
MICHIGAN DEPARTMENT OF COMMUNITY HEALTH

Division for Vital Records and Health Statistics

MICHIGAN INFANT DEATH STATISTICS

January 1 through December 31, 2009

*Michigan Department
of Community Health*



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SUMMARY OF 2009 INFANT DEATH STATISTICS

INFANT MORTALITY: For every 1,000 Michigan live births, approximately eight infants die before reaching their first birthday. In 2009, 881 infants under the age of one year died, resulting in an infant mortality rate of 7.5 per 1,000 live births. Michigan experienced a significant decline in infant mortality during 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 2009 the white infant mortality rate was 5.4 per 1,000 live births while the black rate was 15.5 per 1,000 live births. The infant mortality rate for infants of other races was 6.6 per 1,000 live births. (See Table 2.)

The Michigan infant mortality rate continues to be higher than the national rate. The provisional 2009 infant death rate for the United States is 6.3. (See Table 7.)

LIVE BIRTHS: Live births decreased in Michigan in 2009. Between 2008 and 2009 live births to Michigan residents decreased 3.2 percent, from 121,231 in 2008 to 117,309 in 2009. Nationally, there were 4,131,019 births in the U.S. in 2009, a decline of 4% from the record number reported for 2007.

CHARACTERISTICS OF NEWBORN: Certain newborns are at higher risk of dying. In 2009 infants born with very low birth weight (less than 1,500 grams) experienced an infant death rate of 254.1 per 1,000 live births compared to a rate of 2.4 for those infants weighing 2,500 grams or more. Multiple birth infants had an infant mortality rate of 34.7 per 1,000 live births compared to the rate of 6.5 for single birth infants. The infant mortality rate was higher for male infants (8.3 per 1,000 male live births) than for female infants (6.7 per 1,000 female 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. Unmarried mothers had infant mortality rates nearly twice those of married mothers. Women receiving inadequate prenatal care experienced infant mortality rates three times as high as those women receiving adequate prenatal care. Mothers who reported smoking while pregnant had an infant death rate of 8.4 per 1,000 live births compared to a rate of 7.3 for mothers who reported not smoking during pregnancy. (See Table 6.)

COMMUNITY LEVEL DATA: Infant mortality data are available for most communities in Michigan. On the Internet, go to Michigan's community health information site at www.michigan.gov/healthstatistics. Data for local health department districts, counties and major cities and townships can be reached by choosing "Infant Mortality" in the left menu. Those who do not have access to the Internet may request that community level data be mailed to them from the address below.

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Data Quality Considerations

Minor civil division (MCD) data contained in vital statistics data files, and reports developed from the files, are based upon the information supplied to the department in the course of registering vital events. Special studies of MCD data quality revealed that there are inaccuracies in these data. The degree of inaccuracy encountered is as high as 25 percent. Any use of these data, especially for comparisons across MCDs, may be affected by inaccurate reporting. The most common misallocation error occurs with smaller cities or villages, surrounded by a township. People providing information for the vital record stipulate that the subject of the vital record or the decedent lives in a city, rather than in a township which was their actual residence. This is usually because the subject's post office address is the city. When rates calculated from these data differ substantially from State or county rates, one should consider whether the events were allocated to the proper MCD.

Table 1
Number of Infant Deaths
Live Births and Infant Death Rates
Michigan Residents, 1970 - 2009

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

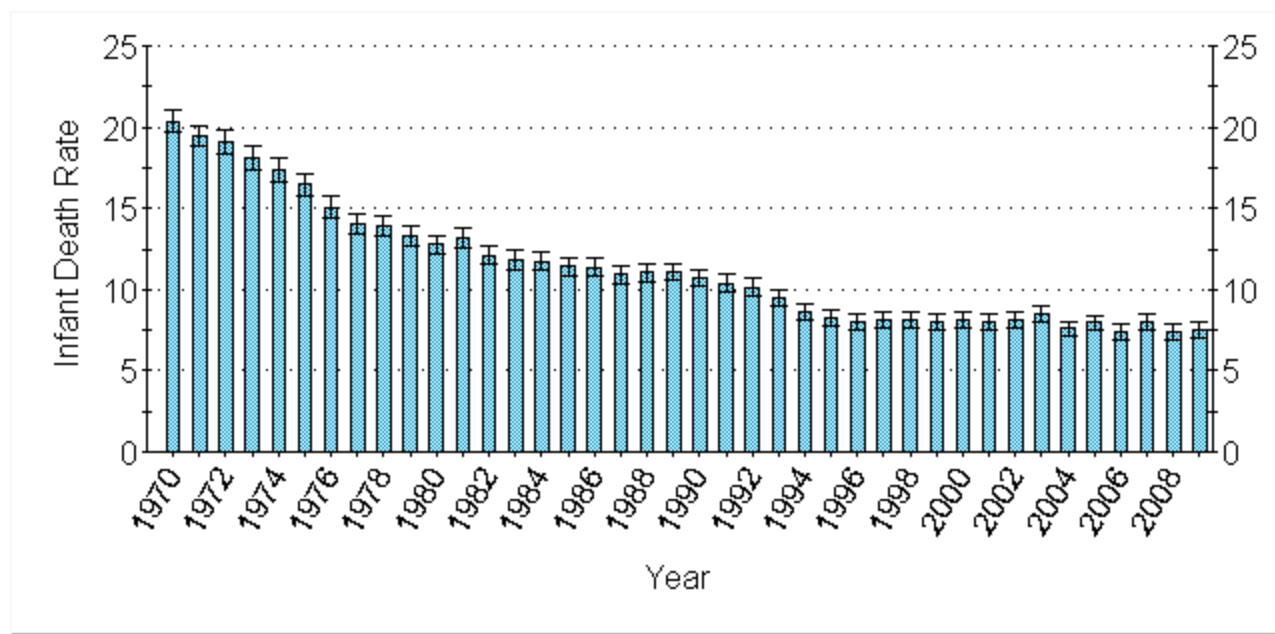
Table 1
Number of Infant Deaths
Live Births and Infant Death Rates
Michigan Residents, 1970 - 2009
(Continued)

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
2007	997	125,172	8.0 ±0.5
2008	894	121,231	7.4 ±0.5
2009	881	117,309	7.5 ±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 - 2009 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Community Health

Figure 1
Infant Death Rates, Michigan Residents, 1970-2009



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- 2009 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Community Health

Table 2
Number of Infant Deaths, Live Births and Infant Death Rates By Race
Michigan Residents, 1970 - 2009

Year	White			Black			Other ¹		
	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 - 2009
(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
2007	549	93,868	5.8 ±0.5	368	22,314	16.5 ±1.7	74	6,932	10.7 ±2.4
2008	496	91,509	5.4 ±0.5	332	22,695	14.6 ±1.6	61	6,691	9.1 ±2.3
2009	470	87,471	5.4 ±0.5	346	22,292	15.5 ±1.6	46	6,980	6.6 ±1.9

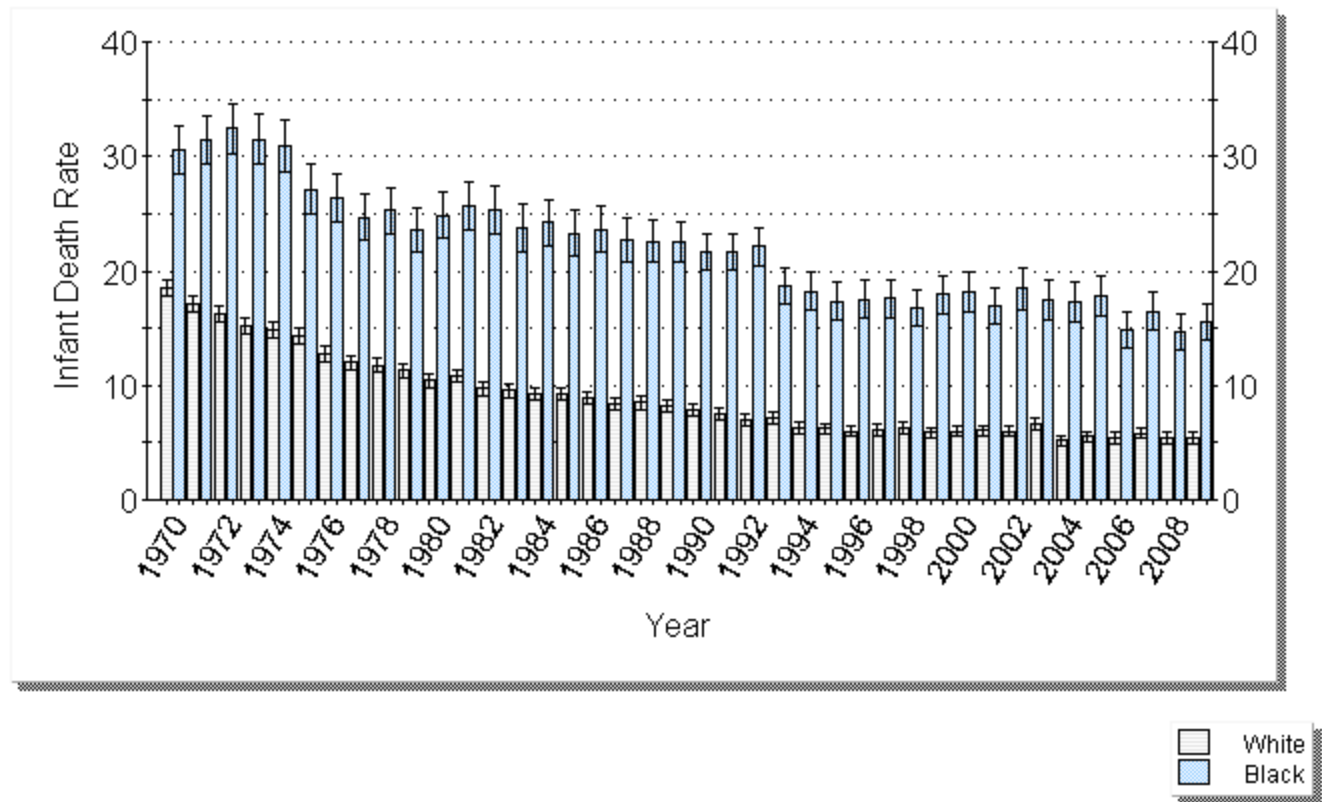
Note: Infant deaths by race of infant; live births used in calculating infant death rates are by race of mother. Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower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

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

¹Between 2004-2008, multi-racial infants were reported as "other."

