

MICHIGAN INFANT DEATH STATISTICS
January 1 through December 31, 2014



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LANSING, MICHIGAN
APRIL 2016

Table Of Contents

Summary	1
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Selected Infant Death Statistics, Numbers, Averages & Rates

Table 1 Number of Infant Deaths, Live Births & Infant Death Rates for Michigan Residents, 1970-2014	4
Figure 1 Figure of Infant Deaths, 1970-2014	6
Table 2 Number of Infant Deaths, Live Births & Infant Death Rates By Race, 1970-2014	7
Figure 2 Comparison of White & Black Infant Death Rates for Michigan Residents, 1970-2014	9
Table 3 Infant Death Rates by County of Residence, 2014 & 2010 - 2014 Average	10
Table 4 Infant Death Rates by Selected Cities of Residence, 2014 & 2010 - 2014 Average	13
Table 5 Infant Deaths by Race for Michigan, Detroit City & Wayne County, 1990- 2014	14
Table 6 Infant Death Rates by Selected Characteristics of Newborn & of Mother, 2014	17
Table 7 Number & Rate of Infant Deaths by Race, Michigan & United States Residents, 1989 - 2014	19
Table 8-A Number of Hispanic Deaths by Selected County & Michigan, 2004 - 2014	20
Table 8-B Number of Arabic Infant Deaths by Selected County & Michigan, 2004 - 2014	21
Table 9 Infant, Hebdomadal, Fetal & Perinatal Death Rates by Specified Race & Ancestry, 2014	22
Table 10 Number of Infant Deaths by Cause of Death, 1980-2014	23
Table 11 Three-year Moving Average Infant Deaths Rates by Cause of Death, 1980-2014	24
Figure 3 Three-year Average Infant Death Rates by Cause, 1980-2014	25
Table 12-A Sudden Unexpected Infant Deaths, 1989 - 2014	26
Table 12-B Accidental Suffocation & Strangulation, 1989 - 2014	27
Table 13 Sudden Unexpected Infant Deaths by Race, 1989 - 2014	28

Three-year Moving Averages by Region

Table 14-A Three-Year Moving Average Infant Death Rates by County, 2003-2014	29
Table 14-B White Three-Year Moving Average Infant Death Rates by County, 2003-2014	32
Table 14-C Black Three-Year Moving Average Infant Death Rates by County, 2003-2014	35
Table 15-A Three-Year Moving Average Infant Death Rates by District, 2003-2014	36
Table 15-B White Three-Year Moving Average Infant Death Rates by District, 2003-2014	38
Table 15-C Black Three-Year Moving Average Infant Death Rates by District, 2003-2014	40

Table Of Contents

Three-year Moving Averages by Region (continued)

Table 16-A Three-Year Moving Average Infant Death Rates by City, 2003-2014	41
Table 16-B White Three-Year Moving Average Infant Death Rates by City, 2003-2014	42
Table 16-C Black Three-Year Moving Average Infant Death Rates by City, 2003-2014	43

Neonatal & Postneonatal Deaths by Region

Table 17-A Neonatal Deaths by Michigan County & Detroit City , 2004-2014	44
Table 17-B Postneonatal Deaths by Michigan County & Detroit City, 2004-2014	48
Table 18-A Neonatal Deaths by Michigan Health Departments, 2004-2014	52
Table 18-B Postneonatal Deaths by Michigan Health Departments, 2004-2014	54

SUMMARY OF 2014 INFANT DEATH STATISTICS

INFANT MORTALITY: For every 1,000 Michigan live births, almost seven infants die before reaching their first birthday. In 2014, 773 infants under the age of one year died, resulting in an infant mortality rate of 6.8 per 1,000 live births. Michigan experienced a significant decline in infant mortality during the early 1990s; but during the 2000s the infant mortality rates remained around 7.9 deaths per 1,000 births. The 2014 rate indicates a drop of the mortality rates to about 7.0 since 2010, from the 7.9 average in the previous decade. (See Table 1.)

Short range forecasts predict within an 80% probability that the mortality rate will gradually decline to about 6.0 by 2020. (See Table 1.)

Both the white and black infant mortality rates remained about the same in recent years, with a persistent racial disparity of about 2.3 black deaths for every 1 white death. In 2005, the white infant death rate was 5.5, and was comparable to the previous ten-year 1996-2005 average of 6.0 deaths per 1,000 white births. The black infant death rate was 17.9 in 2005, and was also comparable to the previous decade average of 17.6 deaths per 1,000 black births. In 2014 the white infant mortality rate was 5.3 per 1,000 live births while the black rate was 13.4 per 1,000 live births. Between 2005-2014 the white infant mortality rate has remained about the same, while the black rate has declined by 25% due to a reduction of infant deaths since 2005. The decline in the Michigan infant mortality rate is largely due to a reduction in black infant deaths. (See Table 2.)

The Michigan infant mortality rate continues to be higher than the last reported national rate. The 2014 infant death rate for the United States is 5.9. (See Table 7.)

LIVE BIRTHS: In 2014, the number of live births increased to 114,460, from the 2013 live birth count of 113,732. However, the 2010-2014 numbers represent historic lows, and Michigan's birth count has gradually decreased since at least 1990. Nationally, there were 3,988,076 births in the U.S. in 2014, a decline of 7.6% from the record number reported for 2007, but a 1.4% increase from last year.

CHARACTERISTICS OF NEWBORN: Certain newborns are at higher risk of dying. In 2014 infants born with very low birth weight (less than 1,500 grams) experienced an infant death rate of 237.9 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 31.0 per 1,000 live births compared to the rate of 5.8 for single birth infants. The excess male infant mortality normally reported in other years was present in 2014, with the infant mortality for male infants at 7.5 per 1,000 male live births and females at 5.9 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 40 and older. Unmarried mothers had infant mortality rates about 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 exposed to secondhand smoking while pregnant had an infant death rate of 9.8 per 1,000 live births compared to a rate of 5.8 for mothers who were not exposed to secondhand 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 "Vital Statistics" and then "Infant Mortality" button. Those who do not have access to the Internet may request that community level data be mailed to them from the address below.

Questions regarding Infant Death Statistics should be addressed to:

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Residence Determined by Reported Residence and Geocoded Residence in the Michigan Death Certificate Registry

Using a process called geocoding, the Division for Vital Records & Health Statistics (DVRHS) has assigned geographic coordinates to most death certificates reported between 2000 and 2013. While the primary purpose of geocoding mortality data is to map patterns of death and to conduct spatial epidemiology, such records can also be used to improve the accuracy of location-related data recorded on the certificate. In mortality datasets, the division has found that the MCD residence is miscoded in certain areas about 10-20% of the time. Often, the person reporting the residence confuses the township with an adjacent city or village. Such errors then alter the calculation of local area statistics; small errors in coding lead to large errors in rates calculated for MCDs with populations below 70,000.

