	6.7 ±3.9	5.4 ±3.5	4.9 ±3.4	7.6 ±4.3	7.7 ±4.3	9.0 ±4.7	9.7 ±4.9	9.1 ±4.8
<b>Charlevoix</b>	8.3 ±5.7	8.1 ±5.6	8.2 ±5.6	*	*	6.7 ±5.3	*	*	*	*
<b>Cheboygan</b>	9.8 ±6.8	8.4 ±6.2	8.3 ±6.1	*	7.2 ±5.8	*	7.0 ±5.6	*	*	*
<b>Chippewa</b>	4.7 ±3.7	5.5 ±4.1	5.0 ±4.0	5.8 ±4.3	5.0 ±4.0	6.0 ±4.4	5.4 ±4.3	*	6.8 ±4.7	7.5 ±4.8
<b>Clare</b>	*	*	6.8 ±5.0	9.7 ±6.0	8.6 ±5.6	5.8 ±4.6	8.8 ±5.8	13.0 ±7.0	12.1 ±6.8	7.8 ±5.4
<b>Clinton</b>	4.6 ±2.7	2.9 ±2.2	3.8 ±2.5	4.7 ±2.8	5.7 ±3.1	6.3 ±3.2	8.0 ±3.6	6.9 ±3.3	5.7 ±3.0	3.2 ±2.2
<b>Crawford</b>	14.9 ±11.0	*	*	*	16.3 ±12.0	16.8 ±12.4	17.5 ±12.8	*	*	*
<b>Delta</b>	5.1 ±4.0	*	*	4.7 ±3.7	8.5 ±5.0	8.6 ±5.1	10.3 ±5.6	9.2 ±5.4	9.9 ±5.6	4.9 ±3.9
<b>Dickinson</b>	*	*	6.8 ±5.5	7.1 ±5.7	*	*	*	*	*	8.5 ±6.3
<b>Eaton</b>	4.4 ±2.1	4.7 ±2.2	3.1 ±1.8	4.4 ±2.2	2.4 ±1.6	4.1 ±2.0	4.0 ±2.0	5.2 ±2.3	4.5 ±2.2	4.6 ±2.3
<b>Emmet</b>	*	*	*	6.1 ±4.5	7.1 ±4.9	7.1 ±4.9	6.1 ±4.5	5.3 ±4.2	5.5 ±4.4	*
<b>Genesee</b>	12.1 ±1.5	12.2 ±1.6	12.3 ±1.6	12.1 ±1.5	11.3 ±1.5	11.5 ±1.5	11.2 ±1.5	12.3 ±1.6	10.9 ±1.5	10.5 ±1.5
<b>Gladwin</b>	12.4 ±7.6	11.2 ±7.3	13.3 ±7.8	10.3 ±6.7	11.0 ±6.8	9.3 ±6.4	10.9 ±7.1	10.2 ±7.0	11.4 ±7.4	9.0 ±6.7
<b>Gogebic</b>	12.5 ±9.9	18.6 ±12.1	21.3 ±13.0	*	*	*	-	-	*	*
<b>Grand Traverse</b>	5.7 ±2.9	5.9 ±2.9	5.5 ±2.8	5.9 ±2.8	7.0 ±3.1	7.0 ±3.0	6.4 ±2.9	5.5 ±2.7	5.5 ±2.7	6.1 ±2.8
<b>Gratiot</b>	9.5 ±4.9	10.1 ±5.1	7.9 ±4.4	7.7 ±4.4	5.9 ±3.8	6.1 ±3.9	4.2 ±3.4	7.0 ±4.3	5.4 ±3.7	7.4 ±4.4
<b>Hillsdale</b>	5.9 ±3.6	6.4 ±3.8	8.5 ±4.3	8.7 ±4.2	8.5 ±4.2	5.8 ±3.4	5.6 ±3.5	3.4 ±2.7	*	4.0 ±3.0

**Table 12-A**  
**All Three-Year Moving Average Infant Death Rates by County**  
**Michigan Residents, 1995-2006**  
**(Continued)**

County	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Houghton	5.0 ±4.0	7.1 ±4.9	7.7 ±5.0	6.8 ±4.7	*	*	5.1 ±4.1	7.7 ±5.0	5.8 ±4.3	5.0 ±4.0
Huron	6.0 ±4.4	7.7 ±5.0	*	6.0 ±4.5	7.2 ±5.0	8.3 ±5.4	*	*	*	6.1 ±4.8
Ingham	7.9 ±1.6	7.3 ±1.5	6.6 ±1.5	6.9 ±1.5	6.8 ±1.5	7.1 ±1.6	6.7 ±1.5	7.1 ±1.6	7.7 ±1.6	7.1 ±1.6
Ionia	7.4 ±3.4	5.8 ±3.0	5.4 ±2.9	5.6 ±2.9	7.7 ±3.4	8.3 ±3.5	7.3 ±3.4	5.5 ±2.9	4.4 ±2.6	3.5 ±2.3
Iosco	*	*	*	*	9.0 ±6.6	10.5 ±7.3	9.8 ±7.2	*	*	*
Iron	-	-	*	*	*	*	-	*	*	*
Isabella	5.5 ±3.4	5.3 ±3.3	5.6 ±3.3	7.3 ±3.7	9.5 ±4.1	10.3 ±4.3	11.3 ±4.5	7.9 ±3.7	8.3 ±3.8	7.6 ±3.6
Jackson	8.0 ±2.2	9.7 ±2.4	10.9 ±2.6	11.5 ±2.7	10.6 ±2.6	8.5 ±2.3	8.2 ±2.3	7.1 ±2.1	9.4 ±2.4	9.0 ±2.3
Kalamazoo	9.2 ±1.9	9.1 ±1.9	7.7 ±1.8	7.8 ±1.8	8.2 ±1.8	10.4 ±2.1	10.2 ±2.0	8.8 ±1.9	7.4 ±1.7	6.5 ±1.6
Kalkaska	*	*	*	*	*	*	*	9.1 ±7.3	8.7 ±6.9	*
Kent	8.0 ±1.1	7.6 ±1.0	7.0 ±1.0	7.7 ±1.0	8.0 ±1.0	8.4 ±1.1	8.5 ±1.1	8.6 ±1.1	8.2 ±1.1	8.0 ±1.0
Keweenaw	-	-	-	-	-	*	*	*	-	*
Lake	*	*	*	*	*	*	*	*	19.7 ±14.4	*
Lapeer	6.6 ±2.8	9.1 ±3.3	8.8 ±3.2	7.3 ±2.9	5.8 ±2.6	5.3 ±2.5	5.7 ±2.6	4.1 ±2.2	3.2 ±2.0	3.7 ±2.2
Leelanau	*	*	*	*	*	*	10.7 ±8.5	14.2 ±9.8	13.6 ±9.4	*
Lenawee	5.4 ±2.4	4.3 ±2.1	5.6 ±2.5	5.8 ±2.5	6.1 ±2.5	4.4 ±2.1	4.3 ±2.1	3.5 ±1.9	4.3 ±2.1	5.6 ±2.4
Livingston	5.6 ±2.0	5.6 ±2.0	4.8 ±1.8	5.0 ±1.8	5.1 ±1.8	4.3 ±1.6	5.2 ±1.8	4.7 ±1.7	5.3 ±1.8	3.9 ±1.6
Luce	*	*	*	*	*	*	*	*	*	*
Mackinac	*	*	*	*	*	*	*	*	*	*
Macomb	6.1 ±0.9	6.1 ±0.9	6.3 ±0.9	6.4 ±0.9	6.4 ±0.9	6.0 ±0.9	5.8 ±0.9	5.6 ±0.8	5.8 ±0.9	5.6 ±0.8
Manistee	9.7 ±7.2	*	*	*	*	*	12.9 ±7.9	13.2 ±8.2	14.2 ±8.4	8.4 ±6.7
Marquette	6.0 ±3.4	7.5 ±3.9	7.2 ±3.9	7.4 ±4.0	5.6 ±3.5	6.6 ±3.7	5.4 ±3.3	3.2 ±2.6	*	3.8 ±2.8
Mason	10.0 ±6.5	10.3 ±6.7	10.3 ±6.7	9.4 ±6.1	10.6 ±6.5	10.5 ±6.5	8.8 ±6.1	*	*	*
Mecosta	5.9 ±4.1	10.1 ±5.3	9.8 ±5.1	10.2 ±5.1	6.8 ±4.2	8.2 ±4.6	7.8 ±4.6	8.7 ±4.9	7.4 ±4.6	6.6 ±4.3
Menominee	*	*	*	*	*	*	*	*	*	*
Midland	5.6 ±2.6	6.9 ±2.9	8.5 ±3.3	8.0 ±3.1	8.3 ±3.2	6.4 ±2.8	5.9 ±2.7	6.4 ±2.9	7.1 ±3.1	8.7 ±3.5
Missaukee	*	*	*	*	*	*	*	*	*	*
Monroe	7.2 ±2.3	6.1 ±2.1	4.7 ±1.9	4.0 ±1.7	5.0 ±1.9	7.2 ±2.3	6.3 ±2.2	6.2 ±2.1	5.2 ±2.0	7.4 ±2.3
Montcalm	6.7 ±3.3	7.3 ±3.4	9.2 ±3.7	8.0 ±3.5	6.3 ±3.1	5.2 ±2.8	8.7 ±3.6	7.9 ±3.4	5.9 ±3.0	3.6 ±2.3
Montmorency	*	-	-	-	-	-	-	-	-	*

**Table 12-A**  
**All Three-Year Moving Average Infant Death Rates by County**  
**Michigan Residents, 1995-2006**  
**(Continued)**