Source: 1970 - 2009 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Community Health

Figure 2
Comparison of White and Black Infant Death Rates for Michigan Residents, 1970-2009



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- 2009 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Community Health

Table 3
Number of Infant Deaths, Live Births and Infant Death Rates by
Michigan and Michigan County of Residence,
2009 and 2005 - 2009 Average

County of Residence	2009			2005 - 2009		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
MICHIGAN	881	117,309	7.5 ±0.5	945.0	123,753.4	7.6 ±0.2
Alcona	2	70	*	1.0	68.0	*
Alger	1	75	*	0.6	78.8	*
Allegan	5	1,469	*	9.6	1,501.8	6.4 ±1.8
Alpena	3	284	*	1.8	295.4	6.1 ±4.0
Antrim	1	222	*	1.4	233.8	6.0 ±4.4
Arenac	2	126	*	0.6	154.4	*
Baraga	-	66	-	0.6	83.4	*
Barry	5	634	*	4.6	685.0	6.7 ±2.7
Bay	8	1,184	6.8 ±4.7	9.2	1,224.6	7.5 ±2.2
Benzie	-	170	-	1.4	188.6	7.4 ±5.5
Berrien	18	1,999	9.0 ±4.1	18.4	2,070.2	8.9 ±1.8
Branch	2	535	*	2.8	591.0	4.7 ±2.5
Calhoun	20	1,704	11.7 ±5.1	19.4	1,816.4	10.7 ±2.1
Cass	5	541	*	4.6	523.2	8.8 ±3.6
Charlevoix	2	231	*	1.4	266.0	5.3 ±3.9
Cheboygan	2	224	*	1.0	250.4	*
Chippewa	-	409	-	2.2	384.0	5.7 ±3.4
Clare	2	348	*	1.8	349.4	5.2 ±3.4
Clinton	2	710	*	2.4	783.6	3.1 ±1.7
Crawford	1	134	*	1.8	132.8	13.6 ±8.8
Delta	2	403	*	1.6	394.8	4.1 ±2.8
Dickinson	2	231	*	2.0	258.6	7.7 ±4.8
Eaton	5	1,157	*	5.6	1,144.6	4.9 ±1.8
Emmet	1	320	*	1.4	348.2	4.0 ±3.0
Genesee	51	5,412	9.4 ±2.6	53.6	5,839.2	9.2 ±1.1
Gladwin	2	235	*	1.6	251.8	6.4 ±4.4
Gogebic	-	139	-	0.8	146.4	*
Gd. Traverse	6	944	6.4 ±5.1	6.6	972.8	6.8 ±2.3
Gratiot	3	493	*	3.2	481.2	6.7 ±3.2
Hillsdale	1	527	*	3.4	565.2	6.0 ±2.9

Table 3
Number of Infant Deaths, Live Births and Infant Death Rates by
Michigan and Michigan County of Residence,
2009 and 2005 - 2009 Average
(Continued)

County of Residence	2009			2005 - 2009		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Houghton	1	410	*	2.2	406.8	5.4 ±3.2
Huron	3	309	*	1.8	321.8	5.6 ±3.6
Ingham	21	3,351	6.3 ±2.7	25.2	3,541.6	7.1 ±1.2
Ionia	1	758	*	2.8	820.6	3.4 ±1.8
Iosco	3	211	*	1.4	211.2	6.6 ±4.9
Iron	1	117	*	0.4	96.6	*
Isabella	4	715	*	5.2	734.0	7.1 ±2.7
Jackson	12	1,850	6.5 ±3.7	16.6	1,980.2	8.4 ±1.8
Kalamazoo	29	3,066	9.5 ±3.4	23.8	3,141.0	7.6 ±1.4
Kalkaska	1	193	*	0.8	210.4	*
Kent	56	8,892	6.3 ±1.6	68.2	9,249.6	7.4 ±0.8
Keweenaw	-	27	-	0.2	19.8	*
Lake	2	111	*	1.2	114.2	10.5 ±8.4
Lapeer	11	848	13.0 ±7.6	6.2	918.6	6.7 ±2.4
Leelanau	-	178	-	0.6	181.2	*
Lenawee	8	1,068	7.5 ±5.2	8.8	1,183.8	7.4 ±2.2
Livingston	12	1,642	7.3 ±4.1	10.6	1,821.8	5.8 ±1.6
Luce	-	61	-	1.0	60.6	*
Mackinac	1	78	*	1.0	92.4	*
Macomb	76	9,298	8.2 ±1.8	63.4	9,780.0	6.5 ±0.7
Manistee	2	203	*	1.4	226.8	6.2 ±4.6
Marquette	4	697	*	3.2	657.2	4.9 ±2.4
Mason	1	295	*	1.8	321.2	5.6 ±3.7
Mecosta	-	460	-	3.0	452.6	6.6 ±3.3
Menominee	1	219	*	1.0	227.4	*
Midland	5	869	*	5.4	885.2	6.1 ±2.3
Missaukee	1	181	*	0.6	175.4	*
Monroe	10	1,713	5.8 ±3.6	11.4	1,715.4	6.6 ±1.7
Montcalm	4	710	*	2.8	793.2	3.5 ±1.8
Montmorency	-	74	-	0.2	74.2	*

Table 3
Number of Infant Deaths, Live Births and Infant Death Rates by
Michigan and Michigan County of Residence,
2009 and 2005 - 2009 Average
(Continued)

County of Residence	2009			2005 - 2009		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Muskegon	15	2,283	6.6 ±3.3	15.2	2,361.4	6.4 ±1.4
Newaygo	3	570	*	4.8	630.8	7.6 ±3.0
Oakland	78	13,406	5.8 ±1.3	90.6	14,074.2	6.4 ±0.6
Oceana	2	339	*	3.0	377.6	7.9 ±4.0
Ogemaw	1	193	*	1.0	199.2	*
Ontonagon	-	39	-	0.4	45.4	*
Osceola	1	286	*	1.8	286.8	6.3 ±4.1
Oscoda	1	81	*	0.6	82.8	*
Otsego	1	259	*	1.8	279.0	6.5 ±4.2
Ottawa	16	3,243	4.9 ±2.4	19.0	3,449.8	5.5 ±1.1
Presque Isle	1	95	*	1.0	107.2	*
Roscommon	1	175	*	1.4	184.2	7.6 ±5.6
Saginaw	26	2,422	10.7 ±4.1	24.6	2,511.8	9.8 ±1.7
St. Clair	14	1,779	7.9 ±4.1	12.2	1,905.8	6.4 ±1.6
St. Joseph	10	838	11.9 ±7.4	8.8	929.6	9.5 ±2.8
Sanilac	3	481	*	3.2	501.8	6.4 ±3.1
Schoolcraft	-	69	-	0.6	74.2	*
Shiawasee	2	716	*	5.0	798.6	6.3 ±2.4
Tuscola	4	573	*	3.6	611.6	5.9 ±2.7
Van Buren	5	1,033	*	7.2	1,043.6	6.9 ±2.2
Washtenaw	21	3,781	5.6 ±2.4	21.8	4,021.2	5.4 ±1.0
Wayne	250	24,646	10.1 ±1.3	275.0	26,328.2	10.4 ±0.5
Wexford	2	400	*	3.4	433.2	7.8 ±3.7
Unknown	-	2	-	-	17.0	-

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: 2005 - 2009 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Community Health

Table 4
Number of Infant Deaths, Live Births and Infant Death Rates for
Selected Cities of Residence, 2009 and 2005 - 2009 Average

City of Residence	2009			2005 - 2009		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Ann Arbor	8	1,254	6.4 ±4.4	6.8	1,329.2	5.1 ±1.7
Battle Creek	9	1,076	8.4 ±5.4	10.2	1,148.8	8.9 ±2.4
Dearborn	8	1,698	4.7 ±3.3	10.6	1,789.0	5.9 ±1.6
Dearborn Heights	4	781	*	5.4	773.4	7.0 ±2.6
Detroit	166	11,199	14.8 ±2.2	181.4	12,272.4	14.8 ±1.0
East Lansing	-	268	-	1.2	269.0	4.5 ±3.6
Farmington Hills	3	795	*	5.6	821.0	6.8 ±2.5
Flint	28	2,174	12.9 ±4.7	25.8	2,315.2	11.1 ±1.9
Grand Rapids	28	3,592	7.8 ±2.9	31.8	3,735.6	8.5 ±1.3
Kalamazoo	10	1,738	5.8 ±3.6	10.2	1,548.2	6.6 ±1.8
Kentwood	3	711	*	4.8	759.8	6.3 ±2.5
Lansing	18	2,095	8.6 ±4.0	19.2	2,169.8	8.8 ±1.8
Livonia	2	799	*	3.6	872.2	4.1 ±1.9
Midland	3	502	*	3.4	480.0	7.1 ±3.4
Muskegon	-	-	-	3.8	799.6	4.8 ±2.1
Novi	2	560	*	2.0	584.6	3.4 ±2.1
Pontiac	20	1,090	18.3 ±8.0	16.4	1,187.4	13.8 ±3.0
Portage	11	591	18.6 ±10.9	5.6	606.8	9.2 ±3.4
Rochester Hills	2	707	*	4.0	776.8	5.1 ±2.3
Roseville	5	579	*	5.2	607.6	8.6 ±3.3
Royal Oak	4	826	*	2.6	753.8	3.4 ±1.9
Saginaw	22	1,034	21.3 ±8.8	16.6	1,093.6	15.2 ±3.2
Southfield	9	743	12.1 ±7.9	9.2	783.8	11.7 ±3.4
St Clair Shores	5	600	*	3.0	614.6	4.9 ±2.5
Sterling Heights	8	1,451	5.5 ±3.8	9.0	1,493.4	6.0 ±1.8
Taylor	4	819	*	7.4	842.6	8.8 ±2.8
Troy	3	763	*	4.4	797.0	5.5 ±2.3
Warren	18	1,621	11.1 ±5.1	13.2	1,677.6	7.9 ±1.9
Westland	7	1,131	6.2 ±4.6	7.6	1,115.8	6.8 ±2.2
Wyoming	10	1,245	8.0 ±5.0	12.8	1,256.4	10.2 ±2.5

Note: This table shows cities with (1) populations greater than 40,000 according to 2007 estimates and (2) three-year average births of greater than 200. Some city rates may be subject to MCD residence misallocation errors. See [Data Quality Considerations](#) for further details. 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: 2005 - 2009 Michigan Resident Birth & Death Files, Division for Vital Records & Health Statistics, 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- 2009

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- 2009
(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
2007	Total	997	8.0 ±0.5	181	14.9 ±2.1	93	6.5 ±1.3	723	7.3 ±0.5
	White	549	5.8 ±0.5	14	7.6 ±4.0	58	5.4 ±1.4	477	5.9 ±0.5
	Black	368	16.5 ±1.7	156	16.1 ±2.5	24	11.0 ±4.4	188	17.9 ±2.5
2008	Total	894	7.4 ±0.5	175	14.9 ±2.2	100	7.1 ±1.4	619	6.5 ±0.5
	White	496	5.4 ±0.5	8	4.8 ±3.3	63	5.9 ±1.4	425	5.4 ±0.5
	Black	332	14.6 ±1.6	159	16.7 ±2.6	27	11.9 ±4.5	146	13.4 ±2.2
2009	Total	881	7.5 ±0.5	166	14.8 ±2.2	84	6.2 ±1.3	631	6.8 ±0.5
	White	470	5.4 ±0.5	6	4.3 ±3.4	54	5.4 ±1.4	410	5.4 ±0.5
	Black	346	15.5 ±1.6	151	16.6 ±2.6	21	8.7 ±3.7	174	16.1 ±2.4

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- 2009 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, 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, 2009

Characteristics of Newborn	Infant Deaths	Live Births	Infant Death Rate
Sex of Infant	881	117,309	7.5 ±0.5
Male	498	60,162	8.3 ±0.7
Female	381	57,144	6.7 ±0.7
Birthweight	881	117,309	7.5 ±0.5
1,499 Grams or Less	496	1,952	254.1 ±19.7
1,500 - 2,499 Grams	122	7,894	15.5 ±2.7
2,500 Grams or More	256	107,406	2.4 ±0.3
Plurality	881	117,309	7.5 ±0.5
Single Birth	731	112,981	6.5 ±0.5
Multiple Birth	150	4,320	34.7 ±5.5
Characteristics of Mother	Infant Deaths	Live Births	Infant Death Rate
Age of Mother	881	117,309	7.5 ±0.5
< 20	116	11,841	9.8 ±1.8
20 - 29	484	62,957	7.7 ±0.7
30 - 39	251	39,723	6.3 ±0.8
40 +	30	2,786	10.8 ±3.8
Marital Status	881	117,309	7.5 ±0.5
Married	371	68,654	5.4 ±0.5
Unmarried	510	48,655	10.5 ±0.9
Level of Prenatal Care	881	117,309	7.5 ±0.5
Adequate	453	79,754	5.7 ±0.5
Intermediate	224	25,112	8.9 ±1.2
Inadequate	161	9,347	17.2 ±2.6

Table 6
Number of Infant Deaths, Live Births and Infant Death Rates
by Selected Characteristics of Newborn and of Mother
for Michigan Residents, 2009
(Continued)

Exposure to Tobacco	Infant Deaths	Live Births	Infant Death Rate
Smoked During Pregnancy	881	117,309	7.5 ±0.5
No	701	95,982	7.3 ±0.5
Yes	180	21,327	8.4 ±1.2
Secondhand Smoke During Pregnancy	881	117,309	7.5 ±0.5
No	600	91,169	6.6 ±0.5
Yes	177	19,694	9.0 ±1.3
Smoked or Secondhand Smoke During Pregnancy	881	117,309	7.5 ±0.5
No	544	82,583	6.6 ±0.6
Yes	254	29,319	8.7 ±1.1
History of smoking	881	117,309	7.5 ±0.5
No	619	91,868	6.7 ±0.5
Yes	228	24,169	9.4 ±1.2

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: 2009 Michigan Resident Birth-Death Matched File, Division for Vital Records & Health Statistics, Michigan Department of Community Health

Table 7
Number and Rate of Infant Deaths by Race,
Michigan and United States Residents, 1989 - 2009

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	28,440	6.9	18,514	5.7	8,695	13.7	1,013	7.9	549	5.5	400	17.9
2006	28,527	6.7	18,403	5.6	8,858	13.3	940	7.4	534	5.4	339	14.8
2007	29,138	6.8	18,807	5.6	8,944	13.2	997	8.0	549	5.8	368	16.5
2008	28,029	6.6	18,162	6.6	8,513	12.7	894	7.4	496	5.4	332	14.6
2009	26,200	6.3	---	---	---	---	881	7.5	470	5.4	346	15.5

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.