Therefore, all mortality and natality statistics between 2000 and 2013 in division reports of infant deaths were updated and recalculated using the geocoded data. **Birth and death counts and rates are different from data reported prior to 2011.** Statistics for years before 2000 use the residence reported during the course of registering a vital event. When rates calculated from these data differ substantially from Michigan or county rates, one should study the events as part of a trend of geocoded statistics, and consider whether the data reflects jumps indicative of a longterm trend of residence-miscoding.

Table 1
Number of Infant Deaths
Live Births and Infant Death Rates
Michigan Residents, 1970 - 2014

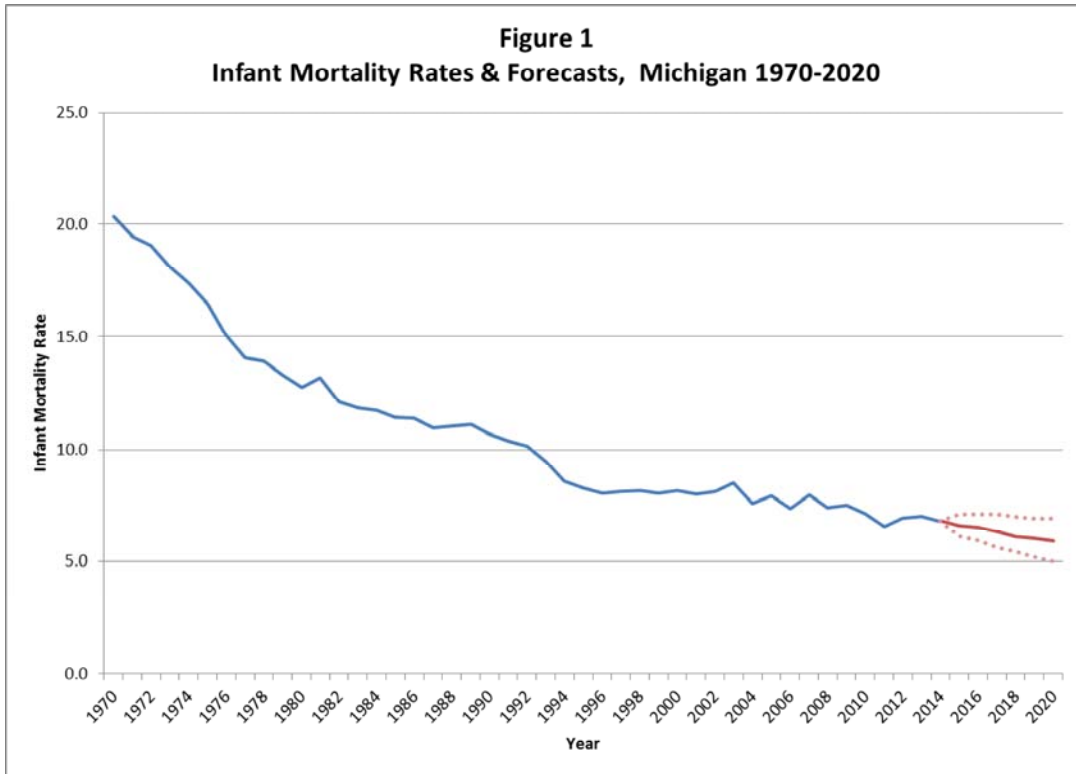
Year	Infant Deaths	Live Births	Infant Death Rate
1970	3,492	171,667	20.3 ±0.7
1971	3,157	162,244	19.5 ±0.7
1972	2,801	146,854	19.1 ±0.7
1973	2,561	141,550	18.1 ±0.7
1974	2,387	137,414	17.4 ±0.7
1975	2,205	133,931	16.5 ±0.7
1976	1,978	131,378	15.1 ±0.7
1977	1,945	138,416	14.1 ±0.6
1978	1,931	138,802	13.9 ±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 - 2014
(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
2010	817	114,717	7.1 ±0.5
2011	749	114,159	6.6 ±0.5
2012	783	112,708	6.9 ±0.5
2013	799	113,732	7.0 ±0.5
2014	773	114,460	6.8 ±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 - 2014 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services



Note: Rates are per 1,000 live births. Rates after 2014 are forecasted within an 80% prediction interval indicated by the dotted lines; this means that the future rates fall between the lower and upper bounds of the interval with 80% probability.

Source: 1970- 2014 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 2
Number of Infant Deaths, Live Births and Infant Death Rates By Race
Michigan Residents, 1970 - 2014

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 - 2014

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
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
2010	462	84,597	5.5 ±0.5	312	22,046	14.2 ±1.6	38	7,425	5.1 ±1.6
2011	411	84,172	4.9 ±0.5	300	21,950	13.7 ±1.5	34	7,529	4.5 ±1.5
2012	455	82,949	5.5 ±0.5	291	21,623	13.5 ±1.5	35	7,696	4.5 ±1.5
2013	473	83,339	5.7 ±0.5	290	22,055	13.1 ±1.5	35	8,081	4.3 ±1.4
2014	452	84,492	5.3 ±0.5	284	21,282	13.3 ±1.5	36	8,574	4.2 ±1.4

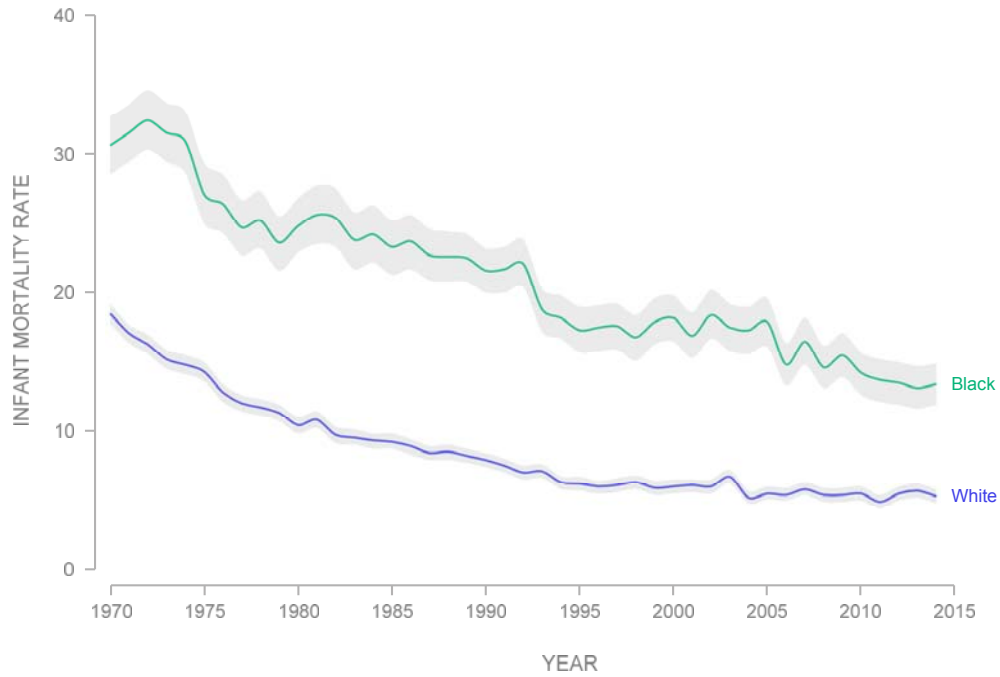
Note: Infant deaths by race of infant; live births used in calculating infant death rates are by race of mother. Rates are per 1,000 live births. Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower 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 - 2014 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Figure 2
Comparison of White and Black Infant Death Rates for Michigan Residents, 1970-2014