County	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Muskegon	9.0 ±2.2	7.9 ±2.1	10.0 ±2.3	9.3 ±2.2	10.6 ±2.4	8.0 ±2.1	9.0 ±2.2	8.6 ±2.2	8.4 ±2.1	6.7 ±1.9
Newaygo	6.4 ±3.6	5.8 ±3.4	4.7 ±3.1	5.8 ±3.4	5.3 ±3.3	5.9 ±3.5	4.3 ±3.0	4.3 ±3.0	5.3 ±3.3	6.3 ±3.5
Oakland	5.8 ±0.7	6.0 ±0.7	6.1 ±0.7	6.2 ±0.7	6.0 ±0.7	6.3 ±0.7	6.4 ±0.7	6.4 ±0.7	6.7 ±0.8	6.5 ±0.7
Oceana	*	8.7 ±5.6	7.8 ±5.4	7.4 ±5.1	*	7.2 ±4.9	8.1 ±5.3	8.7 ±5.4	10.2 ±5.7	10.1 ±5.7
Ogemaw	8.6 ±6.9	8.5 ±6.7	*	*	*	*	*	*	*	*
Ontonagon	*	-	-	-	-	-	-	*	*	*
Osceola	*	7.2 ±5.8	8.4 ±6.2	11.8 ±7.3	10.3 ±6.7	8.8 ±6.1	7.5 ±5.5	6.4 ±5.1	8.8 ±6.1	8.8 ±6.1
Oscoda	*	*	*	*	*	*	*	*	*	-
Otsego	10.1 ±7.0	9.5 ±6.6	*	*	*	*	*	*	*	*
Ottawa	6.9 ±1.6	6.8 ±1.6	6.3 ±1.5	6.6 ±1.5	6.9 ±1.6	7.1 ±1.6	6.9 ±1.6	6.0 ±1.5	5.3 ±1.4	5.3 ±1.4
Presque Isle	15.4 ±12.2	*	*	17.4 ±12.8	19.9 ±13.7	15.6 ±12.4	*	*	*	*
Roscommon	*	9.8 ±7.8	11.0 ±8.1	12.6 ±8.6	*	*	*	11.3 ±8.4	9.5 ±7.6	*
Saginaw	8.9 ±2.0	8.8 ±2.0	8.5 ±1.9	8.6 ±1.9	8.9 ±2.0	9.5 ±2.1	9.3 ±2.1	8.7 ±2.0	9.2 ±2.1	8.5 ±2.0
St. Clair	6.8 ±2.0	5.8 ±1.9	6.0 ±1.9	6.0 ±1.9	7.5 ±2.1	7.2 ±2.1	7.1 ±2.1	7.8 ±2.2	8.0 ±2.2	7.7 ±2.2
St. Joseph	7.2 ±3.3	6.1 ±3.0	4.6 ±2.6	4.7 ±2.5	7.8 ±3.2	9.2 ±3.5	9.4 ±3.6	7.6 ±3.2	6.6 ±3.0	7.7 ±3.2
Sanilac	6.1 ±3.7	*	4.1 ±3.0	6.1 ±3.8	7.9 ±4.3	5.6 ±3.7	5.0 ±3.4	3.8 ±3.0	4.3 ±3.2	5.8 ±3.8
Schoolcraft	*	22.2 ±17.6	*	*	*	*	*	*	*	*
Shiawassee	5.8 ±2.8	6.8 ±3.1	7.1 ±3.1	6.1 ±2.9	5.1 ±2.6	8.0 ±3.3	8.6 ±3.5	9.7 ±3.7	9.2 ±3.7	7.6 ±3.3
Tuscola	11.0 ±4.5	10.7 ±4.5	9.9 ±4.3	7.8 ±3.8	6.8 ±3.5	9.2 ±4.1	8.2 ±3.9	8.8 ±4.1	7.5 ±3.8	8.3 ±4.0
Van Buren	7.7 ±3.1	10.6 ±3.6	11.6 ±3.8	8.6 ±3.2	6.7 ±2.9	5.8 ±2.6	6.9 ±2.9	6.6 ±2.9	9.4 ±3.4	7.6 ±3.0
Washtenaw	6.3 ±1.4	5.3 ±1.3	5.9 ±1.4	6.6 ±1.4	7.8 ±1.6	7.3 ±1.5	6.8 ±1.4	6.4 ±1.4	6.4 ±1.4	6.0 ±1.3
Wayne	11.0 ±0.7	11.0 ±0.7	11.0 ±0.7	10.9 ±0.7	10.4 ±0.7	10.6 ±0.7	11.1 ±0.7	11.5 ±0.7	11.3 ±0.7	10.6 ±0.7
Wexford	5.5 ±4.4	5.4 ±4.3	10.4 ±5.9	11.7 ±6.1	10.1 ±5.7	6.0 ±4.4	*	*	6.5 ±4.5	6.3 ±4.3

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008

**Table 12-B**  
**White Three-Year Moving Average Infant Death Rates by County**  
**Michigan Residents, 1995-2006**

County	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	6.1 ±0.3	6.1 ±0.3	6.1 ±0.3	6.1 ±0.3	6.0 ±0.3	6.0 ±0.3	6.2 ±0.3	6.0 ±0.3	5.8 ±0.3	5.4 ±0.3
<b>Alcona</b>	-	-	-	*	*	*	*	*	*	*
<b>Alger</b>	*	*	*	*	-	*	*	*	*	-
<b>Allegan</b>	6.9 ±2.6	7.8 ±2.7	7.2 ±2.6	7.3 ±2.6	6.0 ±2.3	6.5 ±2.4	7.5 ±2.6	6.7 ±2.4	7.2 ±2.5	5.4 ±2.2
<b>Alpena</b>	6.2 ±4.9	7.2 ±5.3	11.1 ±6.5	11.2 ±6.6	10.2 ±6.3	*	*	*	*	*
<b>Antrim</b>	8.7 ±6.9	*	*	*	*	*	*	*	*	*
<b>Arenac</b>	*	*	*	*	*	*	*	*	*	*
<b>Baraga</b>	*	*	*	*	*	*	*	*	*	*
<b>Barry</b>	6.8 ±3.5	8.3 ±3.9	10.0 ±4.3	8.5 ±3.9	7.0 ±3.5	4.8 ±2.9	3.8 ±2.6	4.3 ±2.8	3.8 ±2.6	5.2 ±3.1
<b>Bay</b>	7.6 ±2.7	7.7 ±2.7	5.5 ±2.3	4.5 ±2.1	5.3 ±2.3	6.0 ±2.5	6.7 ±2.6	4.6 ±2.2	5.3 ±2.4	6.1 ±2.5
<b>Benzie</b>	*	*	*	*	*	-	*	*	10.5 ±8.4	*
<b>Berrien</b>	6.6 ±2.3	4.6 ±1.9	5.5 ±2.1	4.0 ±1.8	5.1 ±2.0	5.6 ±2.1	7.2 ±2.4	6.1 ±2.3	5.8 ±2.2	5.2 ±2.1
<b>Branch</b>	6.5 ±4.0	7.7 ±4.3	6.4 ±4.0	6.0 ±3.7	8.7 ±4.4	9.2 ±4.5	9.2 ±4.5	9.2 ±4.5	9.4 ±4.4	8.3 ±4.2
<b>Calhoun</b>	6.0 ±2.2	4.9 ±2.0	6.2 ±2.3	5.3 ±2.1	8.7 ±2.7	9.7 ±2.8	9.8 ±2.8	8.1 ±2.6	7.7 ±2.5	7.3 ±2.5
<b>Cass</b>	8.6 ±4.9	5.4 ±3.7	5.5 ±3.8	*	*	7.7 ±4.5	8.5 ±4.8	9.8 ±5.1	7.8 ±4.6	7.0 ±4.3
<b>Charlevoix</b>	8.7 ±6.0	8.4 ±5.8	8.4 ±5.8	*	*	6.9 ±5.5	*	*	*	*
<b>Cheboygan</b>	10.2 ±7.1	8.8 ±6.5	8.6 ±6.3	*	7.5 ±5.9	*	7.3 ±5.8	*	*	*
<b>Chippewa</b>	*	*	*	6.6 ±5.3	*	6.8 ±5.4	*	*	*	6.9 ±5.5
<b>Clare</b>	*	*	6.9 ±5.1	9.9 ±6.1	8.8 ±5.7	5.9 ±4.7	9.0 ±5.9	12.2 ±6.9	11.3 ±6.7	6.9 ±5.1
<b>Clinton</b>	4.2 ±2.6	3.0 ±2.2	3.9 ±2.5	4.7 ±2.8	5.3 ±3.0	6.0 ±3.1	7.3 ±3.5	6.7 ±3.3	5.1 ±2.9	2.9 ±2.2
<b>Crawford</b>	13.2 ±10.5	*	*	*	*	*	15.5 ±12.3	*	*	*
<b>Delta</b>	*	*	*	4.8 ±3.9	8.8 ±5.2	9.0 ±5.3	9.9 ±5.6	8.7 ±5.4	9.5 ±5.6	5.1 ±4.1
<b>Dickinson</b>	*	*	7.0 ±5.6	7.3 ±5.8	*	*	*	*	*	8.7 ±6.4
<b>Eaton</b>	4.0 ±2.1	4.4 ±2.2	3.0 ±1.9	4.1 ±2.2	2.3 ±1.6	4.2 ±2.1	4.0 ±2.1	5.1 ±2.4	4.3 ±2.3	4.8 ±2.4
<b>Emmet</b>	*	*	*	6.5 ±4.8	7.6 ±5.2	7.7 ±5.3	6.5 ±4.8	5.7 ±4.5	5.9 ±4.7	*
<b>Genesee</b>	8.5 ±1.5	8.9 ±1.6	8.3 ±1.5	8.5 ±1.5	7.1 ±1.4	7.9 ±1.5	7.6 ±1.5	8.6 ±1.6	7.5 ±1.5	7.3 ±1.5
<b>Gladwin</b>	12.6 ±7.7	10.1 ±7.0	12.3 ±7.5	9.2 ±6.4	11.2 ±6.9	9.4 ±6.5	11.1 ±7.2	10.3 ±7.1	11.5 ±7.5	9.1 ±6.7
<b>Gogebic</b>	*	15.8 ±11.6	18.4 ±12.7	*	*	*	-	-	*	*
<b>Grand Traverse</b>	5.8 ±2.9	5.7 ±2.9	5.3 ±2.8	5.8 ±2.8	7.2 ±3.1	6.8 ±3.1	6.3 ±3.0	4.7 ±2.5	5.0 ±2.6	5.6 ±2.7
<b>Gratiot</b>	9.5 ±5.0	10.2 ±5.1	7.9 ±4.5	7.8 ±4.4	6.0 ±3.9	6.2 ±4.0	*	5.9 ±4.0	4.2 ±3.4	7.1 ±4.4
<b>Hillsdale</b>	6.0 ±3.7	6.5 ±3.8	8.6 ±4.3	8.8 ±4.3	8.7 ±4.2	5.9 ±3.5	5.7 ±3.5	3.4 ±2.8	*	4.1 ±3.0

**Table 12-B**  
**White Three-Year Moving Average Infant Death Rates by County**  
**Michigan Residents, 1995-2006**  
**(Continued)**