The United States data for 2008 and 2009 is provisional.

---: Data not available.

Source: 1989 - 2009 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Community Health. [National Vital Statistics Reports \(NVSr\)](#), "Births, Marriages, Divorces and Deaths: Provisional Data for 2009". August 27, 2010. Vol 58, No 25.6; NVSR. "Deaths: Preliminary Data for 2008". December 9, 2010, Vol 59, No 2; NVSR. "Deaths: Final Data for 2007". NVSR Volume 58, Number 19. 73. May 20, 2010. "Deaths: Final Data for 2006", Vol 57, No. 14, April 2009; and [National Center for Health Statistics, historical data.](#)

Table 8-A
Number of Hispanic and Arabic Infant Deaths by Selected County and Michigan
Michigan Residents, 2000 - 2009

Hispanic Infant Deaths

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Michigan	46	53	59	73	78	96	94	94	76	77
Hispanic Infant Death Rates	6.6	7.2	8.2	9.6	10.0	11.4	11.0	10.8	8.8	9.3
Allegan	3	2	-	2	1	2	2	-	2	1
Genesee	1	-	4	3	4	3	5	5	2	1
Ingham	2	1	5	5	4	4	2	3	2	8
Kalamazoo	2	2	1	1	-	4	2	4	3	-
Kent	13	11	14	13	14	14	27	14	16	6
Lenawee	1	2	-	-	1	-	1	2	-	3
Macomb	2	3	-	3	1	1	3	6	3	4
Muskegon	2	2	1	1	3	1	1	2	2	3
Oakland	2	4	3	5	7	13	7	5	9	9
Ottawa	4	5	4	2	3	4	4	3	3	4
Saginaw	-	-	-	2	1	3	3	8	4	5
Van Buren	1	1	1	1	2	7	-	2	2	-
Washtenaw	-	-	-	1	1	2	2	1	3	4
Wayne	5	7	13	22	17	14	15	19	15	13
All Other Counties	8	13	13	12	19	24	20	20	10	16

Table 8-A
Number of Hispanic and Arabic Infant Deaths by Selected County and Michigan
Michigan Residents, 2000 - 2009 (Continued)

Arabic Infant Deaths

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Michigan	20	18	22	19	12	24	31	32	34	22
Arabic Infant Death Rates	5.9	4.8	5.7	5.1	3.3	6.3	7.6	8.0	8.5	5.8
Macomb	2	1	7	3	2	2	5	3	7	6
Oakland	1	3	1	2	1	5	3	4	8	2
Wayne	12	11	13	13	5	13	22	23	16	10
All Other Counties	5	3	1	1	4	4	1	2	3	4

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: 2009 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Community Health.

Table 9
Infant, Hebdomadal, Fetal and Perinatal Death Rates
by Specified Race and Ancestry
Michigan Residents, 2009

Race/Ancestry	Live Births	Infant Deaths		Hebdomadal Deaths		Fetal Deaths		Perinatal Deaths	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Races	117,309	881	7.5 ±0.5	478	4.1 ±0.4	689	5.8 ±0.4	1,167	9.9 ±0.6
White	87,471	470	5.4 ±0.5	255	2.9 ±0.4	333	3.8 ±0.4	588	6.7 ±0.5
Black	22,292	346	15.5 ±1.6	182	8.2 ±1.2	198	8.8 ±1.2	380	16.9 ±1.7
American Indian	776	7	9.0 ±6.7	6	7.7 ±6.2	4	*	10	12.8 ±7.9
Asian and Pacific Islander	4,072	19	4.7 ±2.1	14	3.4 ±1.8	12	2.9 ±1.7	26	6.4 ±2.4
Arabic	3,766	22	5.8 ±2.4	15	4.0 ±2.0	15	4.0 ±2.0	30	7.9 ±2.8
Hispanic	8,253	77	9.3 ±2.1	49	5.9 ±1.7	41	4.9 ±1.5	90	10.9 ±2.2

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: 2009 Michigan Resident Infant Death File, 2009 Michigan Fetal Death Registry Division for Vital Records & Health Statistics, Michigan Department of Community Health.

Table 10
Number of Infant Deaths by Cause of Death,
1980-2009, Michigan Residents

Causes of Death	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
All Causes	2,280	1,575	1,638	1,110	1,112	1,066	1,054	1,112	984	1,013	940	997	894	881
Certain gastrointestinal diseases	7	6	6	6	10	6	9	16	11	12	11	12	11	12
Septicemia	8	6	17	2	5	7	8	10	2	10	3	9	9	8
Remainder of infectious and parasitic diseases	5	11	18	12	7	7	7	5	5	6	10	3	6	2
Meningitis	13	7	11	2	3	-	2	4	1	3	4	3	1	1
Pneumonia and Influenza	27	11	26	20	20	13	9	10	10	6	8	4	9	5
Congenital anomalies	321	330	300	204	192	174	186	200	184	197	185	194	172	181
Newborn affected by maternal complications of pregnancy	72	52	108	47	45	64	119	90	73	67	72	67	54	62
Newborn affected by complications of placenta, cord and membranes	50	34	24	33	36	38	23	27	21	28	26	25	26	24
Disorders relating to short gestation and unspecified low birthweight	145	150	251	219	262	247	191	225	207	219	201	234	209	183
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	7	15	7
Respiratory distress syndrome	206	176	164	82	65	58	57	46	56	57	36	42	41	23
Other respiratory conditions	199	132	120	63	65	63	44	53	44	52	28	52	29	42
Infections specific to the perinatal period	35	32	33	23	35	43	40	34	43	42	29	40	39	26
Neonatal hemorrhage	38	10	8	13	28	15	7	28	27	23	16	9	9	17
All other and ill-define conditions originating in the perinatal period	169	168	73	47	39	46	39	55	45	46	67	50	46	62
Sudden infant death syndrome	260	228	257	148	99	96	85	49	51	47	51	46	48	45
Accidents and adverse effects	39	35	38	40	55	57	72	64	70	68	71	77	62	74
Homicides	7	8	17	12	13	10	10	7	8	15	9	7	10	10
All other causes	136	122	126	118	107	104	119	162	104	95	106	116	98	97

Note: Causes of death are coded using the 9th and 10th revisions to the International Classification of Diseases. The ICD-9 and ICD-10 codes are grouped into broader categories for the causes listed in this table in order to classify these selected causes of death. See [Selected Causes of Groups for Infant Mortality](#) for details of grouping and comparability.

Source: 1980-2009 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Community Health.

Table 11
Three-year Moving Average Infant Deaths Rates per 10,000 Live Births, by Cause of Death,
1980-2009, Michigan Residents

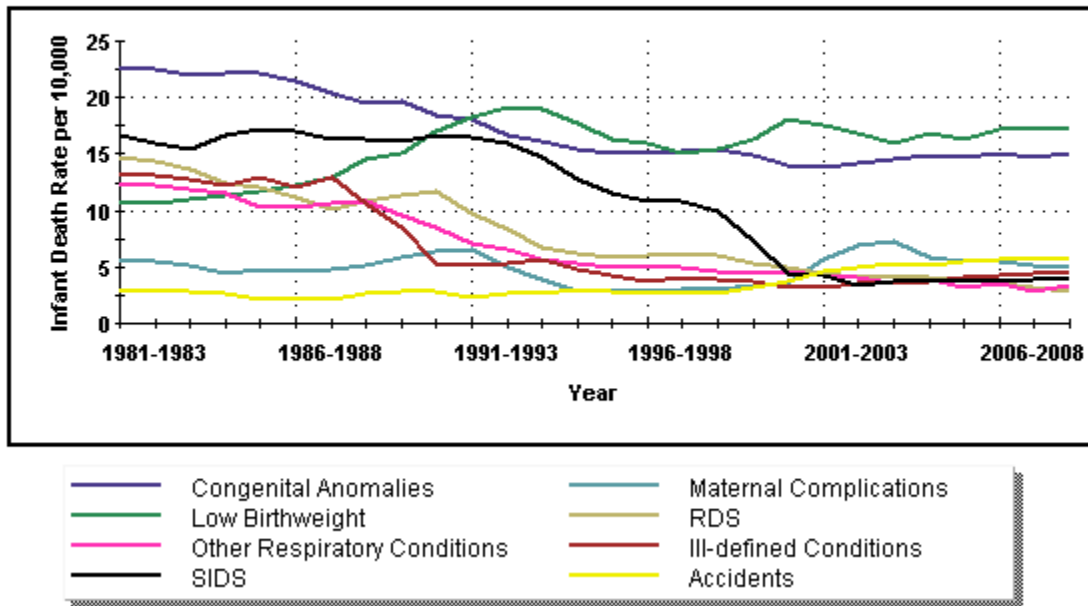
Causes of Death	1980 to 1982	1985 to 1987	1990 to 1992	1995 to 1997	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009
Total Infant Deaths	126.8	112.4	104.2	81.5	81.0	82.1	80.8	80.1	76.3	77.6	75.7	76.2
Certain gastrointestinal diseases	.6	.6	.6	.6	.6	.8	.9	1.0	.9	.9	.9	1.0
Septicemia	.4	.5	.9	.4	.5	.6	.5	.6	.4	.6	.6	.7
Remainder of infectious and parasitic diseases	.4	.8	1.1	.6	.5	.5	.4	.4	.5	.5	.5	.3
Meningitis	.9	.4	.4	*	*	.2	.2	.2	.2	.3	.2	*
Pneumonia and Influenza	1.4	1.1	1.8	1.1	1.1	.8	.7	.7	.6	.5	.6	.5
Congenital anomalies	22.7	21.4	18.1	15.1	13.8	14.2	14.6	15.0	14.7	15.1	14.7	15.0
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	5.4	5.2	5.0
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	2.1	2.1	2.1
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	17.2	17.2	17.2
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	.9	.8	.8
Respiratory distress syndrome	14.8	11.2	9.7	6.1	4.5	4.1	4.1	4.1	3.9	3.6	3.2	2.9
Other respiratory conditions	12.2	10.2	7.1	5.1	4.3	4.1	3.6	3.8	3.2	3.5	2.9	3.4
Infections specific to the perinatal period	2.2	2.3	2.2	2.1	3.0	3.0	3.0	3.1	3.0	2.9	2.9	2.9
Neonatal hemorrhage	2.0	.7	.6	.8	1.3	1.3	1.6	2.0	1.7	1.3	.9	1.0
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	4.3	4.4	4.3
Sudden infant death syndrome	16.6	17.1	16.6	10.8	4.3	3.4	3.7	3.8	3.7	3.8	3.9	3.8
Accidents and adverse effects	2.8	2.1	2.4	2.7	4.6	4.9	5.3	5.2	5.4	5.7	5.6	5.9
Homicides	.4	.9	.9	.9	.8	.7	.6	.8	.8	.8	.7	.7
All other causes	9.7	8.6	7.6	7.9	8.3	9.8	9.9	9.3	7.9	8.3	8.6	8.6

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**. **Causes of death** are coded using the 9th and 10th revisions to the International Classification of Diseases. The ICD-9 and ICD-10 codes are grouped into broader categories for the causes listed in this table in order to classify these selected causes of death. See [Selected Causes of Groups for Infant Mortality](#) for details of grouping and comparability.