Note: Rates are per 1,000 live births. The range indicated by the grey band 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: 1970-2014 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 3
Number of Infant Deaths, Live Births and Infant Death Rates by
Michigan and Michigan County of Residence,
2014 and 2010 - 2014 Average

County of Residence	2014			2010 - 2014		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
MICHIGAN	773	114,460	6.8 ±0.5	784.2	113,955.2	6.9 ±0.2
Alcona	1	59	*	0.6	61.2	*
Alger	-	56	-	-	58.2	-
Allegan	8	1,424	5.6 ±3.9	6.8	1,356.6	5.0 ±1.7
Alpena	2	283	*	1.2	268.0	4.5 ±3.6
Antrim	-	207	-	1.8	200.8	9.0 ±5.8
Arenac	2	134	*	2.0	125.2	16.0 ±9.8
Baraga	-	78	-	0.2	80.6	*
Barry	1	649	*	3.6	629.0	5.7 ±2.6
Bay	9	1,034	8.7 ±5.7	7.4	1,087.8	6.8 ±2.2
Benzie	-	160	-	0.6	151.6	*
Berrien	15	1,864	8.0 ±4.1	15.0	1,883.6	8.0 ±1.8
Branch	4	530	*	3.8	526.8	7.2 ±3.2
Calhoun	9	1,659	5.4 ±3.5	12.6	1,659.8	7.6 ±1.9
Cass	5	546	*	3.4	475.8	7.1 ±3.4
Charlevoix	1	234	*	0.4	244.4	*
Cheboygan	-	215	-	-	197.4	-
Chippewa	2	384	*	2.4	358.8	6.7 ±3.8
Clare	1	349	*	1.2	327.0	3.7 ±2.9
Clinton	5	765	*	3.2	784.2	4.1 ±2.0
Crawford	-	120	-	0.4	116.0	*
Delta	3	406	*	2.2	370.0	5.9 ±3.5
Dickinson	1	239	*	1.4	247.6	5.7 ±4.2
Eaton	7	1,211	5.8 ±4.3	7.2	1,164.6	6.2 ±2.0
Emmet	1	302	*	1.6	306.4	5.2 ±3.6
Genesee	41	4,968	8.3 ±2.5	37.8	5,027.2	7.5 ±1.1
Gladwin	3	274	*	1.6	245.8	6.5 ±4.5
Gogebic	1	114	*	0.6	122.8	*
Gd. Traverse	6	969	6.2 ±4.9	2.8	929.4	3.0 ±1.6
Gratiot	4	407	*	3.0	416.2	7.2 ±3.6
Hillsdale	-	560	-	1.8	548.4	3.3 ±2.1

Table 3
Number of Infant Deaths, Live Births and Infant Death Rates by
Michigan and Michigan County of Residence,
2014 and 2010 - 2014 Average

County of Residence	2014			2010 - 2014		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Houghton	2	363	*	2.2	383.0	5.7 ±3.4
Huron	-	272	-	1.2	299.6	4.0 ±3.2
Ingham	21	3,385	6.2 ±2.6	21.2	3,294.4	6.4 ±1.2
Ionia	3	723	*	3.4	740.4	4.6 ±2.2
Iosco	2	242	*	1.8	225.6	8.0 ±5.2
Iron	1	97	*	0.8	92.4	*
Isabella	2	710	*	3.6	666.2	5.4 ±2.5
Jackson	8	1,870	4.3 ±3.0	10.4	1,815.6	5.7 ±1.6
Kalamazoo	16	3,174	5.0 ±2.5	20.4	3,132.0	6.5 ±1.3
Kalkaska	3	168	*	2.2	172.6	12.7 ±7.5
Kent	52	8,886	5.9 ±1.6	50.8	8,815.0	5.8 ±0.7
Keweenaw	-	22	-	-	17.8	-
Lake	-	87	-	0.4	92.4	*
Lapeer	5	851	*	3.6	827.2	4.4 ±2.0
Leelanau	3	157	*	1.6	167.4	9.6 ±6.6
Lenawee	9	1,074	8.4 ±5.5	9.4	1,059.4	8.9 ±2.5
Livingston	13	1,813	7.2 ±3.9	10.2	1,745.0	5.8 ±1.6
Luce	2	58	*	0.4	55.4	*
Mackinac	-	90	-	-	85.4	-
Macomb	48	9,332	5.1 ±1.5	53.6	9,195.0	5.8 ±0.7
Manistee	2	181	*	1.0	184.4	*
Marquette	1	638	*	2.2	642.2	3.4 ±2.0
Mason	2	310	*	1.2	292.8	4.1 ±3.3
Mecosta	4	427	*	4.4	423.6	10.4 ±4.3
Menominee	1	223	*	0.6	204.0	*
Midland	6	883	6.8 ±5.4	5.0	861.4	5.8 ±2.3
Missaukee	2	196	*	0.6	176.2	*
Monroe	3	1,545	*	7.8	1,557.6	5.0 ±1.6
Montcalm	2	693	*	4.4	729.8	6.0 ±2.5
Montmorency	-	61	-	0.6	62.8	*

Table 3
Number of Infant Deaths, Live Births and Infant Death Rates by
Michigan and Michigan County of Residence,
2014 and 2010 - 2014 Average