County	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Houghton	5.3 ±4.2	7.4 ±5.1	8.0 ±5.2	7.1 ±4.9	*	*	*	7.2 ±5.0	6.1 ±4.5	5.3 ±4.2
Huron	6.1 ±4.5	7.9 ±5.1	*	6.2 ±4.6	7.4 ±5.1	8.5 ±5.5	*	*	*	6.2 ±4.9
Ingham	5.9 ±1.6	6.3 ±1.6	5.5 ±1.5	5.0 ±1.5	4.0 ±1.3	4.5 ±1.4	4.8 ±1.5	5.1 ±1.5	5.2 ±1.5	4.3 ±1.4
Ionia	7.5 ±3.5	5.9 ±3.1	5.4 ±3.0	5.3 ±2.9	7.3 ±3.4	8.0 ±3.5	7.4 ±3.4	5.6 ±2.9	4.5 ±2.6	3.6 ±2.3
Iosco	*	*	*	*	*	8.2 ±6.5	*	*	*	*
Iron	-	-	*	*	*	*	-	*	*	*
Isabella	4.7 ±3.3	4.6 ±3.2	5.6 ±3.4	7.5 ±3.9	9.4 ±4.3	9.9 ±4.4	11.0 ±4.7	7.9 ±4.0	7.9 ±4.0	7.7 ±3.9
Jackson	6.4 ±2.1	7.8 ±2.3	9.3 ±2.5	10.3 ±2.7	9.5 ±2.6	8.0 ±2.4	7.4 ±2.3	6.0 ±2.0	6.6 ±2.1	6.2 ±2.1
Kalamazoo	7.9 ±2.0	8.4 ±2.0	7.0 ±1.9	6.6 ±1.8	7.2 ±1.9	8.6 ±2.1	8.5 ±2.1	6.4 ±1.8	5.4 ±1.7	4.7 ±1.6
Kalkaska	*	*	*	*	*	*	*	*	*	*
Kent	6.0 ±1.0	5.8 ±1.0	5.6 ±1.0	6.5 ±1.0	6.7 ±1.0	6.8 ±1.1	7.0 ±1.1	6.6 ±1.0	6.2 ±1.0	5.4 ±0.9
Keweenaw	-	-	-	-	-	*	*	*	-	*
Lake	*	*	*	*	*	-	*	*	22.1 ±16.2	*
Lapeer	6.7 ±2.8	8.9 ±3.2	8.5 ±3.2	7.1 ±2.9	5.9 ±2.6	5.4 ±2.5	5.4 ±2.6	3.8 ±2.2	3.0 ±1.9	3.8 ±2.2
Leelanau	*	*	*	*	*	*	11.9 ±9.4	15.7 ±10.8	15.0 ±10.3	*
Lenawee	5.0 ±2.4	4.1 ±2.1	5.5 ±2.5	5.8 ±2.5	5.7 ±2.5	4.3 ±2.2	4.2 ±2.1	3.7 ±2.0	4.2 ±2.1	5.6 ±2.4
Livingston	5.8 ±2.0	5.9 ±2.0	5.0 ±1.9	5.2 ±1.9	5.3 ±1.9	4.3 ±1.7	5.0 ±1.8	4.5 ±1.7	5.1 ±1.8	3.8 ±1.6
Luce	*	*	*	*	*	*	*	*	*	*
Mackinac	*	*	*	*	*	*	*	*	*	*
Macomb	6.2 ±0.9	6.2 ±0.9	6.3 ±0.9	6.2 ±0.9	5.8 ±0.9	5.4 ±0.9	5.1 ±0.9	4.9 ±0.8	5.0 ±0.9	4.8 ±0.8
Manistee	8.5 ±6.8	*	*	*	*	*	12.0 ±7.8	12.5 ±8.1	13.6 ±8.3	8.8 ±7.0
Marquette	5.2 ±3.2	6.6 ±3.7	6.9 ±3.9	7.0 ±4.0	5.8 ±3.6	6.3 ±3.7	5.1 ±3.3	*	*	4.0 ±2.9
Mason	9.1 ±6.3	9.3 ±6.4	9.3 ±6.4	8.6 ±5.9	9.8 ±6.3	8.6 ±5.9	6.8 ±5.4	*	*	*
Mecosta	6.4 ±4.4	10.1 ±5.4	9.8 ±5.3	9.6 ±5.2	6.8 ±4.4	8.1 ±4.8	8.2 ±4.8	9.2 ±5.2	7.0 ±4.5	6.2 ±4.3
Menominee	*	*	*	*	*	*	*	*	*	*
Midland	5.8 ±2.7	6.8 ±3.0	8.4 ±3.3	8.0 ±3.2	8.6 ±3.3	6.3 ±2.8	5.8 ±2.8	5.6 ±2.8	6.6 ±3.1	8.3 ±3.5
Missaukee	*	*	*	*	*	*	*	*	*	*
Monroe	6.0 ±2.1	5.0 ±1.9	3.9 ±1.7	3.9 ±1.7	5.2 ±2.0	7.3 ±2.4	6.3 ±2.2	5.9 ±2.1	4.8 ±1.9	7.0 ±2.3
Montcalm	5.9 ±3.1	6.6 ±3.2	8.5 ±3.6	7.7 ±3.5	6.0 ±3.0	5.3 ±2.9	8.9 ±3.7	8.0 ±3.5	6.0 ±3.0	3.6 ±2.4
Montmorency	*	-	-	-	-	-	-	-	-	*

**Table 12-B**  
**White Three-Year Moving Average Infant Death Rates by County**  
**Michigan Residents, 1995-2006**  
**(Continued)**

County	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Muskegon	9.0 ±2.5	7.2 ±2.2	8.8 ±2.4	8.0 ±2.3	9.4 ±2.5	7.0 ±2.2	7.5 ±2.2	6.1 ±2.0	5.9 ±2.0	4.5 ±1.8
Newaygo	5.5 ±3.4	5.4 ±3.3	4.8 ±3.1	5.4 ±3.3	4.9 ±3.2	5.5 ±3.4	4.4 ±3.0	4.4 ±3.0	4.9 ±3.2	5.4 ±3.3
Oakland	4.7 ±0.7	4.5 ±0.7	4.3 ±0.6	4.2 ±0.6	4.1 ±0.6	4.3 ±0.7	5.0 ±0.7	4.9 ±0.7	5.4 ±0.8	4.9 ±0.7
Oceana	*	8.8 ±5.7	7.9 ±5.4	7.6 ±5.2	*	7.3 ±5.0	8.2 ±5.3	8.8 ±5.4	9.5 ±5.6	9.4 ±5.5
Ogemaw	8.8 ±7.0	8.6 ±6.9	*	*	*	*	*	*	*	*
Ontonagon	*	-	-	-	-	-	-	*	*	*
Osceola	*	7.4 ±5.9	8.5 ±6.3	12.0 ±7.4	10.5 ±6.8	9.0 ±6.2	7.7 ±5.7	6.5 ±5.2	9.0 ±6.2	9.0 ±6.2
Oscoda	*	*	*	*	*	*	*	*	*	-
Otsego	10.2 ±7.1	9.7 ±6.7	*	*	*	*	*	*	*	*
Ottawa	6.6 ±1.6	6.6 ±1.6	6.1 ±1.5	6.7 ±1.6	6.9 ±1.6	7.2 ±1.6	6.8 ±1.6	5.7 ±1.5	5.1 ±1.4	5.0 ±1.4
Presque Isle	15.8 ±12.6	*	*	17.7 ±13.0	20.2 ±13.8	15.7 ±12.5	*	*	*	*
Roscommon	*	10.1 ±8.0	11.3 ±8.3	11.2 ±8.2	*	*	*	11.6 ±8.5	9.7 ±7.7	*
Saginaw	5.2 ±1.8	5.6 ±1.8	5.8 ±1.9	5.7 ±1.9	5.7 ±1.9	5.1 ±1.8	5.6 ±1.9	5.3 ±1.9	5.4 ±1.9	5.0 ±1.8
St. Clair	6.7 ±2.1	5.7 ±1.9	5.5 ±1.9	5.6 ±1.9	7.0 ±2.1	6.5 ±2.0	6.1 ±2.0	7.2 ±2.1	7.5 ±2.2	7.0 ±2.1
St. Joseph	7.1 ±3.4	5.6 ±2.9	4.4 ±2.6	3.4 ±2.2	5.9 ±2.9	7.4 ±3.2	8.6 ±3.5	7.2 ±3.2	5.8 ±2.9	6.6 ±3.0
Sanilac	6.1 ±3.8	*	4.1 ±3.1	6.2 ±3.8	8.0 ±4.3	5.7 ±3.7	5.0 ±3.5	3.8 ±3.1	4.4 ±3.2	5.8 ±3.8
Schoolcraft	*	*	*	*	*	*	*	-	*	*
Shiawassee	5.9 ±2.9	6.5 ±3.0	6.8 ±3.1	5.4 ±2.7	4.7 ±2.6	7.7 ±3.3	8.7 ±3.5	9.9 ±3.8	9.4 ±3.7	7.8 ±3.4
Tuscola	10.7 ±4.4	10.9 ±4.5	10.1 ±4.4	8.0 ±3.9	5.9 ±3.4	8.4 ±4.0	7.4 ±3.7	9.0 ±4.1	7.6 ±3.8	7.9 ±4.0
Van Buren	7.6 ±3.2	10.7 ±3.8	11.5 ±3.9	8.6 ±3.4	6.2 ±2.9	5.2 ±2.6	6.0 ±2.9	5.7 ±2.8	6.3 ±2.9	4.8 ±2.5
Washtenaw	5.9 ±1.6	4.8 ±1.5	4.8 ±1.5	5.3 ±1.5	6.3 ±1.7	5.9 ±1.6	5.0 ±1.5	5.2 ±1.5	4.3 ±1.4	4.5 ±1.4
Wayne	5.5 ±0.7	5.7 ±0.7	5.9 ±0.7	5.6 ±0.7	5.3 ±0.7	5.4 ±0.7	6.1 ±0.7	6.2 ±0.7	5.9 ±0.7	5.0 ±0.7
Wexford	5.6 ±4.5	5.5 ±4.4	9.7 ±5.7	11.1 ±6.0	9.5 ±5.6	6.1 ±4.5	*	*	6.6 ±4.6	6.4 ±4.4