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

Source: 1980-2009 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Community Health.

Figure 3
Three-year Average Infant Death Rates by Cause,
Michigan Residents, 1980-2009



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**.

Causes of death are coded using the 9th and 10th revisions to the International Classification of Diseases. The ICD-9 and ICD-10 codes are grouped into broader categories for the causes listed in this table in order to classify these selected causes of death. See [Selected Causes of Groups for Infant Mortality](#) for details of grouping and comparability.

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

Source: 1980-2009 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Community Health.

Table 12-A
Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 1998-2009

County	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	7.8±0.3	7.6±0.3	7.6±0.3
Alcona	*	*	*	*	*	*	*	*	*	*
Alger	*	-	*	*	*	*	-	-	*	*
Allegan	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	8.1±2.6	6.8±2.4	6.3±2.3
Alpena	12.9±7.0	9.9±6.1	*	*	*	*	*	*	6.6±5.3	*
Antrim	*	8.3±6.6	*	*	*	*	*	*	8.5±6.8	*
Arenac	*	*	*	*	*	*	*	*	*	*
Baraga	*	*	*	*	*	*	*	*	*	*
Barry	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	6.2±3.4	8.1±3.8	7.5±3.8
Bay	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	8.0±2.9	7.6±2.8	6.6±2.6
Benzie	*	*	-	*	*	11.8±8.7	*	11.4±8.4	*	*
Berrien	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	9.2±2.4	8.6±2.3	9.0±2.4
Branch	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	5.4±3.3	3.3±2.7	3.5±2.8
Calhoun	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	11.2±2.8	10.7±2.7	11.5±2.8
Cass	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	8.9±4.6	6.3±3.9	7.6±4.3
Charlevoix	*	*	6.7±5.3	*	*	*	*	*	*	*
Cheboygan	*	7.2±5.8	*	7.0±5.6	*	*	*	*	*	*
Chippewa	5.8±4.3	5.0±4.0	6.0±4.4	5.4±4.3	*	6.8±4.7	7.5±4.8	8.7±5.3	5.4±4.3	*
Clare	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	5.6±4.5	6.5±4.8	5.7±4.6
Clinton	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	2.9±2.1	3.3±2.3	3.1±2.3
Crawford	*	16.3±12.0	16.8±12.4	17.5±12.8	*	*	*	17.6±12.9	19.6±13.5	17.9±13.1
Delta	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	4.9±3.9	*	5.2±4.2
Dickinson	7.1±5.7	*	*	*	*	*	8.5±6.3	7.5±6.0	7.6±6.1	*
Eaton	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	5.0±2.4	5.3±2.4	4.9±2.3
Emmet	6.1±4.5	7.1±4.9	7.1±4.9	6.1±4.5	5.3±4.2	5.5±4.4	*	*	*	*
Genesee	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	9.5±1.4	9.2±1.4	9.0±1.4
Gladwin	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	*	*	*
Gogebic	*	*	*	-	-	*	*	*	*	*
Grand Traverse	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	6.5±2.9	7.1±3.0	7.2±3.1
Gratiot	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	6.9±4.3	8.6±4.9	7.1±4.4
Hillsdale	8.7±4.2	8.5±4.2	5.8±3.4	5.6±3.5	3.4±2.7	*	4.0±3.0	6.9±3.9	9.3±4.5	6.0±3.7

Table 12-A
All Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 1998-2009
(Continued)

County	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Houghton	6.8±4.7	*	*	5.1±4.1	7.7±5.0	5.8±4.3	5.0±4.0	4.9±3.9	7.3±4.7	6.5±4.5
Huron	6.0±4.5	7.2±5.0	8.3±5.4	*	*	*	6.1±4.8	6.0±4.8	*	*
Ingham	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	7.3±1.6	6.9±1.6	7.4±1.6
Ionia	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	4.8±2.7	3.9±2.4	3.3±2.3
Iosco	*	9.0±6.6	10.5±7.3	9.8±7.2	*	*	*	*	*	*
Iron	*	*	*	-	*	*	*	*	*	*
Isabella	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	9.6±4.1	6.3±3.3	5.5±3.1
Jackson	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	9.3±2.4	7.7±2.2	7.1±2.2
Kalamazoo	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	7.2±1.7	7.0±1.7	8.3±1.8
Kalkaska	*	*	*	*	9.1±7.3	8.7±6.9	*	*	-	*
Kent	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	7.7±1.0	7.8±1.0	6.9±1.0
Keweenaw	-	-	*	*	*	-	*	*	*	-
Lake	*	*	*	*	*	19.7±14.4	*	*	*	*
Lapeer	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	5.2±2.6	6.2±2.9	7.8±3.3
Leelanau	*	*	*	10.7±8.5	14.2±9.8	13.6±9.4	*	*	*	*
Lenawee	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	6.7±2.6	8.3±3.0	8.3±3.0
Livingston	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	5.4±1.9	5.7±2.0	6.9±2.3
Luce	*	*	*	*	*	*	*	*	*	*
Mackinac	*	*	*	*	*	*	*	*	*	*
Macomb	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	6.0±0.9	6.1±0.9	7.1±1.0
Manistee	*	*	*	12.9±7.9	13.2±8.2	14.2±8.4	8.4±6.7	*	*	*
Marquette	7.4±4.0	5.6±3.5	6.6±3.7	5.4±3.3	3.2±2.6	*	3.8±2.8	4.6±3.0	4.5±2.9	4.4±2.9
Mason	9.4±6.1	10.6±6.5	10.5±6.5	8.8±6.1	*	*	*	6.1±4.9	7.0±5.2	*
Mecosta	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	4.4±3.5	9.8±5.3	8.2±4.9
Menominee	*	*	*	*	*	*	*	*	*	*
Midland	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	7.0±3.1	5.3±2.8	4.2±2.5
Missaukee	*	*	*	*	*	*	*	*	-	*
Monroe	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	6.9±2.3	7.0±2.3	6.1±2.1
Montcalm	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	2.9±2.1	3.7±2.4	3.9±2.5
Montmorency	-	-	-	-	-	-	*	*	*	-

Table 12-A
All Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 1998-2009
(Continued)

County	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Muskegon	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	6.3±1.8	6.7±1.9	7.1±2.0
Newaygo	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	9.1±4.2	8.2±4.0	8.1±4.1
Oakland	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	6.7±0.8	6.4±0.8	6.3±0.8
Oceana	7.4±5.1	*	7.2±4.9	8.1±5.3	8.7±5.4	10.2±5.7	10.1±5.7	8.7±5.3	6.0±4.5	6.3±4.6
Ogemaw	*	*	*	*	*	*	*	*	*	*
Ontonagon	-	-	-	-	*	*	*	*	*	*
Osceola	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	9.4±6.5	*	*
Oscoda	*	*	*	*	*	*	-	-	*	*
Otsego	*	*	*	*	*	*	*	8.2±6.1	9.3±6.4	8.4±6.2
Ottawa	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	5.3±1.4	6.0±1.5	5.6±1.4
Presque Isle	17.4±12.8	19.9±13.7	15.6±12.4	*	*	*	*	*	*	*
Roscommon	12.6±8.6	*	*	*	11.3±8.4	9.5±7.6	*	*	*	10.7±8.5
Saginaw	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	9.4±2.2	9.2±2.2	10.5±2.3
St. Clair	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	6.6±2.1	5.7±2.0	6.2±2.1
St. Joseph	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	8.3±3.3	10.3±3.7	11.0±3.9
Sanilac	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	7.7±4.4	7.5±4.4	6.8±4.2
Schoolcraft	*	*	*	*	*	*	*	*	*	*
Shiawassee	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	8.8±3.7	5.3±2.9	5.7±3.1
Tuscola	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	6.8±3.7	4.3±3.0	3.9±2.9
Van Buren	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	6.5±2.8	5.4±2.6	6.7±2.9
Washtenaw	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	5.7±1.3	5.2±1.3	5.3±1.3
Wayne	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	10.5±0.7	10.3±0.7	10.4±0.7
Wexford	11.7±6.1	10.1±5.7	6.0±4.4	*	*	6.5±4.5	6.3±4.3	9.1±5.2	6.7±4.4	7.7±4.7

Notes: 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 12-B
White Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 1998-2009

County	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	5.6±0.3	5.6±0.3	5.6±0.3
Alcona	*	*	*	*	*	*	*	*	*	*
Alger	*	-	*	*	*	*	-	-	*	*
Allegan	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	7.4±2.5	6.0±2.3	5.7±2.3
Alpena	11.2±6.6	10.2±6.3	*	*	*	*	*	*	6.8±5.4	*
Antrim	*	*	*	*	*	*	*	*	8.8±7.0	*
Arenac	*	*	*	*	*	*	*	*	*	*
Baraga	*	*	*	*	*	*	*	*	-	-
Barry	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	5.8±3.3	8.2±3.9	7.6±3.8
Bay	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	7.6±2.8	7.1±2.8	6.1±2.6
Benzie	*	*	-	*	*	10.5±8.4	*	10.1±8.0	*	*
Berrien	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	5.8±2.2	5.7±2.2	5.0±2.1
Branch	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	4.9±3.2	3.4±2.7	3.6±2.9
Calhoun	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	8.5±2.6	7.8±2.6	9.3±2.9
Cass	*	*	7.7±4.5	8.5±4.8	9.8±5.1	7.8±4.6	7.0±4.3	6.5±4.2	5.9±4.1	5.2±3.8
Charlevoix	*	*	6.9±5.5	*	*	*	*	*	*	*
Cheboygan	*	7.5±5.9	*	7.3±5.8	*	*	*	*	*	*
Chippewa	6.6±5.3	*	6.8±5.4	*	*	*	6.9±5.5	8.5±6.3	*	*
Clare	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	5.7±4.6	6.7±4.9	5.9±4.7
Clinton	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	2.6±2.1	3.5±2.4	3.3±2.4
Crawford	*	*	*	15.5±12.3	*	*	*	15.5±12.3	17.5±12.8	16.1±12.8
Delta	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	*	*	*
Dickinson	7.3±5.8	*	*	*	*	*	8.7±6.4	7.9±6.3	8.0±6.4	*
Eaton	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	5.2±2.5	5.2±2.6	3.9±2.2
Emmet	6.5±4.8	7.6±5.2	7.7±5.3	6.5±4.8	5.7±4.5	5.9±4.7	*	*	*	*
Genesee	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	6.3±1.4	6.0±1.4	5.4±1.3
Gladwin	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	*	*	*
Gogebic	*	*	*	-	-	*	*	*	*	*
Grand Traverse	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	6.7±3.0	7.5±3.2	7.3±3.2
Gratiot	7.8±4.4	6.0±3.9	6.2±4.0	*	5.9±4.0	4.2±3.4	7.1±4.4	6.6±4.3	7.6±4.7	6.0±4.1
Hillsdale	8.8±4.3	8.7±4.2	5.9±3.5	5.7±3.5	3.4±2.8	*	4.1±3.0	7.1±4.0	9.7±4.7	6.2±3.9