County of Residence	2014			2010 - 2014		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Muskegon	15	2,084	7.2 ±3.6	18.0	2,125.2	8.5 ±1.7
Newaygo	6	580	10.3 ±8.2	4.2	553.2	7.6 ±3.2
Oakland	84	13,454	6.2 ±1.3	84.2	13,337.4	6.3 ±0.6
Oceana	6	299	20.1 ±15.9	3.2	314.0	10.2 ±5.0
Ogemaw	1	208	*	1.2	194.2	6.2 ±4.9
Ontonagon	1	24	*	0.4	31.0	*
Osceola	-	269	-	1.0	273.2	*
Oscoda	1	85	*	0.6	80.8	*
Otsego	3	257	*	3.0	249.0	12.0 ±6.1
Ottawa	13	3,371	3.9 ±2.1	19.6	3,362.6	5.8 ±1.2
Presque Isle	1	98	*	1.4	92.6	15.1 ±11.1
Roscommon	1	160	*	0.4	172.0	*
Saginaw	21	2,259	9.3 ±4.0	16.4	2,289.4	7.2 ±1.5
St. Clair	9	1,596	5.6 ±3.7	9.0	1,599.8	5.6 ±1.6
St. Joseph	5	825	*	6.0	826.2	7.3 ±2.6
Sanilac	3	440	*	2.0	447.6	4.5 ±2.8
Schoolcraft	-	64	-	-	68.6	-
Shiawasee	3	712	*	2.8	717.4	3.9 ±2.0
Tuscola	2	585	*	3.0	549.4	5.5 ±2.8
Van Buren	3	872	*	5.0	922.8	5.4 ±2.1
Washtenaw	28	3,709	7.5 ±2.8	20.0	3,751.6	5.3 ±1.0
Wayne	217	23,366	9.3 ±1.2	227.0	23,595.6	9.6 ±0.6
Wexford	4	412	*	3.8	413.6	9.2 ±4.1
Unknown	-	-	-	-	0.2	-

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.

*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: 2010 - 2014 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 4
Number of Infant Deaths, Live Births and Infant Death Rates for
Selected Cities of Residence, 2014 and 2010 - 2014 Average

City of Residence	2014			2010 - 2014		
	Infant Deaths	Live Births	Infant Death Rate	Average Infant Deaths	Average Live Births	Average Infant Death Rate
Ann Arbor	8	1,082	7.4 ±5.1	4.4	1,109.4	4.0 ±1.7
Battle Creek	5	781	*	8.0	828.6	9.7 ±3.0
Dearborn	6	1,683	3.6 ±2.8	11.0	1,643.2	6.7 ±1.8
Dearborn Heights	8	806	9.9 ±6.8	4.8	773.6	6.2 ±2.5
Detroit	116	9,818	11.8 ±2.1	135.4	10,246.6	13.2 ±1.0
East Lansing	-	-	-	-	48.2	-
Farmington Hills	6	830	7.2 ±5.8	6.0	834.8	7.2 ±2.6
Flint	14	1,520	9.2 ±4.8	17.8	1,680.0	10.6 ±2.2
Grand Rapids	21	3,139	6.7 ±2.9	26.4	3,314.0	8.0 ±1.4
Kalamazoo	6	1,022	5.9 ±4.7	8.8	1,138.0	7.7 ±2.3
Kentwood	4	814	*	3.4	785.4	4.3 ±2.1
Lansing	17	1,857	9.2 ±4.3	14.2	1,869.4	7.6 ±1.8
Livonia	2	914	*	3.6	861.2	4.2 ±1.9
Midland	4	513	*	2.8	477.6	5.9 ±3.1
Muskegon	6	546	11.0 ±8.7	7.2	610.2	11.8 ±3.8
Novi	4	710	*	3.2	631.8	5.1 ±2.5
Pontiac	13	1,110	11.7 ±6.3	11.0	1,086.6	10.1 ±2.7
Portage	1	552	*	2.8	574.4	4.9 ±2.5
Rochester Hills	3	739	*	3.2	748.8	4.3 ±2.1
Roseville	2	587	*	3.6	596.4	6.0 ±2.8
Royal Oak	4	757	*	5.4	759.2	7.1 ±2.7
Saginaw	15	806	18.6 ±9.3	10.8	866.8	12.5 ±3.3
Southfield	10	764	13.1 ±8.1	8.2	770.0	10.6 ±3.2
St Clair Shores	3	589	*	2.2	565.4	3.9 ±2.3
Sterling Heights	9	1,475	6.1 ±4.0	9.2	1,424.6	6.5 ±1.9
Taylor	9	869	10.4 ±6.7	8.6	854.0	10.1 ±3.0
Troy	3	812	*	3.2	789.4	4.1 ±2.0
Warren	9	1,681	5.4 ±3.5	11.8	1,640.4	7.2 ±1.8
Westland	11	1,109	9.9 ±5.8	10.2	1,069.0	9.5 ±2.6
Wyoming	8	1,237	6.5 ±4.5	6.2	1,226.8	5.1 ±1.8

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. City birth and mortality statistics have changed from pre-2011 reports due to geocoding. 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: 2010-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2010-2014 Geocoded Michigan Birth Certificate Registries Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

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- 2014

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

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- 2014

Year	Race	Michigan		Detroit City		Wayne County (excluding Detroit)		Michigan (excluding Wayne County)	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
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
2000	Total	1,112	8.2 ±0.5	232	14.7 ±1.9	98	6.4 ±1.3	782	7.4 ±0.5
	White	637	6.0 ±0.5	20	7.5 ±3.3	64	5.0 ±1.2	553	6.1 ±0.5
	Black	437	18.2 ±1.7	206	16.1 ±2.2	33	20.2 ±6.8	198	20.5 ±2.8
2001	Total	1,066	8.0 ±0.5	210	13.9 ±1.9	81	5.3 ±1.2	775	7.5 ±0.5
	White	635	6.1 ±0.5	14	5.3 ±2.8	58	4.5 ±1.2	563	6.3 ±0.5
	Black	398	16.9 ±1.7	195	15.9 ±2.2	21	12.9 ±5.5	182	18.9 ±2.7
2002	Total	1,054	8.1 ±0.5	239	16.8 ±2.1	103	6.9 ±1.3	712	7.1 ±0.5
	White	611	6.0 ±0.5	20	8.0 ±3.5	70	5.7 ±1.3	521	6.0 ±0.5
	Black	410	18.4 ±1.8	217	19.1 ±2.5	28	16.9 ±6.2	165	17.9 ±2.7
2003	Total	1,112	8.5 ±0.5	227	16.2 ±2.1	120	8.1 ±1.4	765	7.5 ±0.5
	White	680	6.7 ±0.5	28	11.7 ±4.3	85	7.1 ±1.5	567	6.5 ±0.5
	Black	391	17.5 ±1.7	199	17.9 ±2.5	29	16.9 ±6.1	163	17.1 ±2.6
2004	Total	984	7.6 ±0.5	211	15.6 ±2.1	89	6.1 ±1.3	684	6.7 ±0.5
	White	527	5.2 ±0.4	12	5.0 ±2.8	54	4.6 ±1.2	461	5.3 ±0.5
	Black	388	17.3 ±1.7	193	17.9 ±2.5	30	16.1 ±5.7	165	16.8 ±2.5
2005	Total	1,013	7.9 ±0.5	210	16.0 ±2.1	93	6.5 ±1.3	710	7.1 ±0.5
	White	549	5.5 ±0.5	13	5.7 ±3.1	58	5.1 ±1.3	478	5.6 ±0.5
	Black	400	17.9 ±1.7	188	17.9 ±2.5	34	17.7 ±5.9	178	17.9 ±2.6
2006	Total	940	7.4 ±0.5	175	13.5 ±2.0	98	6.8 ±1.4	667	6.7 ±0.5
	White	534	5.4 ±0.5	9	4.0 ±2.6	61	5.5 ±1.4	464	5.4 ±0.5
	Black	339	14.8 ±1.6	153	14.7 ±2.3	31	14.4 ±5.0	155	15.0 ±2.3