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008

**Table 12-C  
Black Three-Year Moving Average Infant Death Rates by County  
Michigan Residents, 1995-2006**

County	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	17.5 ±0.9	17.3 ±0.9	17.4 ±1.0	17.6 ±1.0	17.7 ±1.0	17.8 ±1.0	17.6 ±1.0	17.7 ±1.0	17.5 ±1.0	16.6 ±1.0
<b>Berrien</b>	17.3 ±6.0	19.5 ±6.4	21.7 ±6.8	23.9 ±7.1	24.0 ±7.2	20.1 ±6.8	16.7 ±6.4	11.4 ±5.4	12.0 ±5.5	11.9 ±5.5
<b>Calhoun</b>	11.2 ±7.3	16.2 ±9.1	18.5 ±9.6	19.7 ±9.9	18.3 ±9.5	9.2 ±6.8	10.2 ±7.0	9.7 ±6.7	14.1 ±7.9	20.7 ±9.7
<b>Cass</b>	-	*	*	*	*	*	-	-	*	*
<b>Genesee</b>	21.3 ±3.9	21.4 ±3.9	22.7 ±4.0	20.9 ±3.8	21.7 ±3.9	21.1 ±4.0	21.5 ±4.0	22.5 ±4.1	20.3 ±4.0	18.6 ±3.8
<b>Ingham</b>	18.9 ±6.2	14.2 ±5.4	10.9 ±4.8	14.0 ±5.3	17.7 ±6.0	18.5 ±6.2	14.7 ±5.6	14.2 ±5.5	17.5 ±6.1	20.1 ±6.7
<b>Jackson</b>	20.2 ±11.8	27.6 ±13.8	28.6 ±14.3	23.9 ±12.8	22.6 ±12.6	13.2 ±9.7	16.9 ±11.0	14.6 ±10.0	31.9 ±14.5	29.0 ±13.6
<b>Kalamazoo</b>	17.1 ±6.8	12.3 ±5.6	9.9 ±5.0	13.2 ±5.7	13.9 ±5.9	20.7 ±7.2	19.4 ±6.9	20.8 ±7.1	17.9 ±6.4	16.0 ±6.1
<b>Kent</b>	21.4 ±5.0	21.3 ±5.0	18.3 ±4.6	17.4 ±4.4	17.3 ±4.3	18.9 ±4.6	19.4 ±4.7	19.1 ±4.7	17.6 ±4.4	18.0 ±4.4
<b>Macomb</b>	9.6 ±7.1	7.8 ±6.2	12.1 ±7.4	16.4 ±8.0	21.8 ±8.4	19.3 ±7.4	18.6 ±6.7	15.8 ±5.8	15.2 ±5.3	13.6 ±4.7
<b>Muskegon</b>	9.6 ±5.0	9.8 ±5.1	13.4 ±6.0	12.4 ±5.9	12.9 ±5.9	9.1 ±5.1	13.1 ±6.2	17.6 ±7.1	17.6 ±7.0	13.4 ±6.0
<b>Oakland</b>	17.2 ±3.7	19.8 ±3.9	22.0 ±4.0	23.3 ±4.1	21.0 ±3.8	21.3 ±3.9	16.8 ±3.4	16.8 ±3.4	15.4 ±3.2	16.6 ±3.3
<b>Saginaw</b>	19.5 ±5.8	18.7 ±5.7	16.8 ±5.4	16.3 ±5.3	17.3 ±5.4	20.5 ±5.9	19.0 ±5.7	17.8 ±5.6	18.9 ±5.8	17.8 ±5.6
<b>St. Clair</b>	*	*	*	*	*	41.1 ±32.2	44.6 ±32.3	*	*	*
<b>Van Buren</b>	*	*	*	*	*	*	*	*	37.0 ±29.1	*
<b>Washtenaw</b>	12.1 ±5.3	11.8 ±5.1	12.3 ±5.1	13.5 ±5.3	15.5 ±5.6	15.3 ±5.5	16.8 ±5.8	14.3 ±5.3	16.1 ±5.5	12.1 ±4.6
<b>Wayne</b>	17.2 ±1.2	16.7 ±1.2	16.7 ±1.2	16.7 ±1.2	16.6 ±1.2	16.9 ±1.2	17.3 ±1.3	18.1 ±1.3	17.7 ±1.3	16.7 ±1.3

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008

**Table 13-A**  
**Three-Year Moving Average Infant Death Rates by District**  
**Michigan Residents, 1995-2006**

District	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.2 ±0.3	8.1 ±0.3	8.0 ±0.3	7.6 ±0.3
<b>Allegan County Health Department</b>	7.0 ±2.5	7.8 ±2.7	7.7 ±2.6	7.5 ±2.6	7.0 ±2.5	7.0 ±2.5	8.3 ±2.7	7.0 ±2.5	7.7 ±2.6	6.1 ±2.3
<b>Barry-Eaton District Health Department</b>	5.2 ±1.9	6.0 ±2.0	5.7 ±2.0	5.9 ±2.0	4.0 ±1.6	4.3 ±1.7	3.9 ±1.6	4.8 ±1.8	4.4 ±1.7	5.0 ±1.8
<b>Bay County Health Department</b>	7.4 ±2.6	7.7 ±2.7	5.6 ±2.3	4.6 ±2.1	5.4 ±2.3	6.1 ±2.4	6.7 ±2.6	4.5 ±2.1	5.4 ±2.3	6.4 ±2.5
<b>Benzie-Leelanau District Health Department</b>	*	*	*	*	*	*	8.7 ±5.3	10.4 ±5.8	12.7 ±6.4	7.8 ±5.1
<b>Berrien County Health Department</b>	9.4 ±2.3	8.5 ±2.2	9.6 ±2.4	9.1 ±2.3	10.0 ±2.4	9.2 ±2.3	9.4 ±2.4	7.3 ±2.1	7.5 ±2.1	7.2 ±2.1
<b>Branch-Hillsdale-St. Joseph Health Department</b>	6.6 ±2.1	6.6 ±2.1	6.3 ±2.0	6.3 ±2.0	8.4 ±2.2	8.2 ±2.2	8.4 ±2.2	7.0 ±2.1	6.5 ±2.0	7.0 ±2.0
<b>Calhoun County Health Department</b>	7.2 ±2.2	6.9 ±2.2	8.0 ±2.3	7.5 ±2.3	10.1 ±2.6	10.0 ±2.6	10.0 ±2.6	8.7 ±2.4	9.2 ±2.5	9.6 ±2.6
<b>Central Michigan District Health Department</b>	6.4 ±2.1	7.2 ±2.2	7.9 ±2.3	9.2 ±2.4	8.9 ±2.4	8.4 ±2.3	9.3 ±2.4	9.1 ±2.4	9.3 ±2.4	7.8 ±2.2
<b>Chippewa County Health Department</b>	4.7 ±3.7	5.5 ±4.1	5.0 ±4.0	5.8 ±4.3	5.0 ±4.0	6.0 ±4.4	5.4 ±4.3	*	6.8 ±4.7	7.5 ±4.8
<b>City Of Detroit Health Department</b>	15.2 ±1.1	14.9 ±1.1	15.1 ±1.1	14.9 ±1.1	14.7 ±1.1	15.1 ±1.1	15.6 ±1.2	16.2 ±1.2	15.9 ±1.2	15.0 ±1.2
<b>Dickinson-Iron District Health Department</b>	*	*	5.9 ±4.3	7.9 ±5.1	6.3 ±4.6	*	*	*	*	7.3 ±5.1
<b>District Health Department #10</b>	6.9 ±1.7	7.8 ±1.8	7.4 ±1.8	8.2 ±1.8	7.0 ±1.7	7.4 ±1.7	7.5 ±1.8	7.1 ±1.7	8.1 ±1.8	6.9 ±1.7
<b>District Health Department #2</b>	5.3 ±3.1	4.8 ±3.0	4.4 ±2.9	5.9 ±3.3	6.7 ±3.6	7.8 ±3.9	8.1 ±4.1	6.6 ±3.7	6.2 ±3.7	4.5 ±3.1
<b>District Health Department #4</b>	8.5 ±3.6	7.1 ±3.3	9.8 ±3.8	9.9 ±3.9	9.6 ±3.8	6.1 ±3.1	5.4 ±2.9	3.9 ±2.5	2.7 ±2.1	4.4 ±2.7
<b>Genesee County Health Department</b>	12.1 ±1.5	12.2 ±1.6	12.3 ±1.6	12.1 ±1.5	11.3 ±1.5	11.5 ±1.5	11.2 ±1.5	12.3 ±1.6	10.9 ±1.5	10.5 ±1.5
<b>Grand Traverse County Health Department</b>	5.7 ±2.9	5.9 ±2.9	5.5 ±2.8	5.9 ±2.8	7.0 ±3.1	7.0 ±3.0	6.4 ±2.9	5.5 ±2.7	5.5 ±2.7	6.1 ±2.8
<b>Huron County Health Department</b>	6.0 ±4.4	7.7 ±5.0	*	6.0 ±4.5	7.2 ±5.0	8.3 ±5.4	*	*	*	6.1 ±4.8
<b>Ingham County Health Department</b>	7.9 ±1.6	7.3 ±1.5	6.6 ±1.5	6.9 ±1.5	6.8 ±1.5	7.1 ±1.6	6.7 ±1.5	7.1 ±1.6	7.7 ±1.6	7.1 ±1.6
<b>Ionia County Health Department</b>	7.4 ±3.4	5.8 ±3.0	5.4 ±2.9	5.6 ±2.9	7.7 ±3.4	8.3 ±3.5	7.3 ±3.4	5.5 ±2.9	4.4 ±2.6	3.5 ±2.3
<b>Jackson County Health Department</b>	8.0 ±2.2	9.7 ±2.4	10.9 ±2.6	11.5 ±2.7	10.6 ±2.6	8.5 ±2.3	8.2 ±2.3	7.1 ±2.1	9.4 ±2.4	9.0 ±2.3



**Table 13-A**  
**All Three-Year Moving Average Infant Death Rates by District**  
**Michigan Residents, 1995-2006**  
**(Continued)**