Table 12-B
White Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 1998-2009
(Continued)

County	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Houghton	7.1±4.9	*	*	*	7.2±5.0	6.1±4.5	5.3±4.2	5.2±4.2	6.9±4.7	6.1±4.5
Huron	6.2±4.6	7.4±5.1	8.5±5.5	*	*	*	6.2±4.9	6.1±4.9	*	*
Ingham	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	4.9±1.5	4.4±1.4	5.0±1.6
Ionia	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	4.9±2.8	4.1±2.5	3.4±2.4
Iosco	*	*	8.2±6.5	*	*	*	*	*	*	*
Iron	*	*	*	-	*	*	*	*	*	*
Isabella	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	7.9±4.0	5.1±3.2	3.1±2.5
Jackson	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	6.7±2.2	6.4±2.2	6.2±2.2
Kalamazoo	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	5.0±1.6	4.7±1.6	5.3±1.7
Kalkaska	*	*	*	*	*	*	*	*	-	*
Kent	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	5.2±0.9	5.5±1.0	5.0±0.9
Keweenaw	-	-	*	*	*	-	*	*	*	-
Lake	*	*	-	*	*	22.1±16.2	*	*	*	*
Lapeer	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	5.3±2.7	6.3±3.0	7.7±3.4
Leelanau	*	*	*	11.9±9.4	15.7±10.8	15.0±10.3	*	*	*	*
Lenawee	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	6.8±2.8	9.0±3.3	8.4±3.3
Livingston	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	5.2±1.9	5.5±2.0	6.8±2.3
Luce	*	*	*	*	*	*	*	*	*	*
Mackinac	*	*	*	*	*	*	*	*	*	*
Macomb	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	5.1±0.9	5.2±0.9	6.2±1.0
Manistee	*	*	*	12.0±7.8	12.5±8.1	13.6±8.3	8.8±7.0	*	*	*
Marquette	7.0±4.0	5.8±3.6	6.3±3.7	5.1±3.3	*	*	4.0±2.9	4.9±3.2	4.7±3.1	4.1±2.8
Mason	8.6±5.9	9.8±6.3	8.6±5.9	6.8±5.4	*	*	*	*	6.2±5.0	*
Mecosta	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	*	9.5±5.4	7.9±4.9
Menominee	*	*	*	*	*	*	*	*	*	*
Midland	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	7.3±3.3	5.6±2.9	4.0±2.5
Missaukee	*	*	*	*	*	*	*	*	-	*
Monroe	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	6.9±2.4	6.5±2.4	4.9±2.1
Montcalm	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	2.9±2.2	3.7±2.4	3.9±2.6
Montmorency	-	-	-	-	-	-	*	*	*	-

Table 12-B
White Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 1998-2009
(Continued)

County	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Muskegon	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	5.1±1.9	5.7±2.0	6.4±2.2
Newaygo	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	8.3±4.0	7.9±4.0	8.2±4.2
Oakland	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	4.9±0.8	4.9±0.8	4.9±0.8
Oceana	7.6±5.2	*	7.3±5.0	8.2±5.3	8.8±5.4	9.5±5.6	9.4±5.5	7.4±5.1	*	*
Ogemaw	*	*	*	*	*	*	*	*	*	*
Ontonagon	-	-	-	-	*	*	*	*	*	*
Osceola	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	9.5±6.6	*	*
Oscoda	*	*	*	*	*	*	-	-	*	*
Otsego	*	*	*	*	*	*	*	8.3±6.1	9.4±6.5	8.5±6.3
Ottawa	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	5.1±1.4	5.4±1.4	4.7±1.4
Presque Isle	17.7±13.0	20.2±13.8	15.7±12.5	*	*	*	*	*	*	*
Roscommon	11.2±8.2	*	*	*	11.6±8.5	9.7±7.7	*	*	*	11.1±8.8
Saginaw	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	5.7±2.0	6.6±2.2	6.4±2.2
St. Clair	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	5.9±2.0	5.0±1.9	6.0±2.1
St. Joseph	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	7.3±3.2	9.3±3.6	10.0±3.8
Sanilac	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	7.2±4.3	7.0±4.3	6.3±4.1
Schoolcraft	*	*	*	*	-	*	*	*	*	*
Shiawassee	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	9.0±3.7	5.4±3.0	5.8±3.2
Tuscola	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	6.4±3.6	3.9±2.9	4.0±3.0
Van Buren	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	3.5±2.2	4.8±2.6	6.0±2.9
Washtenaw	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	3.5±1.2	3.6±1.3	4.3±1.4
Wayne	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	5.4±0.7	5.5±0.7	5.6±0.8
Wexford	11.1±6.0	9.5±5.6	6.1±4.5	*	*	6.6±4.6	6.4±4.4	9.4±5.3	7.0±4.5	8.0±4.9

Notes: 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 12-C
Black Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 1998-2009

County	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	16.4±1.0	15.3±0.9	15.5±0.9
Berrien	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	16.9±6.5	14.8±6.0	16.7±6.4
Calhoun	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	25.2±10.6	24.1±10.4	20.5±9.6
Cass	*	*	*	-	-	*	*	*	*	*
Genesee	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	17.1±3.6	17.1±3.6	17.9±3.7
Ingham	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	18.9±6.5	17.4±6.1	16.9±5.9
Jackson	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	28.6±13.4	16.7±10.3	15.4±10.0
Kalamazoo	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	16.8±6.2	16.8±6.2	19.1±6.5
Kent	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	16.7±4.2	14.4±3.8	13.4±3.7
Macomb	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	13.9±4.4	13.6±4.0	15.0±4.0
Muskegon	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	9.8±5.1	9.0±4.9	8.2±4.6
Oakland	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	17.5±3.4	15.5±3.1	14.7±3.0
Saginaw	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	18.5±5.7	14.8±5.1	19.1±5.8
St. Clair	*	*	41.1±32.2	44.6±32.3	*	*	*	*	*	*
Van Buren	*	*	*	*	*	37.0±29.1	*	*	*	*
Washtenaw	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	13.3±4.9	13.1±4.9	11.5±4.6
Wayne	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	15.9±1.3	15.2±1.3	15.3±1.3

Notes: 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

**Table 13-A
Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 1998-2009**

District	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	7.8±0.3	7.6±0.3	7.6±0.3
Allegan County Health Department	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	8.1±2.6	6.8±2.4	6.3±2.3
Barry-Eaton District Health Department	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	5.4±1.9	6.4±2.1	5.9±2.0
Bay County Health Department	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	8.0±2.9	7.6±2.8	6.6±2.6
Benzie-Leelanau District Health Department	*	*	*	8.7±5.3	10.4±5.8	12.7±6.4	7.8±5.1	8.5±5.3	*	*
Berrien County Health Department	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	9.2±2.4	8.6±2.3	9.0±2.4
Branch-Hillsdale-St. Joseph Health Department	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	7.1±2.0	8.0±2.2	7.5±2.2
Calhoun County Health Department	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	11.2±2.8	10.7±2.7	11.5±2.8
Central Michigan District Health Department	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	7.7±2.2	5.6±1.9	5.7±1.9
Chippewa County Health Department	5.8±4.3	5.0±4.0	6.0±4.4	5.4±4.3	*	6.8±4.7	7.5±4.8	8.7±5.3	5.4±4.3	*
City Of Detroit Health Department	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	14.7±1.2	14.4±1.2	14.8±1.3
Dickinson-Iron District Health Department	7.9±5.1	6.3±4.6	*	*	*	*	7.3±5.1	6.6±4.9	6.5±4.8	5.6±4.5
District Health Department #10	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	7.6±1.8	6.8±1.7	6.7±1.7
District Health Department #2	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	4.7±3.3	5.9±3.6	9.0±4.6
District Health Department #4	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	5.3±3.0	6.3±3.3	6.1±3.3
Genesee County Health Department	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	9.5±1.4	9.2±1.4	9.0±1.4
Grand Traverse County Health Department	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	6.5±2.9	7.1±3.0	7.2±3.1
Huron County Health Department	6.0±4.5	7.2±5.0	8.3±5.4	*	*	*	6.1±4.8	6.0±4.8	*	*
Ingham County Health Department	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	7.3±1.6	6.9±1.6	7.4±1.6
Ionia County Health Department	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	4.8±2.7	3.9±2.4	3.3±2.3
Jackson County Health Department	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	9.3±2.4	7.7±2.2	7.1±2.2

Table 13-A
All Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 1998-2009
(Continued)

District	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Kalamazoo County Human Services Department	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	7.2±1.7	7.0±1.7	8.3±1.8
Kent County Health Department	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	7.7±1.0	7.8±1.0	6.9±1.0
Lapeer County Health Department	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	5.2±2.6	6.2±2.9	7.8±3.3
Lenawee County Health Department	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	6.7±2.6	8.3±3.0	8.3±3.0
Livingston County Health Department	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	5.4±1.9	5.7±2.0	6.9±2.3
Luce-Mackinac-Alger-Schoolcraft Health Department	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	8.5±5.9	12.1±7.1	10.0±6.5
Macomb County Health Department	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	6.0±0.9	6.1±0.9	7.1±1.0
Marquette County Health Department	7.4±4.0	5.6±3.5	6.6±3.7	5.4±3.3	3.2±2.6	*	3.8±2.8	4.6±3.0	4.5±2.9	4.4±2.9
Midland County Health Department	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	7.0±3.1	5.3±2.8	4.2±2.5
Mid-Michigan District Health Department	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	3.8±1.5	4.6±1.7	4.3±1.7
Monroe County Health Department	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	6.9±2.3	7.0±2.3	6.1±2.1
Muskegon County Health Department	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	6.3±1.8	6.7±1.9	7.1±2.0
Northwest Michigan Community Health Agency	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	5.4±2.4	6.1±2.6	6.4±2.7
Oakland County Health Department	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	6.7±0.8	6.4±0.8	6.3±0.8
Ottawa County Health Department	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	5.3±1.4	6.0±1.5	5.6±1.4
Public Health Delta & Menominee Counties	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	4.2±2.9	4.3±3.0	5.5±3.4
Saginaw County Health Department	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	9.4±2.2	9.2±2.2	10.5±2.3
Sanilac County Health Department	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	7.7±4.4	7.5±4.4	6.8±4.2
Shiawassee County Health Department	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	8.8±3.7	5.3±2.9	5.7±3.1
St Clair County Health Department	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	6.6±2.1	5.7±2.0	6.2±2.1
Tuscola County Health Department	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	6.8±3.7	4.3±3.0	3.9±2.9

Table 13-A
All Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 1998-2009
(Continued)

District	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Van Buren-Cass County Health Department	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	7.3±2.4	5.7±2.2	7.0±2.4
Washtenaw County Health Department	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	5.7±1.3	5.2±1.3	5.3±1.3
Wayne County Health Department	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	6.6±0.8	6.8±0.8	6.6±0.8
Western Upper Peninsula District Health Department	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	7.0±3.5	7.5±3.7	5.2±3.1