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- 2014

Year	Race	Michigan		Detroit City		Wayne County (excluding Detroit)		Michigan (excluding Wayne County)	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
2007	Total	997	8.0 ±0.5	179	14.8 ±2.1	95	6.7 ±1.3	723	7.3 ±0.5
	White	549	5.8 ±0.5	13	7.1 ±3.8	59	5.5 ±1.4	477	5.9 ±0.5
	Black	368	16.5 ±1.7	155	16.1 ±2.5	25	11.4 ±4.5	188	17.9 ±2.5
2008	Total	894	7.4 ±0.5	175	14.8 ±2.2	100	7.2 ±1.4	619	6.5 ±0.5
	White	496	5.4 ±0.5	8	4.7 ±3.3	63	5.9 ±1.5	425	5.4 ±0.5
	Black	332	14.6 ±1.6	159	16.7 ±2.6	27	12.3 ±4.6	146	13.3 ±2.1
2009	Total	881	7.5 ±0.5	166	14.8 ±2.2	82	6.1 ±1.3	633	6.8 ±0.5
	White	470	5.4 ±0.5	6	4.3 ±3.5	54	5.4 ±1.4	410	5.4 ±0.5
	Black	346	15.5 ±1.6	152	16.7 ±2.6	19	7.9 ±3.5	175	16.2 ±2.4
2010	Total	817	7.1 ±0.5	146	13.3 ±2.2	87	6.6 ±1.4	584	6.4 ±0.5
	White	462	5.5 ±0.5	10	9.6 ±5.9	44	4.6 ±1.4	408	5.5 ±0.5
	Black	312	14.2 ±1.6	128	14.3 ±2.5	37	15.0 ±4.8	147	13.8 ±2.2
2011	Total	749	6.6 ±0.5	130	12.6 ±2.1	100	7.5 ±1.5	519	5.7 ±0.5
	White	411	4.9 ±0.5	5	*	58	6.0 ±1.5	348	4.7 ±0.5
	Black	300	13.7 ±1.5	119	14.0 ±2.5	37	14.6 ±4.7	144	13.2 ±2.1
2012	Total	783	6.9 ±0.5	151	15.0 ±2.4	87	6.7 ±1.4	545	6.1 ±0.5
	White	455	5.5 ±0.5	12	15.7 ±8.8	56	5.9 ±1.6	387	5.3 ±0.5
	Black	291	13.5 ±1.5	133	16.0 ±2.7	27	11.2 ±4.2	131	12.0 ±2.0
2013	Total	799	7.0 ±0.5	134	13.3 ±2.2	83	6.1 ±1.3	582	6.5 ±0.5
	White	473	5.7 ±0.5	8	10.0 ±6.9	56	5.9 ±1.5	409	5.6 ±0.5
	Black	290	13.1 ±1.5	120	14.5 ±2.6	22	8.2 ±3.4	148	13.4 ±2.1
2014	Total	773	6.8 ±0.5	116	11.8 ±2.1	101	7.5 ±1.4	556	6.1 ±0.5
	White	452	5.3 ±0.5	6	7.2 ±5.7	56	6.0 ±1.6	390	5.2 ±0.5
	Black	284	13.3 ±1.5	108	13.3 ±2.5	37	14.4 ±4.6	139	13.2 ±2.2

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.

Source: 1990- 2014 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.

Table 6
Number of Infant Deaths, Live Births and Infant Death Rates
by Selected Characteristics of Newborn and of Mother
for Michigan Residents, 2014

Characteristics of Newborn	Infant Deaths	Live Births	Infant Death Rate
Sex of Infant	773	114,460	6.8 ±0.5
Male	444	58,834	7.5 ±0.7
Female	327	55,625	5.9 ±0.6
Birthweight	773	114,460	6.8 ±0.5
1,499 Grams or Less	413	1,736	237.9 ±20.4
1,500 - 2,499 Grams	101	7,856	12.9 ±2.5
2,500 Grams or More	249	104,822	2.4 ±0.3
Plurality	773	114,460	6.8 ±0.5
Single Birth	641	110,231	5.8 ±0.4
Multiple Birth	131	4,226	31.0 ±5.2
Characteristics of Mother	Infant Deaths	Live Births	Infant Death Rate
Age of Mother	773	114,460	6.8 ±0.5
< 20	99	7,037	14.1 ±2.8
20 - 29	432	62,018	7.0 ±0.7
30 - 39	215	42,640	5.0 ±0.7
40 +	25	2,757	9.1 ±3.5
Marital Status	773	114,460	6.8 ±0.5
Married	308	65,767	4.7 ±0.5
Unmarried	464	48,693	9.5 ±0.9
Level of Prenatal Care	773	114,460	6.8 ±0.5
Adequate	405	76,469	5.3 ±0.5
Intermediate	165	27,780	5.9 ±0.9
Inadequate	173	10,199	17.0 ±2.5

Table 6
Number of Infant Deaths, Live Births and Infant Death Rates
by Selected Characteristics of Newborn and of Mother
for Michigan Residents, 2014

Exposure to Tobacco	Infant Deaths	Live Births	Infant Death Rate
Smoked During Pregnancy	773	114,460	6.8 ±0.5
No	631	94,334	6.7 ±0.5
Yes	141	20,126	7.0 ±1.2
Secondhand Smoke During Pregnancy	773	114,460	6.8 ±0.5
No	538	92,683	5.8 ±0.5
Yes	165	16,915	9.8 ±1.5
Smoked or Secondhand Smoke During Pregnancy	773	114,460	6.8 ±0.5
No	503	83,635	6.0 ±0.5
Yes	212	26,975	7.9 ±1.1
History of smoking	773	114,460	6.8 ±0.5
No	547	90,771	6.0 ±0.5
Yes	208	23,369	8.9 ±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: 2014 Michigan Resident Birth-Death Matched File, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 7
Number and Rate of Infant Deaths by Race,
Michigan and United States Residents, 1989 - 2014

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	28,059	6.6	18,164	5.6	8,543	12.7	894	7.4	496	5.4	332	14.6
2009	26,412	6.4	16,817	5.3	8,312	12.6	881	7.5	470	5.4	346	15.5
2010	24,548	6.1	15,933	5.2	7,388	11.6	817	7.1	462	5.5	312	14.2
2011	23,910	6.1	15,453	5.1	7,058	11.2	749	6.6	411	4.9	300	13.7
2012	23,654	6.0	15,264	5.1	6,896	10.9	783	6.9	455	5.5	291	13.5
2013	23,440	6.0	15,125	5.0	7,123	11.2	799	7.0	473	5.7	290	13.1
2014	23,215	5.9	14,883	5.1	7,076	10.4	773	6.8	452	5.3	284	13.3