District	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Kalamazoo County Human Services Department	9.2 ±1.9	9.1 ±1.9	7.7 ±1.8	7.8 ±1.8	8.2 ±1.8	10.4 ±2.1	10.2 ±2.0	8.8 ±1.9	7.4 ±1.7	6.5 ±1.6
Kent County Health Department	8.0 ±1.1	7.6 ±1.0	7.0 ±1.0	7.7 ±1.0	8.0 ±1.0	8.4 ±1.1	8.5 ±1.1	8.6 ±1.1	8.2 ±1.1	8.0 ±1.0
Lapeer County Health Department	6.6 ±2.8	9.1 ±3.3	8.8 ±3.2	7.3 ±2.9	5.8 ±2.6	5.3 ±2.5	5.7 ±2.6	4.1 ±2.2	3.2 ±2.0	3.7 ±2.2
Lenawee County Health Department	5.4 ±2.4	4.3 ±2.1	5.6 ±2.5	5.8 ±2.5	6.1 ±2.5	4.4 ±2.1	4.3 ±2.1	3.5 ±1.9	4.3 ±2.1	5.6 ±2.4
Livingston County Health Department	5.6 ±2.0	5.6 ±2.0	4.8 ±1.8	5.0 ±1.8	5.1 ±1.8	4.3 ±1.6	5.2 ±1.8	4.7 ±1.7	5.3 ±1.8	3.9 ±1.6
Luce-Mackinac-Alger-Schoolcraft Health Department	10.6 ±6.0	13.9 ±7.0	9.2 ±5.7	10.5 ±6.2	6.7 ±4.9	6.9 ±5.1	6.1 ±4.9	7.2 ±5.3	9.4 ±6.1	9.5 ±6.2
Macomb County Health Department	6.1 ±0.9	6.1 ±0.9	6.3 ±0.9	6.4 ±0.9	6.4 ±0.9	6.0 ±0.9	5.8 ±0.9	5.6 ±0.8	5.8 ±0.9	5.6 ±0.8
Marquette County Health Department	6.0 ±3.4	7.5 ±3.9	7.2 ±3.9	7.4 ±4.0	5.6 ±3.5	6.6 ±3.7	5.4 ±3.3	3.2 ±2.6	*	3.8 ±2.8
Mid-Michigan District Health Department	6.5 ±2.0	6.3 ±2.0	6.9 ±2.0	6.7 ±2.0	6.0 ±1.9	5.8 ±1.9	7.5 ±2.1	7.3 ±2.1	5.7 ±1.8	4.3 ±1.6
Midland County Health Department	5.6 ±2.6	6.9 ±2.9	8.5 ±3.3	8.0 ±3.1	8.3 ±3.2	6.4 ±2.8	5.9 ±2.7	6.4 ±2.9	7.1 ±3.1	8.7 ±3.5
Monroe County Health Department	7.2 ±2.3	6.1 ±2.1	4.7 ±1.9	4.0 ±1.7	5.0 ±1.9	7.2 ±2.3	6.3 ±2.2	6.2 ±2.1	5.2 ±2.0	7.4 ±2.3
Muskegon County Health Department	9.0 ±2.2	7.9 ±2.1	10.0 ±2.3	9.3 ±2.2	10.6 ±2.4	8.0 ±2.1	9.0 ±2.2	8.6 ±2.2	8.4 ±2.1	6.7 ±1.9
Northwest Michigan Community Health Agency	7.3 ±2.8	6.4 ±2.6	5.4 ±2.4	4.9 ±2.2	5.5 ±2.4	5.5 ±2.4	4.4 ±2.2	4.7 ±2.2	4.0 ±2.1	4.6 ±2.2
Oakland County Health Department	5.8 ±0.7	6.0 ±0.7	6.1 ±0.7	6.2 ±0.7	6.0 ±0.7	6.3 ±0.7	6.4 ±0.7	6.4 ±0.7	6.7 ±0.8	6.5 ±0.7
Ottawa County Health Department	6.9 ±1.6	6.8 ±1.6	6.3 ±1.5	6.6 ±1.5	6.9 ±1.6	7.1 ±1.6	6.9 ±1.6	6.0 ±1.5	5.3 ±1.4	5.3 ±1.4
Public Health Delta & Menominee Counties	5.1 ±3.2	3.4 ±2.5	3.4 ±2.5	4.2 ±2.7	7.6 ±3.7	7.7 ±3.7	8.7 ±4.0	6.8 ±3.7	6.8 ±3.7	3.7 ±2.7
Saginaw County Health Department	8.9 ±2.0	8.8 ±2.0	8.5 ±1.9	8.6 ±1.9	8.9 ±2.0	9.5 ±2.1	9.3 ±2.1	8.7 ±2.0	9.2 ±2.1	8.5 ±2.0
Sanilac County Health Department	6.1 ±3.7	*	4.1 ±3.0	6.1 ±3.8	7.9 ±4.3	5.6 ±3.7	5.0 ±3.4	3.8 ±3.0	4.3 ±3.2	5.8 ±3.8
Shiawassee County Health Department	5.8 ±2.8	6.8 ±3.1	7.1 ±3.1	6.1 ±2.9	5.1 ±2.6	8.0 ±3.3	8.6 ±3.5	9.7 ±3.7	9.2 ±3.7	7.6 ±3.3
St Clair County Health Department	6.8 ±2.0	5.8 ±1.9	6.0 ±1.9	6.0 ±1.9	7.5 ±2.1	7.2 ±2.1	7.1 ±2.1	7.8 ±2.2	8.0 ±2.2	7.7 ±2.2
Tuscola County Health Department	11.0 ±4.5	10.7 ±4.5	9.9 ±4.3	7.8 ±3.8	6.8 ±3.5	9.2 ±4.1	8.2 ±3.9	8.8 ±4.1	7.5 ±3.8	8.3 ±4.0

**Table 13-A**  
**All Three-Year Moving Average Infant Death Rates by District**  
**Michigan Residents, 1995-2006**  
**(Continued)**

District	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Van Buren-Cass County Health Department	7.7 ±2.5	8.7 ±2.6	9.9 ±2.8	7.5 ±2.4	6.1 ±2.2	6.4 ±2.3	7.2 ±2.4	7.4 ±2.5	9.5 ±2.8	8.1 ±2.6
Washtenaw County Health Department	6.3 ±1.4	5.3 ±1.3	5.9 ±1.4	6.6 ±1.4	7.8 ±1.6	7.3 ±1.5	6.8 ±1.4	6.4 ±1.4	6.4 ±1.4	6.0 ±1.3
Wayne County Health Department	6.4 ±0.7	6.6 ±0.7	6.5 ±0.7	6.5 ±0.7	6.0 ±0.7	6.2 ±0.7	6.7 ±0.8	7.0 ±0.8	6.9 ±0.8	6.5 ±0.8
Western Upper Peninsula District Health Department	6.8 ±3.4	9.3 ±4.0	10.0 ±4.2	7.0 ±3.5	3.7 ±2.6	4.0 ±2.7	3.9 ±2.7	5.9 ±3.3	5.2 ±3.1	6.7 ±3.5

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008

**Table 13-B  
White Three-Year Moving Average Infant Death Rates by District  
Michigan Residents, 1995-2006**

District	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	6.1 ±0.3	6.1 ±0.3	6.1 ±0.3	6.1 ±0.3	6.0 ±0.3	6.0 ±0.3	6.2 ±0.3	6.0 ±0.3	5.8 ±0.3	5.4 ±0.3
<b>Allegan County Health Department</b>	6.9 ±2.6	7.8 ±2.7	7.2 ±2.6	7.3 ±2.6	6.0 ±2.3	6.5 ±2.4	7.5 ±2.6	6.7 ±2.4	7.2 ±2.5	5.4 ±2.2
<b>Barry-Eaton District Health Department</b>	5.1 ±1.9	5.8 ±2.0	5.7 ±2.0	5.8 ±2.0	4.1 ±1.7	4.4 ±1.7	3.9 ±1.6	4.8 ±1.8	4.1 ±1.7	5.0 ±1.9
<b>Bay County Health Department</b>	7.6 ±2.7	7.7 ±2.7	5.5 ±2.3	4.5 ±2.1	5.3 ±2.3	6.0 ±2.5	6.7 ±2.6	4.6 ±2.2	5.3 ±2.4	6.1 ±2.5
<b>Benzie-Leelanau District Health Department</b>	*	*	*	*	*	*	9.3 ±5.7	11.1 ±6.3	12.7 ±6.6	7.4 ±5.1
<b>Berrien County Health Department</b>	6.6 ±2.3	4.6 ±1.9	5.5 ±2.1	4.0 ±1.8	5.1 ±2.0	5.6 ±2.1	7.2 ±2.4	6.1 ±2.3	5.8 ±2.2	5.2 ±2.1
<b>Branch-Hillsdale-St. Joseph Health Department</b>	6.6 ±2.1	6.5 ±2.1	6.2 ±2.0	5.7 ±1.9	7.5 ±2.1	7.4 ±2.1	7.9 ±2.2	6.7 ±2.0	5.9 ±1.9	6.4 ±2.0
<b>Calhoun County Health Department</b>	6.0 ±2.2	4.9 ±2.0	6.2 ±2.3	5.3 ±2.1	8.7 ±2.7	9.7 ±2.8	9.8 ±2.8	8.1 ±2.6	7.7 ±2.5	7.3 ±2.5
<b>Central Michigan District Health Department</b>	6.0 ±2.1	6.7 ±2.2	7.9 ±2.3	9.1 ±2.5	8.7 ±2.4	8.1 ±2.3	9.3 ±2.5	9.1 ±2.5	9.1 ±2.5	7.7 ±2.3
<b>Chippewa County Health Department</b>	*	*	*	6.6 ±5.3	*	6.8 ±5.4	*	*	*	6.9 ±5.5
<b>City Of Detroit Health Department</b>	6.0 ±1.7	5.9 ±1.7	6.7 ±1.8	6.3 ±1.7	6.1 ±1.7	6.7 ±1.8	7.9 ±2.0	8.0 ±2.0	7.4 ±2.0	4.7 ±1.6
<b>Dickinson-Iron District Health Department</b>	*	*	6.0 ±4.4	8.0 ±5.2	6.4 ±4.7	*	*	*	*	7.5 ±5.2
<b>District Health Department #10</b>	6.4 ±1.7	7.4 ±1.8	7.4 ±1.8	7.6 ±1.8	6.4 ±1.6	6.7 ±1.7	7.1 ±1.8	6.9 ±1.7	7.6 ±1.8	6.6 ±1.7
<b>District Health Department #2</b>	5.4 ±3.2	4.9 ±3.1	4.5 ±2.9	6.0 ±3.4	5.7 ±3.4	6.9 ±3.7	7.2 ±3.9	6.7 ±3.8	6.4 ±3.8	4.7 ±3.2
<b>District Health Department #4</b>	8.7 ±3.7	6.5 ±3.2	9.2 ±3.8	9.3 ±3.8	9.9 ±3.9	6.2 ±3.1	5.5 ±3.0	3.5 ±2.4	*	4.1 ±2.7
<b>Genesee County Health Department</b>	8.5 ±1.5	8.9 ±1.6	8.3 ±1.5	8.5 ±1.5	7.1 ±1.4	7.9 ±1.5	7.6 ±1.5	8.6 ±1.6	7.5 ±1.5	7.3 ±1.5
<b>Grand Traverse County Health Department</b>	5.8 ±2.9	5.7 ±2.9	5.3 ±2.8	5.8 ±2.8	7.2 ±3.1	6.8 ±3.1	6.3 ±3.0	4.7 ±2.5	5.0 ±2.6	5.6 ±2.7
<b>Huron County Health Department</b>	6.1 ±4.5	7.9 ±5.1	*	6.2 ±4.6	7.4 ±5.1	8.5 ±5.5	*	*	*	6.2 ±4.9
<b>Ingham County Health Department</b>	5.9 ±1.6	6.3 ±1.6	5.5 ±1.5	5.0 ±1.5	4.0 ±1.3	4.5 ±1.4	4.8 ±1.5	5.1 ±1.5	5.2 ±1.5	4.3 ±1.4
<b>Ionia County Health Department</b>	7.5 ±3.5	5.9 ±3.1	5.4 ±3.0	5.3 ±2.9	7.3 ±3.4	8.0 ±3.5	7.4 ±3.4	5.6 ±2.9	4.5 ±2.6	3.6 ±2.3
<b>Jackson County Health Department</b>	6.4 ±2.1	7.8 ±2.3	9.3 ±2.5	10.3 ±2.7	9.5 ±2.6	8.0 ±2.4	7.4 ±2.3	6.0 ±2.0	6.6 ±2.1	6.2 ±2.1

**Table 13-B  
White Three-Year Moving Average Infant Death Rates by District  
Michigan Residents, 1995-2006  
(Continued)**