Notes: 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

**Table 13-B
White Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 1998-2009**

District	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	5.6±0.3	5.6±0.3	5.6±0.3
Allegan County Health Department	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	7.4±2.5	6.0±2.3	5.7±2.3
Barry-Eaton District Health Department	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	5.4±2.0	6.4±2.2	5.3±2.0
Bay County Health Department	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	7.6±2.8	7.1±2.8	6.1±2.6
Benzie-Leelanau District Health Department	*	*	*	9.3±5.7	11.1±6.3	12.7±6.6	7.4±5.1	8.2±5.4	*	*
Berrien County Health Department	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	5.8±2.2	5.7±2.2	5.0±2.1
Branch-Hillsdale-St. Joseph Health Department	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	6.5±2.0	7.7±2.2	7.2±2.2
Calhoun County Health Department	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	8.5±2.6	7.8±2.6	9.3±2.9
Central Michigan District Health Department	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	7.1±2.2	5.2±1.9	4.8±1.8
Chippewa County Health Department	6.6±5.3	*	6.8±5.4	*	*	*	6.9±5.5	8.5±6.3	*	*
City Of Detroit Health Department	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	5.5±1.8	5.2±1.8	5.7±2.1
Dickinson-Iron District Health Department	8.0±5.2	6.4±4.7	*	*	*	*	7.5±5.2	6.9±5.1	6.9±5.1	*
District Health Department #10	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	7.2±1.7	6.4±1.6	6.3±1.7
District Health Department #2	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	4.3±3.1	5.5±3.6	8.7±4.5
District Health Department #4	9.3±3.8	9.9±3.9	6.2±3.1	5.5±3.0	3.5±2.4	*	4.1±2.7	5.5±3.1	6.5±3.4	6.3±3.4
Genesee County Health Department	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	6.3±1.4	6.0±1.4	5.4±1.3
Grand Traverse County Health Department	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	6.7±3.0	7.5±3.2	7.3±3.2
Huron County Health Department	6.2±4.6	7.4±5.1	8.5±5.5	*	*	*	6.2±4.9	6.1±4.9	*	*
Ingham County Health Department	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	4.9±1.5	4.4±1.4	5.0±1.6
Ionia County Health Department	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	4.9±2.8	4.1±2.5	3.4±2.4
Jackson County Health Department	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	6.7±2.2	6.4±2.2	6.2±2.2

Table 13-B
White Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 1998-2009
(Continued)

District	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Kalamazoo County Human Services Department	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	5.0±1.6	4.7±1.6	5.3±1.7
Kent County Health Department	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	5.2±0.9	5.5±1.0	5.0±0.9
Lapeer County Health Department	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	5.3±2.7	6.3±3.0	7.7±3.4
Lenawee County Health Department	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	6.8±2.8	9.0±3.3	8.4±3.3
Livingston County Health Department	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	5.2±1.9	5.5±2.0	6.8±2.3
Luce-Mackinac-Alger-Schoolcraft Health Department	10.6±6.6	6.4±5.1	6.6±5.3	*	*	8.5±6.2	8.7±6.4	8.7±6.4	10.4±7.2	9.1±6.7
Macomb County Health Department	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	5.1±0.9	5.2±0.9	6.2±1.0
Marquette County Health Department	7.0±4.0	5.8±3.6	6.3±3.7	5.1±3.3	*	*	4.0±2.9	4.9±3.2	4.7±3.1	4.1±2.8
Midland County Health Department	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	7.3±3.3	5.6±2.9	4.0±2.5
Mid-Michigan District Health Department	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	3.6±1.5	4.5±1.7	4.2±1.7
Monroe County Health Department	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	6.9±2.4	6.5±2.4	4.9±2.1
Muskegon County Health Department	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	5.1±1.9	5.7±2.0	6.4±2.2
Northwest Michigan Community Health Agency	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	5.6±2.5	6.3±2.7	6.4±2.8
Oakland County Health Department	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	4.9±0.8	4.9±0.8	4.9±0.8
Ottawa County Health Department	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	5.1±1.4	5.4±1.4	4.7±1.4
Public Health Delta & Menominee Counties	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	4.2±3.1	3.8±3.0	4.3±3.4
Saginaw County Health Department	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	5.7±2.0	6.6±2.2	6.4±2.2
Sanilac County Health Department	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	7.2±4.3	7.0±4.3	6.3±4.1
Shiawassee County Health Department	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	9.0±3.7	5.4±3.0	5.8±3.2
St Clair County Health Department	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	5.9±2.0	5.0±1.9	6.0±2.1
Tuscola County Health Department	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	6.4±3.6	3.9±2.9	4.0±3.0

Table 13-B
White Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 1998-2009
(Continued)

District	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Van Buren-Cass County Health Department	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	4.5±2.0	5.1±2.2	5.7±2.3
Washtenaw County Health Department	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	3.5±1.2	3.6±1.3	4.3±1.4
Wayne County Health Department	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	5.3±0.8	5.6±0.8	5.6±0.8
Western Upper Peninsula District Health Department	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	7.3±3.8	7.2±3.8	4.8±3.1

Notes: 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 13-C
Black Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 1998-2009

District	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	16.4±1.0	15.3±0.9	15.5±0.9
Barry-Eaton District Health Department	*	*	*	*	*	*	*	*	*	*
Berrien County Health Department	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	16.9±6.5	14.8±6.0	16.7±6.4
Calhoun County Health Department	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	25.2±10.6	24.1±10.4	20.5±9.6
City Of Detroit Health Department	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	16.3±1.4	15.9±1.4	16.5±1.5
District Health Department #10	43.5±31.5	44.3±32.1	41.7±32.7	*	-	-	-	*	*	*
Genesee County Health Department	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	17.1±3.6	17.1±3.6	17.9±3.7
Ingham County Health Department	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	18.9±6.5	17.4±6.1	16.9±5.9
Jackson County Health Department	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	28.6±13.4	16.7±10.3	15.4±10.0
Kalamazoo County Human Services Department	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	16.8±6.2	16.8±6.2	19.1±6.5
Kent County Health Department	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	16.7±4.2	14.4±3.8	13.4±3.7
Macomb County Health Department	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	13.9±4.4	13.6±4.0	15.0±4.0
Mid-Michigan District Health Department	-	*	*	*	*	*	*	*	-	-
Muskegon County Health Department	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	9.8±5.1	9.0±4.9	8.2±4.6
Oakland County Health Department	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	17.5±3.4	15.5±3.1	14.7±3.0
Saginaw County Health Department	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	18.5±5.7	14.8±5.1	19.1±5.8
Van Buren-Cass County Health Department	18.6±14.7	19.5±15.4	*	*	*	30.3±20.7	28.5±20.8	32.9±22.4	*	*
Washtenaw County Health Department	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	13.3±4.9	13.1±4.9	11.5±4.6
Wayne County Health Department	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	14.0±2.9	12.2±2.6	10.5±2.4

Notes: 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 14-A
Three-Year Moving Average Infant Death Rates by City
Michigan Residents, 1998-2009

City	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	7.8±0.3	7.6±0.3	7.6±0.3
Ann Arbor	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	5.4±2.3	4.2±2.0	4.3±2.0
Battle Creek	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	9.6±3.2	10.3±3.3	9.6±3.3
Dearborn	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	5.5±2.0	7.5±2.3	6.8±2.2
Dearborn Heights	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	7.9±3.6	6.0±3.1	5.9±3.1
Detroit	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	14.7±1.2	14.4±1.2	14.8±1.3
East Lansing	8.9±6.1	7.7±5.7	*	*	*	6.6±5.2	7.1±5.7	*	*	*
Farmington Hills	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	8.0±3.5	7.8±3.5	7.0±3.3
Flint	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	11.1±2.4	10.4±2.4	10.6±2.4
Grand Rapids	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	8.6±1.7	9.6±1.8	8.2±1.7
Kalamazoo	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	7.2±2.5	6.7±2.4	7.1±2.3
Kentwood	*	4.0±2.5	4.2±2.6	5.1±2.9	3.9±2.5	7.6±3.5	7.7±3.5	7.2±3.4	4.8±2.8	4.5±2.8
Lansing	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	8.7±2.3	8.7±2.2	9.1±2.3
Livonia	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	3.0±2.1	5.3±2.8	5.1±2.8
Midland	5.6±3.7	5.0±3.4	5.0±3.5	5.7±3.7	7.0±4.1	8.1±4.5	9.0±4.9	8.3±4.7	6.3±4.1	5.5±3.8
Novi	3.9±2.9	*	3.6±2.9	7.1±4.0	7.0±3.9	4.6±3.2	*	*	4.5±3.1	4.5±3.1
Pontiac	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	13.0±3.6	12.6±3.7	14.5±4.0
Portage	7.2±4.1	7.0±4.0	6.3±3.7	4.5±3.1	*	5.6±3.5	6.0±3.5	7.6±3.9	5.4±3.3	10.7±4.8
Rochester Hills	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	4.2±2.6	6.3±3.2	5.3±3.0
Roseville	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	9.9±4.6	9.7±4.5	10.0±4.6
Royal Oak	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	3.6±2.5	4.0±2.6	3.9±2.5
Saginaw	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	13.8±4.0	12.2±3.8	15.8±4.3
Southfield	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	13.4±4.6	12.2±4.4	13.0±4.6
St Clair Shores	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	4.3±3.0	3.8±2.8	5.5±3.4
Sterling Heights	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	6.0±2.3	6.8±2.4	7.4±2.5
Taylor	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	10.3±4.0	8.6±3.6	6.3±3.1
Troy	*	2.2±1.8	2.2±1.8	3.4±2.2	3.1±2.1	4.0±2.4	4.5±2.6	5.3±2.9	6.2±3.1	5.9±3.1
Warren	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	7.2±2.3	6.2±2.2	7.7±2.4
Westland	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	6.3±2.7	7.5±2.9	7.4±2.9
Wyoming	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	10.7±3.3	12.1±3.5	10.9±3.3

Notes: This table shows cities with (1) populations greater than 40,000 according to 2007 estimates and (2) three-year average births of greater than 200. Some city rates may be subject to MCD residence misallocation errors. See Data Quality Considerations for further details. 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 14-B
White Three-Year Moving Average Infant Death Rates by City
Michigan Residents, 1998-2009

City	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	5.6±0.3	5.6±0.3	5.6±0.3
Ann Arbor	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	3.0±2.1	2.3±1.8	3.5±2.3
Battle Creek	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	6.8±3.1	7.0±3.1	5.8±2.9
Dearborn	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	5.2±2.0	7.3±2.4	6.3±2.2
Dearborn Heights	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	7.5±3.8	5.4±3.2	4.4±2.9
Detroit	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	5.5±1.8	5.2±1.8	5.7±2.1
East Lansing	*	-	-	-	-	*	*	*	*	*
Farmington Hills	*	2.7±2.2	4.7±2.9	5.9±3.3	6.6±3.6	6.5±3.7	6.6±3.9	7.1±4.2	7.6±4.5	6.4±4.1
Flint	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	5.5±2.7	4.3±2.4	4.8±2.6
Grand Rapids	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	3.6±1.3	5.1±1.6	4.4±1.5
Kalamazoo	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	3.8±2.3	3.0±1.9	1.8±1.5
Kentwood	*	3.7±2.7	4.5±3.1	6.4±3.8	4.2±3.1	6.4±3.8	5.8±3.6	5.2±3.4	3.6±2.9	*
Lansing	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	5.0±2.1	5.2±2.1	5.6±2.2
Livonia	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	3.3±2.3	5.6±3.0	5.3±3.0
Midland	5.9±3.9	5.2±3.6	4.6±3.4	5.4±3.7	5.4±3.7	7.2±4.4	8.2±4.8	8.9±5.0	6.8±4.4	5.9±4.1
Novi	*	*	*	6.1±4.2	6.1±4.2	5.5±4.0	*	*	*	*
Pontiac	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	5.2±3.2	5.6±3.5	8.3±4.5
Portage	6.5±4.0	4.5±3.3	3.8±3.0	*	*	3.9±3.1	4.4±3.2	5.5±3.6	5.0±3.4	8.6±4.7
Rochester Hills	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	3.2±2.6	7.2±3.9	5.8±3.6
Roseville	5.0±3.2	6.2±3.6	6.9±3.9	5.2±3.4	3.6±2.8	*	4.4±3.2	8.5±4.6	9.8±5.0	10.3±5.2
Royal Oak	5.9±3.2	*	*	4.2±2.7	5.2±3.1	3.9±2.7	*	*	3.0±2.4	2.9±2.3
Saginaw	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	4.8±3.3	6.3±3.9	6.6±4.1
Southfield	*	*	*	*	*	*	*	*	*	*
St Clair Shores	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	4.0±3.0	4.1±3.0	6.0±3.7
Sterling Heights	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	5.4±2.4	5.9±2.5	6.6±2.6
Taylor	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	8.0±4.1	7.0±3.8	5.6±3.5
Troy	*	*	*	*	*	*	3.6±2.8	5.6±3.6	5.7±3.7	5.9±3.8
Warren	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	7.0±2.6	5.6±2.4	6.5±2.6
Westland	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	4.5±2.6	5.0±2.8	5.9±3.1
Wyoming	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	8.7±3.1	9.1±3.2	8.4±3.1