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

Source: 1989 - 2014 Michigan Resident Birth and Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.
 2007-2012 NCHS, Linked Birth / Infant Death Records 2007-2013 on CDC WONDER On-line Database. Accessed at <http://wonder.cdc.gov/lbd-current.html> on Jan 5, 2016. "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 Middle Easterner Infant Deaths by Selected County and Michigan
Michigan Residents, 2004 - 2014

Hispanic Infant Deaths

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Michigan	76	92	94	90	74	74	57	44	74	80	61
Hispanic Infant Death Rates	9.8	11.0	11.0	10.3	8.5	9.0	7.0	5.6	9.7	10.3	8.0
Allegan	1	2	2	-	2	1	-	1	-	3	-
Genesee	4	3	5	5	1	1	1	2	-	-	1
Ingham	4	4	2	3	2	8	1	1	2	4	2
Kalamazoo	-	4	2	4	3	-	4	-	2	2	1
Kent	13	14	27	13	16	6	8	12	10	6	7
Lenawee	1	-	1	2	-	2	1	1	2	5	2
Macomb	1	1	3	6	2	4	-	-	1	3	-
Muskegon	3	1	1	2	2	3	-	1	1	5	-
Oakland	7	13	7	5	9	9	6	7	8	8	4
Ottawa	3	4	4	3	3	4	1	2	4	8	2
Saginaw	1	3	3	8	4	5	2	2	5	4	4
Van Buren	2	7	-	2	2	-	1	-	2	1	2
Washtenaw	1	2	2	-	3	4	2	-	2	1	-
Wayne	17	12	15	19	15	13	15	8	16	17	13
All Other Counties	18	22	20	18	10	14	15	7	19	13	23

Table 8-B
Number of Hispanic and Middle Easterner Infant Deaths by Selected County and Michigan
Michigan Residents, 2004 - 2014 (Continued)

Middle Easterner Infant Deaths

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Michigan	12	24	31	32	34	22	24	24	26	36	21
Arabic Infant Death Rates	3.3	6.3	7.6	8.0	8.5	5.8	5.7	5.9	6.2	7.8	4.4
Macomb	2	2	5	3	7	6	5	2	5	6	3
Oakland	1	5	3	4	8	2	6	3	5	7	3
Wayne	5	13	22	23	16	10	10	15	14	17	9
All Other Counties	4	4	1	2	3	4	3	4	2	6	6

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: 2014 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.

Table 9
Infant, Hebdomadal, Fetal and Perinatal Death Rates
by Specified Race and Ancestry
Michigan Residents, 2014

Race/Ancestry	Live Births	Infant Deaths		Hebdomadal Deaths		Fetal Deaths		Perinatal Deaths	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Races	114,460	773	6.8 ±0.5	417	3.6 ±0.3	588	5.1 ±0.4	1,005	8.7 ±0.5
White	84,492	452	5.3 ±0.5	245	2.9 ±0.4	169	2.0 ±0.3	414	4.9 ±0.5
Black	21,282	284	13.3 ±1.5	152	7.1 ±1.1	86	4.0 ±0.8	238	11.1 ±1.4
American Indian	601	9	15.0 ±9.7	4	*	1	*	5	*
Asian and Pacific Islander	3,835	19	5.0 ±2.2	9	2.3 ±1.5	12	3.1 ±1.8	21	5.5 ±2.3
Middle Easterner	4,744	21	4.4 ±1.9	12	2.5 ±1.4	21	4.4 ±1.9	33	6.9 ±2.4
Hispanic	7,625	61	8.0 ±2.0	31	4.1 ±1.4	51	6.6 ±1.8	82	10.7 ±2.3

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: 2014 Michigan Resident Infant Death File, 2014 Michigan Fetal Death Registry
 Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.

Table 10
Number of Infant Deaths by Cause of Death,
1980-2014, Michigan Residents

Causes of Death	1980	1985	1990	1995	2000	2005	2009	2010	2011	2012	2013	2014
All Causes	2,280	1,575	1,638	1,110	1,112	1,013	881	817	749	783	799	773
Certain gastrointestinal diseases	7	6	6	6	10	12	12	9	13	7	5	6
Septicemia	8	6	17	2	5	10	8	4	1	8	2	8
Remainder of infectious and parasitic diseases	5	11	18	12	7	6	2	3	2	2	3	5
Meningitis	13	7	11	2	3	3	1	5	1	2	1	1
Pneumonia and Influenza	27	11	26	20	20	6	6	8	6	5	7	7
Congenital anomalies	321	330	300	204	192	197	181	184	125	127	160	139
Newborn affected by maternal complications of pregnancy	72	52	108	47	45	67	62	40	49	68	52	42
Newborn affected by complications of placenta, cord and membranes	50	34	24	33	36	28	24	26	18	28	30	28
Disorders relating to short gestation and unspecified low birthweight	145	150	251	219	262	219	183	198	188	188	176	174
Birth trauma	45	14	16	8	2	1	-	-	1	-	-	-
Intrauterine hypoxia and birth asphyxia	69	43	25	11	24	19	7	20	7	14	8	7
Respiratory distress syndrome	206	176	164	82	65	57	23	23	14	26	20	19
Other respiratory conditions	199	132	120	63	65	52	42	27	28	27	20	22
Infections specific to the perinatal period	35	32	33	23	35	42	26	27	22	21	22	24
Neonatal hemorrhage	38	10	8	13	28	23	17	12	11	12	9	18
All other and ill-define conditions originating in the perinatal period	169	168	73	47	39	46	62	27	39	34	47	28
Sudden infant death syndrome	260	228	257	148	99	47	45	44	33	15	31	35
Accidents and adverse effects	39	35	38	40	55	68	74	66	83	93	90	89
Homicides	7	8	17	12	13	15	10	13	11	14	5	13
All other causes	136	122	126	118	107	95	96	81	97	92	111	108

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: 1980-2014 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.