District	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Kalamazoo County Human Services Department	7.9 ±2.0	8.4 ±2.0	7.0 ±1.9	6.6 ±1.8	7.2 ±1.9	8.6 ±2.1	8.5 ±2.1	6.4 ±1.8	5.4 ±1.7	4.7 ±1.6
Kent County Health Department	6.0 ±1.0	5.8 ±1.0	5.6 ±1.0	6.5 ±1.0	6.7 ±1.0	6.8 ±1.1	7.0 ±1.1	6.6 ±1.0	6.2 ±1.0	5.4 ±0.9
Lapeer County Health Department	6.7 ±2.8	8.9 ±3.2	8.5 ±3.2	7.1 ±2.9	5.9 ±2.6	5.4 ±2.5	5.4 ±2.6	3.8 ±2.2	3.0 ±1.9	3.8 ±2.2
Lenawee County Health Department	5.0 ±2.4	4.1 ±2.1	5.5 ±2.5	5.8 ±2.5	5.7 ±2.5	4.3 ±2.2	4.2 ±2.1	3.7 ±2.0	4.2 ±2.1	5.6 ±2.4
Livingston County Health Department	5.8 ±2.0	5.9 ±2.0	5.0 ±1.9	5.2 ±1.9	5.3 ±1.9	4.3 ±1.7	5.0 ±1.8	4.5 ±1.7	5.1 ±1.8	3.8 ±1.6
Luce-Mackinac-Alger-Schoolcraft Health Department	11.0 ±6.4	14.4 ±7.5	10.4 ±6.4	10.6 ±6.6	6.4 ±5.1	6.6 ±5.3	*	*	8.5 ±6.2	8.7 ±6.4
Macomb County Health Department	6.2 ±0.9	6.2 ±0.9	6.3 ±0.9	6.2 ±0.9	5.8 ±0.9	5.4 ±0.9	5.1 ±0.9	4.9 ±0.8	5.0 ±0.9	4.8 ±0.8
Marquette County Health Department	5.2 ±3.2	6.6 ±3.7	6.9 ±3.9	7.0 ±4.0	5.8 ±3.6	6.3 ±3.7	5.1 ±3.3	*	*	4.0 ±2.9
Mid-Michigan District Health Department	6.1 ±1.9	6.1 ±1.9	6.7 ±2.0	6.6 ±2.0	5.7 ±1.9	5.8 ±1.9	7.1 ±2.1	7.0 ±2.1	5.3 ±1.8	4.2 ±1.6
Midland County Health Department	5.8 ±2.7	6.8 ±3.0	8.4 ±3.3	8.0 ±3.2	8.6 ±3.3	6.3 ±2.8	5.8 ±2.8	5.6 ±2.8	6.6 ±3.1	8.3 ±3.5
Monroe County Health Department	6.0 ±2.1	5.0 ±1.9	3.9 ±1.7	3.9 ±1.7	5.2 ±2.0	7.3 ±2.4	6.3 ±2.2	5.9 ±2.1	4.8 ±1.9	7.0 ±2.3
Muskegon County Health Department	9.0 ±2.5	7.2 ±2.2	8.8 ±2.4	8.0 ±2.3	9.4 ±2.5	7.0 ±2.2	7.5 ±2.2	6.1 ±2.0	5.9 ±2.0	4.5 ±1.8
Northwest Michigan Community Health Agency	7.6 ±2.9	6.6 ±2.7	5.7 ±2.5	5.1 ±2.4	5.5 ±2.4	5.5 ±2.5	4.3 ±2.2	4.9 ±2.3	4.1 ±2.2	4.8 ±2.3
Oakland County Health Department	4.7 ±0.7	4.5 ±0.7	4.3 ±0.6	4.2 ±0.6	4.1 ±0.6	4.3 ±0.7	5.0 ±0.7	4.9 ±0.7	5.4 ±0.8	4.9 ±0.7
Ottawa County Health Department	6.6 ±1.6	6.6 ±1.6	6.1 ±1.5	6.7 ±1.6	6.9 ±1.6	7.2 ±1.6	6.8 ±1.6	5.7 ±1.5	5.1 ±1.4	5.0 ±1.4
Public Health Delta & Menominee Counties	4.8 ±3.2	3.6 ±2.6	3.6 ±2.6	4.4 ±2.9	7.9 ±3.9	8.0 ±3.9	8.7 ±4.1	6.6 ±3.7	6.6 ±3.7	3.9 ±2.9
Saginaw County Health Department	5.2 ±1.8	5.6 ±1.8	5.8 ±1.9	5.7 ±1.9	5.7 ±1.9	5.1 ±1.8	5.6 ±1.9	5.3 ±1.9	5.4 ±1.9	5.0 ±1.8
Sanilac County Health Department	6.1 ±3.8	*	4.1 ±3.1	6.2 ±3.8	8.0 ±4.3	5.7 ±3.7	5.0 ±3.5	3.8 ±3.1	4.4 ±3.2	5.8 ±3.8
Shiawassee County Health Department	5.9 ±2.9	6.5 ±3.0	6.8 ±3.1	5.4 ±2.7	4.7 ±2.6	7.7 ±3.3	8.7 ±3.5	9.9 ±3.8	9.4 ±3.7	7.8 ±3.4
St Clair County Health Department	6.7 ±2.1	5.7 ±1.9	5.5 ±1.9	5.6 ±1.9	7.0 ±2.1	6.5 ±2.0	6.1 ±2.0	7.2 ±2.1	7.5 ±2.2	7.0 ±2.1
Tuscola County Health Department	10.7 ±4.4	10.9 ±4.5	10.1 ±4.4	8.0 ±3.9	5.9 ±3.4	8.4 ±4.0	7.4 ±3.7	9.0 ±4.1	7.6 ±3.8	7.9 ±4.0

**Table 13-B**  
**White Three-Year Moving Average Infant Death Rates by District**  
**Michigan Residents, 1995-2006**  
**(Continued)**

District	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Van Buren-Cass County Health Department	7.9 ±2.7	8.9 ±2.8	9.5 ±2.9	6.8 ±2.4	5.3 ±2.2	6.0 ±2.3	6.9 ±2.5	7.1 ±2.5	6.8 ±2.5	5.6 ±2.2
Washtenaw County Health Department	5.9 ±1.6	4.8 ±1.5	4.8 ±1.5	5.3 ±1.5	6.3 ±1.7	5.9 ±1.6	5.0 ±1.5	5.2 ±1.5	4.3 ±1.4	4.5 ±1.4
Wayne County Health Department	5.4 ±0.7	5.7 ±0.7	5.7 ±0.7	5.5 ±0.7	5.1 ±0.7	5.1 ±0.7	5.8 ±0.8	5.9 ±0.8	5.6 ±0.8	5.1 ±0.8
Western Upper Peninsula District Health Department	5.9 ±3.3	8.5 ±4.0	9.3 ±4.2	7.5 ±3.8	4.0 ±2.7	3.7 ±2.7	3.7 ±2.7	5.8 ±3.4	5.2 ±3.2	6.7 ±3.7

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008

**Table 13-C**  
**Black Three-Year Moving Average Infant Death Rates by District**  
**Michigan Residents, 1995-2006**

District	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	17.5 ±0.9	17.3 ±0.9	17.4 ±1.0	17.6 ±1.0	17.7 ±1.0	17.8 ±1.0	17.6 ±1.0	17.7 ±1.0	17.5 ±1.0	16.6 ±1.0
Barry-Eaton District Health Department	*	*	*	*	*	*	*	*	*	*
Berrien County Health Department	17.3 ±6.0	19.5 ±6.4	21.7 ±6.8	23.9 ±7.1	24.0 ±7.2	20.1 ±6.8	16.7 ±6.4	11.4 ±5.4	12.0 ±5.5	11.9 ±5.5
Calhoun County Health Department	11.2 ±7.3	16.2 ±9.1	18.5 ±9.6	19.7 ±9.9	18.3 ±9.5	9.2 ±6.8	10.2 ±7.0	9.7 ±6.7	14.1 ±7.9	20.7 ±9.7
City Of Detroit Health Department	17.3 ±1.2	16.8 ±1.2	16.9 ±1.3	16.7 ±1.3	16.7 ±1.3	17.1 ±1.3	17.7 ±1.4	18.4 ±1.4	17.9 ±1.4	16.9 ±1.4
District Health Department #10	*	*	*	43.5 ±31.5	44.3 ±32.1	41.7 ±32.7	*	-	-	-
Genesee County Health Department	21.3 ±3.9	21.4 ±3.9	22.7 ±4.0	20.9 ±3.8	21.7 ±3.9	21.1 ±4.0	21.5 ±4.0	22.5 ±4.1	20.3 ±4.0	18.6 ±3.8
Ingham County Health Department	18.9 ±6.2	14.2 ±5.4	10.9 ±4.8	14.0 ±5.3	17.7 ±6.0	18.5 ±6.2	14.7 ±5.6	14.2 ±5.5	17.5 ±6.1	20.1 ±6.7
Jackson County Health Department	20.2 ±11.8	27.6 ±13.8	28.6 ±14.3	23.9 ±12.8	22.6 ±12.6	13.2 ±9.7	16.9 ±11.0	14.6 ±10.0	31.9 ±14.5	29.0 ±13.6
Kalamazoo County Human Services Department	17.1 ±6.8	12.3 ±5.6	9.9 ±5.0	13.2 ±5.7	13.9 ±5.9	20.7 ±7.2	19.4 ±6.9	20.8 ±7.1	17.9 ±6.4	16.0 ±6.1
Kent County Health Department	21.4 ±5.0	21.3 ±5.0	18.3 ±4.6	17.4 ±4.4	17.3 ±4.3	18.9 ±4.6	19.4 ±4.7	19.1 ±4.7	17.6 ±4.4	18.0 ±4.4
Macomb County Health Department	9.6 ±7.1	7.8 ±6.2	12.1 ±7.4	16.4 ±8.0	21.8 ±8.4	19.3 ±7.4	18.6 ±6.7	15.8 ±5.8	15.2 ±5.3	13.6 ±4.7
Muskegon County Health Department	9.6 ±5.0	9.8 ±5.1	13.4 ±6.0	12.4 ±5.9	12.9 ±5.9	9.1 ±5.1	13.1 ±6.2	17.6 ±7.1	17.6 ±7.0	13.4 ±6.0
Oakland County Health Department	17.2 ±3.7	19.8 ±3.9	22.0 ±4.0	23.3 ±4.1	21.0 ±3.8	21.3 ±3.9	16.8 ±3.4	16.8 ±3.4	15.4 ±3.2	16.6 ±3.3
Saginaw County Health Department	19.5 ±5.8	18.7 ±5.7	16.8 ±5.4	16.3 ±5.3	17.3 ±5.4	20.5 ±5.9	19.0 ±5.7	17.8 ±5.6	18.9 ±5.8	17.8 ±5.6
Van Buren-Cass County Health Department	*	*	18.3 ±14.5	18.6 ±14.7	19.5 ±15.4	*	*	*	30.3 ±20.7	28.5 ±20.8
Washtenaw County Health Department	12.1 ±5.3	11.8 ±5.1	12.3 ±5.1	13.5 ±5.3	15.5 ±5.6	15.3 ±5.5	16.8 ±5.8	14.3 ±5.3	16.1 ±5.5	12.1 ±4.6
Wayne County Health Department	17.0 ±3.9	15.9 ±3.7	15.5 ±3.6	16.8 ±3.7	15.4 ±3.5	16.0 ±3.5	14.6 ±3.4	16.3 ±3.5	16.6 ±3.4	15.7 ±3.1