Notes: This table shows cities with (1) populations greater than 40,000 according to 2007 estimates and (2) three-year average births of greater than 200. Some city rates may be subject to MCD residence misallocation errors. See Data Quality Considerations for further details. 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 14-C
Black Three-Year Moving Average Infant Death Rates by City
Michigan Residents, 1998-2009

City	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09
Michigan	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	16.4±1.0	15.3±0.9	15.5±0.9
Battle Creek	16.9±10.4	17.0±10.4	*	11.4±8.4	*	10.9±8.0	14.3±9.3	20.2±10.9	21.3±11.1	21.4±11.1
Detroit	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	16.3±1.4	15.9±1.4	16.5±1.5
Flint	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	14.9±3.7	14.6±3.7	14.9±3.7
Grand Rapids	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	18.9±5.3	17.7±5.0	17.3±5.0
Kalamazoo	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	13.7±6.3	14.8±6.4	17.3±6.7
Lansing	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	20.0±7.0	18.4±6.5	17.7±6.3
Muskegon	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	7.3±5.4	*	*
Pontiac	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	21.9±7.1	20.0±6.8	20.3±6.9
Saginaw	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	22.5±7.2	17.5±6.3	22.3±7.1
Southfield	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	15.4±5.9	14.8±5.8	15.0±5.8
Taylor	15.3±11.2	*	16.2±11.9	*	*	*	17.5±11.3	20.3±11.9	15.2±9.9	9.3±7.4
Warren	*	27.0±21.3	*	20.5±15.1	19.6±13.4	18.9±12.2	14.2±9.8	10.4±7.6	12.0±7.4	14.9±7.7
Westland	*	-	*	*	28.9±16.9	23.3±14.3	19.2±11.8	10.5±8.4	12.3±8.5	11.1±7.7

Notes: This table shows cities with (1) populations greater than 40,000 according to 2007 estimates and (2) three-year average births of greater than 200. Some city rates may be subject to MCD residence misallocation errors. See Data Quality Considerations for further details. 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.

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

Source: 1998- 2009 Michigan Resident Death Files and Michigan Resident Birth Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 15-A
Number of Neonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 1999-2009

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Michigan	729	777	729	719	771	694	700	660	697	608	600
Alcona	-	-	-	1	3	-	1	-	-	1	2
Alger	-	-	-	-	-	-	-	-	-	2	-
Allegan	5	6	12	6	10	4	9	4	11	4	3
Alpena	6	2	1	-	-	1	-	3	-	1	-
Antrim	1	2	2	-	-	3	-	1	-	2	-
Arenac	-	1	1	-	2	-	-	1	-	-	2
Baraga	-	-	-	1	-	-	2	-	-	1	-
Barry	2	2	3	1	3	3	1	6	3	2	3
Bay	4	5	10	6	5	1	8	8	5	3	7
Benzie	1	-	-	-	3	-	1	2	2	-	-
Berrien	12	13	14	8	12	5	10	12	13	10	11
Branch	3	3	4	3	3	4	2	2	2	1	2
Calhoun	7	13	18	8	7	13	11	11	18	13	13
Cass	2	1	-	3	3	2	6	1	2	2	4
Charlevoix	1	2	1	2	-	-	1	-	2	1	2
Cheboygan	-	1	3	1	2	-	-	-	1	-	-
Chippewa	1	1	1	2	3	-	4	2	-	1	-
Clare	3	4	1	-	4	4	-	2	3	-	1
Clinton	1	4	4	4	8	2	2	2	2	1	1
Crawford	2	2	2	1	2	-	-	2	4	1	1
Delta	-	3	5	-	6	3	-	-	2	-	1
Dickinson	1	-	1	-	1	1	-	1	-	2	2
Eaton	-	6	1	6	5	3	3	4	4	2	3
Emmet	2	1	2	1	2	-	1	-	1	2	-
Genesee	56	54	40	48	50	51	33	44	40	27	34
Gladwin	4	-	2	1	1	1	4	-	1	1	1
Gogebic	1	1	-	-	-	-	1	1	1	-	-
Grand Traverse	4	5	8	5	3	6	2	4	5	7	4
Gratiot	2	5	1	2	1	4	-	4	4	2	3
Hillsdale	6	3	2	2	2	-	-	6	4	3	1

**Table 15-A
Number of Neonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 1999-2009
(Continued)**

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Houghton	4	1	-	1	2	3	1	2	2	3	1
Huron	-	3	3	2	-	-	3	2	-	-	3
Ingham	16	19	19	19	17	21	19	13	21	23	14
Ionia	2	6	4	5	4	2	2	3	2	-	1
Iosco	1	-	4	1	-	-	1	1	-	-	1
Iron	1	2	-	-	-	1	-	-	1	-	-
Isabella	4	4	8	4	5	1	6	3	5	1	1
Jackson	15	14	13	5	15	13	17	11	12	11	7
Kalamazoo	9	20	23	29	19	12	17	14	22	13	20
Kalkaska	1	1	-	1	-	1	3	-	-	-	1
Kent	51	59	51	55	60	49	46	58	48	47	42
Keweenaw	-	-	-	1	-	-	-	1	-	-	-
Lake	1	1	-	-	2	-	2	-	-	-	1
Lapeer	4	3	4	5	4	-	-	6	4	4	6
Leelanau	-	-	-	1	3	1	1	-	-	-	-
Lenawee	7	2	6	2	1	4	6	8	5	9	8
Livingston	8	7	4	5	10	6	8	5	11	6	9
Luce	-	1	-	-	1	-	1	1	-	1	-
Mackinac	1	1	-	-	1	1	1	1	-	1	1
Macomb	49	44	43	38	44	37	41	30	48	40	51
Manistee	-	-	2	2	6	2	1	1	-	1	1
Marquette	2	3	1	4	1	-	2	2	2	3	2
Mason	1	3	4	1	3	-	1	3	-	1	1
Mecosta	2	1	3	4	3	3	1	2	1	4	-
Menominee	1	-	2	2	-	-	1	-	1	1	1
Midland	6	4	2	4	3	6	7	7	3	1	3
Missaukee	1	2	-	-	3	-	1	-	-	-	1
Monroe	4	6	9	9	2	6	7	11	6	5	3
Montcalm	6	1	4	5	5	3	-	1	2	1	2
Montmorency	-	-	-	-	-	-	-	1	-	-	-

**Table 15-A
Number of Neonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 1999-2009
(Continued)**

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Muskegon	23	11	17	9	17	16	10	9	13	9	9
Newaygo	1	3	2	3	1	3	4	1	6	3	1
Oakland	64	83	72	68	73	82	73	72	71	62	61
Oceana	-	-	1	4	2	4	3	1	1	2	2
Ogemaw	-	1	1	-	-	1	-	-	1	-	-
Ontonagon	-	-	-	-	-	-	-	1	1	-	-
Osceola	2	2	1	2	2	1	3	2	1	-	1
Oscoda	-	2	-	1	1	-	-	-	-	1	1
Otsego	1	-	-	-	-	-	-	-	3	1	-
Ottawa	18	18	16	21	17	12	11	18	17	19	11
Presque Isle	3	1	1	1	-	1	-	1	2	-	-
Roscommon	2	1	-	1	1	2	1	-	3	1	1
Saginaw	14	20	19	16	11	13	18	8	16	10	15
St. Clair	12	11	9	8	12	16	10	9	10	4	5
St. Joseph	2	3	11	4	3	5	4	7	6	8	9
Sanilac	4	2	3	1	1	3	1	4	4	1	2
Schoolcraft	-	1	1	-	-	1	1	-	1	-	-
Shiawassee	3	5	3	5	5	6	4	-	8	-	2
Tuscola	1	3	3	6	1	3	3	4	1	-	2
Van Buren	5	1	8	3	4	6	9	-	5	6	4
Washtenaw	23	25	19	21	19	19	19	15	17	14	17
Wayne	223	233	193	226	246	216	225	198	180	197	173
Detroit City	159	159	140	153	164	149	161	121	121	125	113
Wayne County Excluding Detroit City	64	74	53	73	82	67	64	77	59	72	60
Wexford	3	3	1	2	-	1	2	-	4	2	2
Unknown	1	-	-	-	-	-	1	-	-	-	-

Notes: 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.

Neonatal Death - Deaths occurring to individuals less than 28 days of age.
 -: A dash indicates quantity zero.

Source: 1999-2009 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

Table 15-B
Number of Postneonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 1999-2009

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Michigan	342	335	337	335	341	290	313	280	300	286	281
Alcona	-	1	-	-	1	-	-	1	-	-	-
Alger	-	-	-	1	2	-	-	-	-	-	1
Allegan	4	3	1	3	4	4	3	4	6	2	2
Alpena	1	-	-	1	-	-	-	1	1	-	3
Antrim	1	-	-	1	-	-	-	1	2	-	1
Arenac	-	-	-	1	-	1	-	-	-	-	-
Baraga	-	1	-	-	-	-	-	-	-	-	-
Barry	4	4	-	-	1	1	-	1	2	3	2
Bay	-	1	1	1	3	1	2	4	3	5	1
Benzie	1	-	-	-	1	-	2	-	-	-	-
Berrien	13	6	8	10	7	3	10	5	8	6	7
Branch	1	1	4	1	2	4	4	-	-	1	-
Calhoun	9	2	8	7	9	5	7	6	10	1	7
Cass	1	3	1	4	1	1	2	2	1	2	1
Charlevoix	-	-	1	-	1	-	-	1	-	-	-
Cheboygan	2	-	-	-	-	1	-	1	1	-	2
Chippewa	-	3	-	-	-	-	1	2	1	-	-
Clare	1	-	-	1	3	1	-	1	-	1	1
Clinton	2	1	1	1	1	1	-	1	-	2	1
Crawford	-	-	1	1	-	-	-	-	1	-	-
Delta	-	2	1	-	1	1	1	1	2	-	1
Dickinson	1	-	1	-	-	-	2	3	-	-	-
Eaton	1	1	-	2	1	2	2	2	2	4	2
Emmet	1	2	-	2	-	1	2	-	-	-	1
Genesee	25	24	19	33	21	26	20	17	17	19	17
Gladwin	1	1	2	2	1	2	-	-	-	-	1
Gogebic	-	-	-	-	-	-	-	1	-	-	-
Grand Traverse	2	1	-	1	1	-	4	2	2	1	2
Gratiot	1	-	-	1	1	1	1	1	-	1	-
Hillsdale	1	2	2	-	2	-	-	1	1	1	-