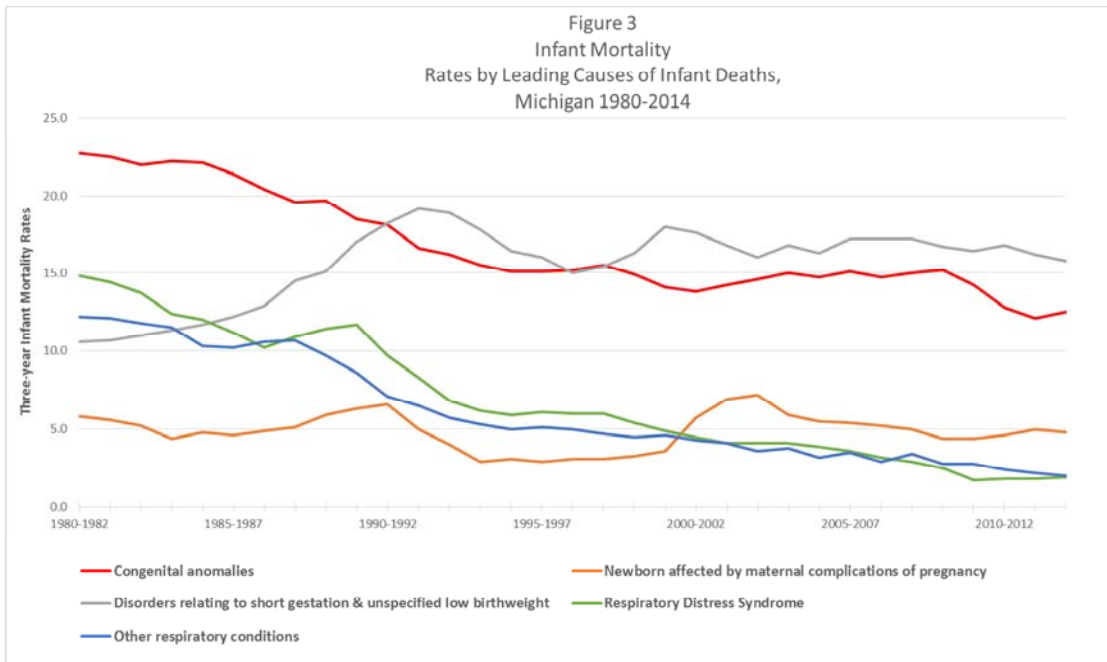
Table 11
Three-year Moving Average Infant Deaths Rates per 10,000 Live Births, by Cause of Death,
1980-2014, Michigan Residents

Causes of Death	1980 to 1982	1985 to 1987	1990 to 1992	1995 to 1997	2000 to 2002	2005 to 2007	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013	2012 to 2014
Total Infant Deaths	126.8	112.4	104.2	81.5	81.0	77.6	76.2	73.4	70.7	68.8	68.4	69.1
Certain gastrointestinal diseases	.6	.6	.6	.6	.6	.9	1.0	.9	1.0	.8	.7	.5
Septicemia	.4	.5	.9	.4	.5	.6	.7	.6	.4	.4	.3	.5
Remainder of infectious and parasitic diseases	.4	.8	1.1	.6	.5	.5	.3	.3	.2	.2	.2	.3
Meningitis	.9	.4	.4	*	*	.3	*	.2	.2	.2	*	*
Pneumonia and Influenza	1.4	1.1	1.8	1.1	1.1	.5	.5	.6	.6	.6	.5	.6
Congenital anomalies	22.7	21.4	18.1	15.1	13.8	15.1	15.0	15.2	14.2	12.8	12.1	12.5
Newborn affected by maternal complications of pregnancy	5.8	4.6	6.6	2.9	5.7	5.4	5.0	4.4	4.4	4.6	5.0	4.8
Newborn affected by complications of placenta, cord and membranes	3.2	2.6	2.1	2.9	2.4	2.1	2.1	2.2	2.0	2.1	2.2	2.5
Disorders relating to short gestation and unspecified low birthweight	10.6	12.2	18.2	16.0	17.6	17.2	17.2	16.7	16.4	16.8	16.2	15.8
Birth trauma	2.5	.7	.7	.4	.2	*	-	-	*	*	*	-
Intrauterine hypoxia and birth asphyxia	4.5	2.4	1.6	1.2	1.6	.9	.8	1.2	1.0	1.2	.9	.9
Respiratory distress syndrome	14.8	11.2	9.7	6.1	4.5	3.6	2.9	2.5	1.7	1.8	1.8	1.9
Other respiratory conditions	12.2	10.2	7.1	5.1	4.3	3.5	3.4	2.8	2.8	2.4	2.2	2.0
Infections specific to the perinatal period	2.2	2.3	2.2	2.1	3.0	2.9	2.9	2.6	2.2	2.0	1.9	2.0
Neonatal hemorrhage	2.0	.7	.6	.8	1.3	1.3	1.0	1.1	1.2	1.0	.9	1.1
All other and ill-define conditions originating in the perinatal period	13.3	12.1	5.1	3.7	3.1	4.3	4.3	3.8	3.7	2.9	3.5	3.2
Sudden infant death syndrome	16.6	17.1	16.6	10.8	4.3	3.8	3.8	3.9	3.5	2.7	2.3	2.4
Accidents and adverse effects	2.8	2.1	2.4	2.7	4.6	5.7	5.9	5.7	6.4	7.1	7.8	8.0
Homicides	.4	.9	.9	.9	.8	.8	.7	.9	1.0	1.1	.9	.9
All other causes	9.7	8.6	7.6	7.9	8.3	8.3	8.5	7.8	7.9	7.9	8.8	9.1

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: 1980-2014 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.



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: 1980-2014 Michigan Resident Infant Death File, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.

Table 12-A
Sudden Infant Death Syndrome (SIDS), Accidental Suffocation & Strangulation in Bed (ASSB)
and
Sudden Unexpected Infant Deaths (SUID),
Michigan Residents 1989-2014

Year	Number				Rate Per 10,000 Live Births		
	SIDS	ASSB	Unknown & unspecified cause	SUID	SIDS	ASSB	SUID
1989	254	10	1	265	17.1	0.7	17.9
1990	256	11	2	269	16.7	0.7	17.6
1991	240	13	3	256	16.1	0.9	17.1
1992	243	7	4	254	16.9	0.5	17.7
1993	210	10	10	230	15.0	0.7	16.5
1994	167	10	8	185	12.1	0.7	13.4
1995	148	15	5	168	11.0	1.1	12.5
1996	149	8	5	162	11.2	0.6	12.2
1997	138	9	13	160	10.3	0.7	12.0
1998	148	11	13	172	11.1	0.8	12.9
1999	114	12	9	135	8.5	0.9	10.1
2000	99	28	6	133	7.3	2.1	9.8
2001	96	39	1	136	7.2	2.9	10.2
2002	85	32	10	127	6.6	2.5	9.8
2003	49	33	14	96	3.7	2.5	7.3
2004	51	49	10	110	3.9	3.8	8.5
2005	47	52	10	109	3.7	4.1	8.5
2006	51	52	9	112	4.0	4.1	8.8
2007	46	56	8	110	3.7	4.5	8.8
2008	48	52	2	102	4.0	4.3	8.4
2009	45	63	4	112	3.8	5.4	9.5
2010	44	52	7	103	3.8	4.5	9.0
2011	33	69	13	115	2.9	6.0	10.1
2012	15	75	16	106	1.3	6.7	9.4
2013	31	72	14	117	2.7	6.3	10.3
2014	35	76	14	125	3.1	6.6	10.9

Table 12-B
Accidental Suffocation & Strangulation in Bed and Total Accidents,
Michigan Residents, 1989-2014