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008

**Table 14-A**  
**Three-Year Moving Average Infant Death Rates by City**  
**Michigan Residents, 1995-2006**

City	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.1 ±0.3	8.2 ±0.3	8.1 ±0.3	8.0 ±0.3	7.6 ±0.3
<b>Ann Arbor</b>	5.3 ±2.2	4.6 ±2.1	6.0 ±2.4	7.4 ±2.6	8.6 ±2.8	7.0 ±2.6	6.3 ±2.4	4.7 ±2.1	5.3 ±2.2	5.1 ±2.2
<b>Battle Creek</b>	6.6 ±2.8	6.5 ±2.8	7.5 ±3.1	6.2 ±2.7	7.6 ±2.9	5.8 ±2.5	7.4 ±2.8	5.2 ±2.4	5.9 ±2.5	6.6 ±2.7
<b>Dearborn</b>	3.5 ±1.6	5.1 ±1.9	5.3 ±1.9	5.5 ±2.0	4.8 ±1.8	4.8 ±1.8	5.0 ±1.8	5.1 ±1.8	4.5 ±1.8	4.7 ±1.8
<b>Dearborn Heights</b>	5.7 ±3.2	5.3 ±3.1	7.1 ±3.6	6.1 ±3.3	5.1 ±3.0	3.3 ±2.5	2.8 ±2.2	3.2 ±2.4	5.4 ±3.1	6.3 ±3.3
<b>Detroit</b>	15.2 ±1.1	14.9 ±1.1	15.1 ±1.1	14.9 ±1.1	14.7 ±1.1	15.1 ±1.1	15.6 ±1.2	16.2 ±1.2	15.9 ±1.2	15.0 ±1.2
<b>East Lansing</b>	7.3 ±5.4	6.6 ±5.2	9.0 ±6.2	8.9 ±6.1	7.7 ±5.7	*	*	*	6.6 ±5.2	7.1 ±5.7
<b>Farmington Hills</b>	7.6 ±3.1	6.2 ±2.9	3.2 ±2.1	4.6 ±2.5	5.5 ±2.7	7.2 ±3.1	7.3 ±3.1	7.3 ±3.1	7.9 ±3.3	6.9 ±3.2
<b>Flint</b>	16.0 ±2.6	15.7 ±2.6	15.2 ±2.5	14.7 ±2.5	13.7 ±2.4	14.8 ±2.6	14.7 ±2.7	16.3 ±2.9	14.3 ±2.7	13.4 ±2.7
<b>Grand Rapids</b>	10.1 ±1.8	9.5 ±1.7	8.7 ±1.7	9.3 ±1.7	9.5 ±1.7	10.1 ±1.8	10.7 ±1.9	10.7 ±1.9	9.0 ±1.7	8.9 ±1.7
<b>Kalamazoo</b>	9.7 ±3.0	8.6 ±2.8	6.9 ±2.4	7.8 ±2.5	7.2 ±2.4	10.6 ±3.1	10.8 ±3.1	11.7 ±3.3	9.3 ±2.9	7.2 ±2.6
<b>Lansing</b>	9.1 ±2.2	8.6 ±2.2	8.1 ±2.1	8.2 ±2.1	7.6 ±2.1	7.8 ±2.1	7.3 ±2.0	7.7 ±2.1	8.0 ±2.1	8.0 ±2.1
<b>Lincoln Park</b>	3.6 ±2.9	4.7 ±3.3	6.0 ±3.7	5.9 ±3.7	6.1 ±3.7	6.0 ±3.7	9.7 ±4.7	10.3 ±4.9	9.3 ±4.7	5.5 ±3.6
<b>Livonia</b>	6.3 ±2.6	4.7 ±2.3	5.5 ±2.5	4.9 ±2.4	4.7 ±2.4	5.7 ±2.6	6.6 ±2.9	9.0 ±3.4	6.1 ±2.9	4.4 ±2.5
<b>Muskegon</b>	11.8 ±4.3	11.1 ±4.2	13.0 ±4.3	9.1 ±3.5	9.1 ±3.4	7.9 ±3.3	11.1 ±4.0	12.3 ±4.2	10.5 ±3.8	7.2 ±3.1
<b>Pontiac</b>	14.2 ±3.6	14.4 ±3.7	15.2 ±3.8	16.6 ±4.0	15.3 ±3.8	15.1 ±3.8	12.4 ±3.5	13.4 ±3.7	13.2 ±3.6	13.7 ±3.7
<b>Portage</b>	6.5 ±4.0	8.2 ±4.4	8.2 ±4.5	7.2 ±4.1	7.0 ±4.0	6.3 ±3.7	4.5 ±3.1	*	5.6 ±3.5	6.0 ±3.5
<b>Rochester Hills</b>	*	2.5 ±2.0	3.1 ±2.3	4.3 ±2.6	5.1 ±2.9	6.1 ±3.2	6.1 ±3.2	6.0 ±3.1	4.9 ±2.8	5.3 ±2.9
<b>Roseville</b>	8.9 ±4.0	7.8 ±3.8	4.6 ±3.0	5.1 ±3.2	6.2 ±3.5	7.8 ±3.9	6.2 ±3.5	5.2 ±3.2	3.8 ±2.8	5.4 ±3.3
<b>Royal Oak</b>	5.6 ±2.9	8.6 ±3.7	8.7 ±3.7	7.2 ±3.4	2.6 ±2.0	3.5 ±2.4	5.2 ±2.9	6.2 ±3.2	4.0 ±2.6	3.1 ±2.3
<b>Saginaw</b>	13.8 ±3.6	13.4 ±3.6	11.2 ±3.2	10.7 ±3.0	10.7 ±3.1	12.0 ±3.4	13.0 ±3.7	11.4 ±3.5	13.8 ±3.9	12.4 ±3.7

**Table 14-A**  
**All Three-Year Moving Average Infant Death Rates by City**  
**Michigan Residents, 1995-2006**  
**(Continued)**

City	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Southfield	7.6 ±3.2	9.9 ±3.7	11.1 ±3.9	10.9 ±3.8	10.8 ±3.8	10.7 ±3.8	13.5 ±4.4	12.0 ±4.2	11.9 ±4.2	10.2 ±4.0
St. Clair Shores	6.6 ±3.4	7.4 ±3.7	7.4 ±3.8	11.1 ±4.6	9.7 ±4.4	10.0 ±4.5	5.4 ±3.3	6.6 ±3.7	6.6 ±3.7	6.0 ±3.6
Sterling Heights	6.4 ±2.3	7.2 ±2.4	7.2 ±2.4	5.9 ±2.2	5.0 ±2.0	6.1 ±2.3	6.4 ±2.3	5.3 ±2.1	3.7 ±1.7	3.5 ±1.7
Taylor	9.6 ±3.4	10.0 ±3.5	9.1 ±3.4	7.7 ±3.2	6.4 ±3.0	7.7 ±3.3	8.0 ±3.3	8.6 ±3.5	9.5 ±3.7	11.0 ±4.1
Troy	3.6 ±2.2	3.0 ±2.0	2.5 ±1.9	*	2.2 ±1.8	2.2 ±1.8	3.4 ±2.2	3.1 ±2.1	4.0 ±2.4	4.5 ±2.6
Warren	7.5 ±2.3	6.4 ±2.1	5.9 ±2.1	5.4 ±2.0	5.0 ±1.9	4.8 ±1.9	5.7 ±2.1	6.4 ±2.2	7.6 ±2.4	7.7 ±2.4
Westland	5.2 ±2.3	6.8 ±2.6	7.6 ±2.8	6.2 ±2.5	5.5 ±2.4	5.6 ±2.5	6.3 ±2.6	6.6 ±2.7	6.1 ±2.6	6.5 ±2.7
Wyoming	3.1 ±1.9	4.2 ±2.2	6.4 ±2.7	8.3 ±3.0	7.4 ±2.8	6.5 ±2.7	5.3 ±2.4	6.3 ±2.6	5.9 ±2.5	8.5 ±2.9