**Table 15-B
Number of Postneonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 1999-2009
(Continued)**

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Houghton	-	-	-	2	1	-	-	-	1	1	-
Huron	1	1	-	-	-	-	-	1	-	-	-
Ingham	6	10	6	5	8	8	12	5	9	3	7
Ionia	2	2	3	1	1	1	1	-	4	1	-
Iosco	-	1	1	1	-	1	-	-	1	1	2
Iron	-	-	-	-	-	-	-	-	-	-	1
Isabella	1	1	2	3	2	2	2	3	2	-	3
Jackson	8	8	7	5	5	1	8	6	3	3	5
Kalamazoo	6	8	12	6	7	9	6	3	6	9	9
Kalkaska	-	1	-	2	2	-	-	-	-	-	-
Kent	17	28	21	20	28	26	21	26	18	21	14
Keweenaw	-	-	-	-	-	-	-	-	-	-	-
Lake	-	-	-	-	1	1	1	1	-	-	1
Lapeer	4	2	2	1	2	1	3	1	1	1	5
Leelanau	1	-	-	1	1	1	1	-	1	-	-
Lenawee	2	3	2	1	4	1	-	2	4	2	-
Livingston	3	4	5	1	6	-	2	2	3	4	3
Luce	-	1	-	-	-	-	-	1	-	1	-
Mackinac	-	1	-	-	-	-	-	-	-	1	-
Macomb	17	20	22	15	14	21	20	21	20	21	25
Manistee	1	-	-	-	-	-	2	-	-	-	1
Marquette	1	-	3	1	-	-	1	2	-	-	2
Mason	-	2	-	-	-	-	-	1	1	1	-
Mecosta	-	3	1	-	-	2	1	-	1	5	-
Menominee	1	-	1	-	-	-	-	-	-	1	-
Midland	7	2	5	3	1	2	1	1	-	2	2
Missaukee	-	1	-	-	-	-	1	-	-	-	-
Monroe	1	2	4	7	1	7	4	4	4	6	7
Montcalm	3	-	2	1	5	1	1	3	-	2	2
Montmorency	-	-	-	-	-	-	-	-	-	-	-

Table 15-B
Number of Postneonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 1999-2009
(Continued)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Muskegon	10	7	8	5	8	5	3	4	6	7	6
Newaygo	1	2	1	-	1	-	1	3	3	-	2
Oakland	21	23	24	27	33	13	30	19	22	26	17
Oceana	-	1	2	-	-	-	3	1	1	1	-
Ogemaw	1	-	-	-	-	1	1	-	1	1	1
Ontonagon	-	-	-	-	-	1	-	-	-	-	-
Osceola	1	1	2	-	-	1	1	-	1	-	-
Oscoda	-	-	-	-	-	-	-	-	-	1	-
Otsego	-	-	-	1	-	3	-	2	2	-	1
Ottawa	4	8	12	2	5	6	5	4	1	4	5
Presque Isle	-	1	2	-	1	-	-	-	-	1	1
Roscommon	-	1	-	1	-	2	-	-	1	-	-
Saginaw	8	7	8	8	13	8	10	10	10	15	11
St. Clair	3	6	6	5	4	4	4	4	2	4	9
St. Joseph	1	3	2	3	3	3	1	2	4	2	1
Sanilac	1	1	2	-	1	-	1	-	2	-	1
Schoolcraft	-	-	-	-	-	-	-	1	-	-	-
Shiawassee	1	-	2	7	1	2	6	2	2	1	-
Tuscola	3	3	1	3	3	2	3	1	1	1	2
Van Buren	3	2	2	2	2	3	5	1	1	4	1
Washtenaw	6	8	15	4	8	10	6	8	6	3	4
Wayne	119	100	98	117	103	85	78	75	94	78	77
Detroit City	86	74	74	87	66	62	49	54	60	50	53
Wayne County Excluding Detroit City	33	26	24	30	37	23	29	21	34	28	24
Wexford	4	1	-	-	1	-	4	1	1	1	-
Unknown	-	-	-	-	1	-	-	-	-	1	-

Notes: 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.

Postneonatal Death – Deaths occurring to individuals 28–364 days of age.
 -: A dash indicates quantity zero.

Source: 1999-2009 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

**Table 16-A
Number of Neonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 1999-2009**

Health Department	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Michigan	729	777	729	719	771	694	700	660	697	608	600
Allegan County Health Department	5	6	12	6	10	4	9	4	11	4	3
Barry-Eaton District Health Department	2	8	4	7	8	6	4	10	7	4	6
Berrien County Health Department	12	13	14	8	12	5	10	12	13	10	11
Branch-Hillsdale-St. Joseph Health Department	11	9	17	9	8	9	6	15	12	12	12
Calhoun County Health Department	7	13	18	8	7	13	11	11	18	13	13
Central Michigan District Health Department	15	12	13	8	15	9	14	8	13	3	7
Chippewa County Health Department	1	1	1	2	3	-	4	2	-	1	-
City Of Detroit Health Department	159	159	140	153	164	149	161	121	121	125	113
Public Health Delta & Menominee Counties	1	3	7	2	6	3	1	-	3	1	2
Dickinson-Iron District Health Department	2	2	1	-	1	2	-	1	1	2	2
District Health Department #10	12	16	15	18	22	14	18	10	16	14	11
District Health Department #2	1	3	5	3	4	1	2	1	1	2	4
District Health Department #4	9	4	5	2	2	2	-	5	3	1	-
Genesee County Health Department	56	54	40	48	50	51	33	44	40	27	34
Grand Traverse County Health Department	4	5	8	5	3	6	2	4	5	7	4
Ingham County Health Department	16	19	19	19	17	21	19	13	21	23	14
Ionia County Health Department	2	6	4	5	4	2	2	3	2	-	1
Jackson County Health Department	15	14	13	5	15	13	17	11	12	11	7
Kalamazoo County Human Services Department	9	20	23	29	19	12	17	14	22	13	20
Kent County Health Department	51	59	51	55	60	49	46	58	48	47	42
Lapeer County Health Department	4	3	4	5	4	-	-	6	4	4	6
Lenawee County Health Department	7	2	6	2	1	4	6	8	5	9	8
Livingston County Health Department	8	7	4	5	10	6	8	5	11	6	9
Luce-Mackinac-Alger-Schoolcraft Health Department	1	3	1	-	2	2	3	2	1	4	1
Macomb County Health Department	49	44	43	38	44	37	41	30	48	40	51

Table 16-A
Number of Neonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 1999-2009
(Continued)

Health Department	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Marquette County Health Department	2	3	1	4	1	-	2	2	2	3	2
Mid-Michigan District Health Department	9	10	9	11	14	9	2	7	8	4	6
Midland County Health Department	6	4	2	4	3	6	7	7	3	1	3
Monroe County Health Department	4	6	9	9	2	6	7	11	6	5	3
Muskegon County Health Department	23	11	17	9	17	16	10	9	13	9	9
Oakland County Health Department	64	83	72	68	73	82	73	72	71	62	61
Ottawa County Health Department	18	18	16	21	17	12	11	18	17	19	11
Bay County Health Department	4	5	10	6	5	1	8	8	5	3	7
Saginaw County Health Department	14	20	19	16	11	13	18	8	16	10	15
Shiawassee County Health Department	3	5	3	5	5	6	4	-	8	-	2
St Clair County Health Department	12	11	9	8	12	16	10	9	10	4	5
Van Buren-Cass County Health Department	7	2	8	6	7	8	15	1	7	8	8
Washtenaw County Health Department	23	25	19	21	19	19	19	15	17	14	17
Wayne County Health Department	64	74	53	73	82	67	64	77	59	72	60
Benzie-Leelanau District Health Department	1	-	-	1	6	1	2	2	2	-	-
Northwest Michigan Community Health Agency	5	5	5	3	2	3	2	1	6	6	2
Western Upper Peninsula District Health Department	5	2	-	3	2	3	4	5	4	4	1
Tuscola County Health Department	1	3	3	6	1	3	3	4	1	-	2
Huron County Health Department	-	3	3	2	-	-	3	2	-	-	3
Sanilac County Health Department	4	2	3	1	1	3	1	4	4	1	2
Unknown	1	-	-	-	-	-	1	-	-	-	-

Notes: 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.

Neonatal Death: Deaths occurring to individuals less than 28 days of age.
 -: A dash indicates quantity zero.

Source: 1999-2009 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

Created: 10/5/2011

**Table 16-B
Number of Postneonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 1999-2009**

Health Department	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Michigan	342	335	337	335	341	290	313	280	300	286	281
Allegan County Health Department	4	3	1	3	4	4	3	4	6	2	2
Barry-Eaton District Health Department	5	5	-	2	2	3	2	3	4	7	4
Berrien County Health Department	13	6	8	10	7	3	10	5	8	6	7
Branch-Hillsdale-St. Joseph Health Department	3	6	8	4	7	7	5	3	5	4	1
Calhoun County Health Department	9	2	8	7	9	5	7	6	10	1	7
Central Michigan District Health Department	4	4	6	8	6	9	3	4	4	1	5
Chippewa County Health Department	-	3	-	-	-	-	1	2	1	-	-
City Of Detroit Health Department	86	74	74	87	66	62	49	54	60	50	53
Public Health Delta & Menominee Counties	1	2	2	-	1	1	1	1	2	1	1
Dickinson-Iron District Health Department	1	-	1	-	-	-	2	3	-	-	1
District Health Department #10	6	11	5	3	5	3	13	7	8	8	4
District Health Department #2	1	2	1	1	1	2	1	1	2	3	3
District Health Department #4	3	1	2	1	1	1	-	2	2	1	6
Genesee County Health Department	25	24	19	33	21	26	20	17	17	19	17
Grand Traverse County Health Department	2	1	-	1	1	-	4	2	2	1	2
Ingham County Health Department	6	10	6	5	8	8	12	5	9	3	7
Ionia County Health Department	2	2	3	1	1	1	1	-	4	1	-
Jackson County Health Department	8	8	7	5	5	1	8	6	3	3	5
Kalamazoo County Human Services Department	6	8	12	6	7	9	6	3	6	9	9
Kent County Health Department	17	28	21	20	28	26	21	26	18	21	14
Lapeer County Health Department	4	2	2	1	2	1	3	1	1	1	5
Lenawee County Health Department	2	3	2	1	4	1	-	2	4	2	-
Livingston County Health Department	3	4	5	1	6	-	2	2	3	4	3
Luce-Mackinac-Alger-Schoolcraft Health Department	-	2	-	1	2	-	-	2	-	2	1
Macomb County Health Department	17	20	22	15	14	21	20	21	20	21	25

Table 16-B
Number of Postneonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 1999-2009
(Continued)

Health Department	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Marquette County Health Department	1	-	3	1	-	-	1	2	-	-	2
Mid-Michigan District Health Department	6	1	3	3	7	3	2	5	-	5	3
Midland County Health Department	7	2	5	3	1	2	1	1	-	2	2
Monroe County Health Department	1	2	4	7	1	7	4	4	4	6	7
Muskegon County Health Department	10	7	8	5	8	5	3	4	6	7	6
Oakland County Health Department	21	23	24	27	33	13	30	19	22	26	17
Ottawa County Health Department	4	8	12	2	5	6	5	4	1	4	5
Bay County Health Department	-	1	1	1	3	1	2	4	3	5	1
Saginaw County Health Department	8	7	8	8	13	8	10	10	10	15	11
Shiawassee County Health Department	1	-	2	7	1	2	6	2	2	1	-
St Clair County Health Department	3	6	6	5	4	4	4	4	2	4	9
Van Buren-Cass County Health Department	4	5	3	6	3	4	7	3	2	6	2
Washtenaw County Health Department	6	8	15	4	8	10	6	8	6	3	4
Wayne County Health Department	33	26	24	30	37	23	29	21	34	28	24
Benzie-Leelanau District Health Department	2	-	-	1	2	1	3	-	1	-	-
Northwest Michigan Community Health Agency	2	2	1	4	1	4	2	4	4	-	3
Western Upper Peninsula District Health Department	-	1	-	2	1	1	-	1	1	1	-
Tuscola County Health Department	3	3	1	3	3	2	3	1	1	1	2
Huron County Health Department	1	1	-	-	-	-	-	1	-	-	-
Sanilac County Health Department	1	1	2	-	1	-	1	-	2	-	1
Unknown	-	-	-	-	1	-	-	-	-	1	-

Notes: 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.

Postneonatal Death: Deaths occurring to individuals 28–364 days of age.
 -: A dash indicates quantity zero.

Source: 1999-2009 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Community Health

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