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008



**Table 14-B**  
**White Three-Year Moving Average Infant Death Rates by City**  
**Michigan Residents, 1995-2006**

City	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	6.1 ±0.3	6.1 ±0.3	6.1 ±0.3	6.1 ±0.3	6.0 ±0.3	6.0 ±0.3	6.2 ±0.3	6.0 ±0.3	5.8 ±0.3	5.4 ±0.3
<b>Ann Arbor</b>	4.8 ±2.5	4.2 ±2.4	4.1 ±2.3	5.2 ±2.6	6.6 ±3.0	4.9 ±2.6	3.8 ±2.3	2.4 ±1.8	2.5 ±1.8	2.9 ±2.0
<b>Battle Creek</b>	4.3 ±2.6	3.7 ±2.4	5.4 ±2.9	3.9 ±2.4	5.9 ±2.9	5.5 ±2.7	6.5 ±2.9	4.2 ±2.4	3.9 ±2.3	4.3 ±2.5
<b>Dearborn</b>	3.4 ±1.6	4.9 ±1.9	5.1 ±1.9	5.4 ±2.0	4.4 ±1.8	4.1 ±1.7	4.4 ±1.7	3.7 ±1.6	3.3 ±1.6	3.5 ±1.6
<b>Dearborn Heights</b>	5.5 ±3.2	5.6 ±3.3	6.6 ±3.6	5.6 ±3.3	4.6 ±3.0	3.6 ±2.7	3.1 ±2.5	3.6 ±2.7	5.6 ±3.3	6.6 ±3.6
<b>Detroit</b>	6.0 ±1.7	5.9 ±1.7	6.7 ±1.8	6.3 ±1.7	6.1 ±1.7	6.7 ±1.8	7.9 ±2.0	8.0 ±2.0	7.4 ±2.0	4.7 ±1.6
<b>East Lansing</b>	*	*	*	*	-	-	-	-	*	*
<b>Farmington Hills</b>	6.4 ±3.1	5.2 ±2.9	2.6 ±2.1	*	2.7 ±2.2	4.7 ±2.9	5.9 ±3.3	6.6 ±3.6	6.5 ±3.7	6.6 ±3.9
<b>Flint</b>	11.2 ±3.2	11.7 ±3.3	9.0 ±2.9	8.0 ±2.7	5.2 ±2.2	6.9 ±2.7	6.7 ±2.7	8.1 ±3.0	7.2 ±2.9	6.2 ±2.8
<b>Grand Rapids</b>	6.0 ±1.6	5.8 ±1.6	6.4 ±1.7	7.3 ±1.8	7.1 ±1.7	7.0 ±1.8	7.5 ±1.8	7.0 ±1.8	5.1 ±1.5	3.5 ±1.3
<b>Kalamazoo</b>	6.9 ±3.0	6.5 ±2.9	4.4 ±2.3	4.8 ±2.3	5.7 ±2.5	7.0 ±3.0	6.7 ±3.0	6.5 ±3.0	6.1 ±2.9	5.0 ±2.6
<b>Lansing</b>	6.5 ±2.2	7.5 ±2.4	7.3 ±2.4	6.5 ±2.3	4.6 ±1.9	4.7 ±1.9	4.8 ±1.9	4.8 ±1.9	4.1 ±1.8	3.8 ±1.8
<b>Lincoln Park</b>	3.7 ±3.0	4.8 ±3.3	6.1 ±3.8	5.5 ±3.6	5.0 ±3.5	4.4 ±3.3	8.3 ±4.5	9.0 ±4.7	8.5 ±4.6	4.6 ±3.4
<b>Livonia</b>	6.5 ±2.7	4.9 ±2.4	4.8 ±2.4	4.2 ±2.3	4.0 ±2.3	5.8 ±2.8	6.4 ±3.0	8.9 ±3.6	6.2 ±3.0	4.8 ±2.7
<b>Muskegon</b>	12.0 ±5.4	10.2 ±4.8	13.8 ±5.4	8.9 ±4.1	7.6 ±3.7	5.0 ±3.1	7.6 ±4.0	8.1 ±4.1	6.3 ±3.5	4.0 ±2.7
<b>Pontiac</b>	4.9 ±3.0	5.0 ±3.1	5.6 ±3.3	7.7 ±3.9	7.9 ±3.9	8.5 ±4.0	9.6 ±4.3	8.1 ±4.0	7.9 ±3.9	4.9 ±3.0
<b>Portage</b>	6.3 ±4.1	8.3 ±4.7	8.3 ±4.7	6.5 ±4.0	4.5 ±3.3	3.8 ±3.0	*	*	3.9 ±3.1	4.4 ±3.2
<b>Rochester Hills</b>	*	*	3.4 ±2.5	3.9 ±2.7	5.0 ±3.1	4.6 ±3.0	5.8 ±3.4	4.2 ±2.9	3.5 ±2.6	3.6 ±2.7
<b>Roseville</b>	9.3 ±4.1	8.2 ±4.0	4.3 ±3.0	5.0 ±3.2	6.2 ±3.6	6.9 ±3.9	5.2 ±3.4	3.6 ±2.8	*	4.4 ±3.2
<b>Royal Oak</b>	5.4 ±2.9	7.3 ±3.5	7.0 ±3.4	5.9 ±3.2	*	*	4.2 ±2.7	5.2 ±3.1	3.9 ±2.7	*
<b>Saginaw</b>	8.1 ±3.8	7.3 ±3.7	6.8 ±3.3	4.8 ±2.7	4.1 ±2.5	2.9 ±2.3	6.6 ±3.7	6.2 ±3.7	6.3 ±3.7	3.5 ±2.8

**Table 14-B**  
**White Three-Year Moving Average Infant Death Rates by City**  
**Michigan Residents, 1995-2006**  
**(Continued)**

City	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Southfield	*	*	*	*	*	*	*	*	*	*
St. Clair Shores	6.7 ±3.5	7.1 ±3.7	7.2 ±3.8	10.5 ±4.6	9.1 ±4.3	9.4 ±4.4	5.1 ±3.3	6.4 ±3.8	5.9 ±3.6	5.3 ±3.4
Sterling Heights	6.8 ±2.5	7.2 ±2.6	7.4 ±2.6	5.9 ±2.4	5.3 ±2.3	6.4 ±2.5	6.7 ±2.6	5.7 ±2.4	4.2 ±2.1	4.1 ±2.0
Taylor	8.0 ±3.4	8.0 ±3.5	7.0 ±3.3	6.5 ±3.3	5.7 ±3.1	6.3 ±3.3	8.2 ±3.8	9.1 ±4.1	9.8 ±4.3	9.8 ±4.4
Troy	3.9 ±2.5	3.1 ±2.3	*	*	*	*	*	*	*	3.6 ±2.8
Warren	7.7 ±2.4	6.6 ±2.2	5.8 ±2.2	4.9 ±2.0	3.9 ±1.8	4.1 ±1.9	4.4 ±2.0	4.6 ±2.1	5.6 ±2.3	6.4 ±2.5
Westland	4.9 ±2.3	6.2 ±2.6	7.8 ±3.0	6.6 ±2.8	6.5 ±2.9	5.5 ±2.7	5.7 ±2.8	4.0 ±2.4	3.7 ±2.3	3.5 ±2.3
Wyoming	2.7 ±1.9	3.0 ±2.0	5.2 ±2.5	7.0 ±2.9	6.4 ±2.8	5.4 ±2.6	3.8 ±2.1	4.9 ±2.4	5.2 ±2.5	7.2 ±2.9

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008

**Table 14-C**  
**Black Three-Year Moving Average Infant Death Rates by City**  
**Michigan Residents, 1995-2006**

City	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
<b>Michigan</b>	17.5 ±0.9	17.3 ±0.9	17.4 ±1.0	17.6 ±1.0	17.7 ±1.0	17.8 ±1.0	17.6 ±1.0	17.7 ±1.0	17.5 ±1.0	16.6 ±1.0
<b>Ann Arbor</b>	*	*	18.5 ±12.7	23.6 ±14.4	21.3 ±13.8	19.8 ±12.8	19.2 ±13.2	17.7 ±12.2	22.3 ±13.7	15.0 ±11.0
<b>Battle Creek</b>	11.5 ±8.5	14.2 ±9.8	16.1 ±10.4	16.9 ±10.4	17.0 ±10.4	*	11.4 ±8.4	*	10.9 ±8.0	14.3 ±9.3
<b>Dearborn</b>	*	*	*	*	*	*	*	57.1 ±38.5	41.9 ±30.4	40.0 ±29.0
<b>Dearborn Heights</b>	*	-	*	*	*	-	-	-	*	*
<b>Detroit</b>	17.3 ±1.2	16.8 ±1.2	16.9 ±1.3	16.7 ±1.3	16.7 ±1.3	17.1 ±1.3	17.7 ±1.4	18.4 ±1.4	17.9 ±1.4	16.9 ±1.4
<b>East Lansing</b>	*	-	*	*	51.3 ±40.0	*	*	*	*	*
<b>Farmington Hills</b>	*	*	*	*	29.2 ±21.3	32.3 ±22.0	*	*	*	*
<b>Flint</b>	19.7 ±3.9	19.4 ±3.9	20.9 ±4.1	20.3 ±4.0	20.7 ±4.1	21.1 ±4.3	21.3 ±4.4	23.2 ±4.6	20.0 ±4.3	18.6 ±4.2
<b>Grand Rapids</b>	23.1 ±5.7	21.8 ±5.5	17.6 ±5.0	16.5 ±4.8	17.4 ±4.9	20.6 ±5.5	22.4 ±5.9	21.4 ±5.8	18.4 ±5.3	18.2 ±5.2
<b>Kalamazoo</b>	17.3 ±7.3	12.7 ±6.2	11.5 ±5.8	13.8 ±6.3	11.0 ±5.7	19.6 ±7.8	19.5 ±7.7	22.8 ±8.4	16.5 ±7.0	12.6 ±6.1
<b>Lansing</b>	18.3 ±6.4	13.8 ±5.6	10.1 ±4.8	12.4 ±5.3	15.2 ±5.8	17.2 ±6.2	14.0 ±5.7	14.9 ±5.9	17.8 ±6.4	20.7 ±7.1
<b>Lincoln Park</b>	-	-	-	-	-	*	*	*	-	*
<b>Livonia</b>	-	-	*	*	*	-	*	*	*	-
<b>Muskegon</b>	11.9 ±7.7	12.4 ±8.0	10.7 ±7.4	9.2 ±6.7	11.0 ±7.1	13.1 ±8.1	17.7 ±9.5	23.7 ±11.1	21.2 ±10.0	14.9 ±8.0
<b>Pontiac</b>	24.4 ±6.8	24.3 ±6.9	25.8 ±7.1	26.9 ±7.3	24.4 ±7.0	23.8 ±7.1	16.9 ±6.2	20.1 ±6.8	19.7 ±6.8	23.6 ±7.2
<b>Portage</b>	-	-	-	*	*	*	*	*	*	*
<b>Rochester Hills</b>	*	*	-	*	*	*	-	-	-	-
<b>Roseville</b>	-	-	*	*	*	*	*	*	*	*
<b>Royal Oak</b>	-	*	*	*	*	*	*	*	*	*
<b>Saginaw</b>	20.2 ±6.4	20.6 ±6.6	17.3 ±5.9	18.3 ±6.1	19.3 ±6.3	22.0 ±6.7	19.8 ±6.5	16.9 ±6.1	21.4 ±6.9	21.2 ±6.9

**Table 14-C**  
**Black Three-Year Moving Average Infant Death Rates by City**  
**Michigan Residents, 1995-2006**  
**(Continued)**

City	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Southfield	11.5 ±5.6	15.1 ±6.3	17.8 ±6.6	17.3 ±6.3	17.1 ±6.2	15.1 ±5.8	17.7 ±6.3	14.8 ±5.7	14.2 ±5.6	12.3 ±5.2
St. Clair Shores	-	-	-	-	-	-	-	-	*	*
Sterling Heights	-	*	*	*	*	*	*	*	-	-
Taylor	20.1 ±13.0	22.8 ±14.0	21.7 ±13.3	15.3 ±11.2	*	16.2 ±11.9	*	*	*	17.5 ±11.3
Troy	*	-	-	-	-	-	*	*	*	*
Warren	*	*	*	*	27.0 ±21.3	*	20.5 ±15.1	19.6 ±13.4	18.9 ±12.2	14.2 ±9.8
Westland	*	*	*	*	-	*	*	28.9 ±16.9	23.3 ±14.3	19.2 ±11.8
Wyoming	*	*	*	*	*	*	*	*	*	*

**Notes:** Rate is per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

\*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

**Source:** 1995- 2006 Michigan Resident Death Files and Michigan Resident Birth Files, Vital Records & Health Data Development Section, Michigan Department of Community Health

**Created:** 12/2/2008