Year	ASSB	Other Accidents & adverse effects	Total Accidents	ASSB Percent of Accidents
1989	10	37	47	21.3%
1990	11	27	38	28.9%
1991	13	25	38	34.2%
1992	7	22	29	24.1%
1993	10	35	45	22.2%
1994	10	27	37	27.0%
1995	15	25	40	37.5%
1996	8	28	36	22.2%
1997	9	24	33	27.3%
1998	11	24	35	31.4%
1999	12	24	36	33.3%
2000	28	27	55	50.9%
2001	39	18	57	68.4%
2002	32	40	72	44.4%
2003	33	31	64	51.6%
2004	49	21	70	70.0%
2005	52	16	68	76.5%
2006	52	19	71	73.2%
2007	56	21	77	72.7%
2008	52	10	62	83.9%
2009	63	11	74	85.1%
2010	52	13	65	80.0%
2011	69	14	83	83.1%
2012	75	17	92	81.5%
2013	72	18	90	80.0%
2014	76	14	90	84.4%

Notes: 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. Before 1999, causes of death were classified according to the following ICD-9 codes: SIDS: 798.0, ASSB: E913.0, Unknown: 799.9. On or after 1999, deaths were classified according to the following ICD-10 codes: SIDS: R95, ASSB: W75 and Unknown: R99.

After 1996, SUID death-scene guidelines and subsequent reporting instructions have shifted how SIDS and ASSB deaths were coded. As a result, some deaths that may have been attributed to SIDS before 1999 were classified as ASSB after 1999.

For further information on sudden unexplained infant deaths, see the [Sudden Unexpected Infant Death Case Registry](#).

Source: 1989 - 2014 Michigan Resident Death Files and Michigan Resident Birth Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 13
Three-year Average Mortality Rates by Race
Sudden Infant Death Syndrome (SIDS), Accidental Suffocation & Strangulation in Bed (ASSB)
and Sudden Unexpected Infant Deaths (SUID),
Michigan Residents 1989-2014

Trend	All			White			Black		
	SIDS	ASSB	SUIDS	SIDS	ASSB	SUIDS	SIDS	ASSB	SUIDS
1989-1991	16.6	0.8	17.5	13.4	0.5	14.1	27.1	1.7	29.0
1990-1992	16.6	0.7	17.5	13.3	0.6	14.1	28.1	1.1	29.3
1991-1993	16.0	0.7	17.1	12.8	0.7	13.8	28.2	0.8	29.5
1992-1994	14.7	0.6	15.9	11.6	0.6	12.7	27.3	0.8	28.7
1993-1995	12.8	0.9	14.2	9.7	0.6	10.9	25.9	1.7	28.3
1994-1996	11.4	0.8	12.7	8.2	0.6	9.3	26.1	1.6	28.1
1995-1997	10.8	0.8	12.2	7.7	0.7	9.0	24.9	1.2	26.6
1996-1998	10.9	0.7	12.3	7.7	0.6	9.0	24.3	1.1	26.4
1997-1999	10.0	0.8	11.7	7.3	0.6	8.5	21.7	1.7	24.9
1998-2000	9.0	1.3	10.9	6.4	0.9	7.7	19.7	3.1	24.1
1999-2001	7.7	2.0	10.0	5.3	1.6	7.2	18.3	3.8	22.8
2000-2002	7.0	2.5	9.9	5.0	1.9	7.3	16.3	5.6	22.5
2001-2003	5.8	2.6	9.1	4.5	2.2	7.2	12.8	5.3	19.4
2002-2004	4.7	2.9	8.5	3.9	2.2	6.9	9.2	7.0	17.9
2003-2005	3.8	3.5	8.1	3.1	2.9	6.7	7.3	6.7	15.6
2004-2006	3.9	4.0	8.6	3.0	3.0	6.7	7.7	8.9	18.0
2005-2007	3.8	4.2	8.7	3.2	3.1	6.7	6.4	10.1	18.2
2006-2008	3.9	4.3	8.7	3.5	2.9	6.7	5.3	10.8	17.4
2007-2009	3.8	4.7	8.9	3.6	3.0	6.8	4.9	11.9	18.1
2008-2010	3.9	4.7	9.0	3.6	3.1	7.0	4.9	11.0	17.0
2009-2011	3.5	5.3	9.5	3.2	3.5	7.1	5.1	12.8	19.5
2010-2012	2.7	5.7	9.5	2.5	3.9	7.3	3.7	13.7	18.6
2011-2013	2.3	6.3	9.9	2.2	4.3	7.6	2.9	15.7	20.6
2012-2014	2.4	5.8	9.4	2.4	3.7	6.9	2.5	15.1	19.2

Notes: Rates are per 10,000 live births. 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. Before 1999, causes of death were classified according to the following ICD-9 codes: SIDS: 798.0, ASSB: E913.0, Unknown: 799.9. On or after 1999, deaths were classified according to the following ICD-10 codes: SIDS: R95, ASSB: W75 and Unknown: R99.

After 1996, SUID death-scene guidelines and subsequent reporting instructions have shifted how SIDS and ASSB deaths were coded. As a result, some deaths that may have been attributed to SIDS before 1999 were classified as ASSB after 1999.

For further information on sudden unexplained infant deaths, see the [Sudden Unexpected Infant Death Case Registry](#).

Source: 1989 - 2014 Michigan Resident Death Files and Michigan Resident Birth Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 14-A
Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 2003-2014

County	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	8.0±0.3	7.6±0.3	7.8±0.3	7.6±0.3	7.6±0.3	7.3±0.3	7.1±0.3	6.9±0.3	6.8±0.3	6.9±0.3
Alcona	*	*	*	*	*	*	*	*	*	*
Alger	*	-	-	*	*	*	*	-	-	-
Allegan	7.8±2.6	6.3±2.3	8.4±2.6	6.9±2.4	6.7±2.4	4.2±1.9	4.5±2.0	4.2±2.0	5.0±2.2	5.2±2.2
Alpena	*	*	*	6.7±5.3	*	*	7.3±5.8	*	*	*
Antrim	*	*	*	8.7±6.9	*	11.1±8.2	10.9±8.0	10.0±8.0	*	*
Arenac	*	*	*	*	*	*	*	*	18.9±13.9	19.2±14.1
Baraga	*	*	*	*	*	*	-	-	*	*
Barry	4.6±2.8	5.9±3.2	6.5±3.4	7.8±3.7	7.4±3.7	8.9±4.1	7.9±4.0	6.8±3.7	4.9±3.2	4.3±3.0
Bay	5.6±2.4	6.6±2.6	8.0±2.8	7.5±2.8	6.6±2.6	7.9±2.9	8.3±3.0	7.7±3.0	4.9±2.4	5.1±2.5
Benzie	10.4±8.3	*	11.7±8.6	*	*	*	*	*	*	*
Berrien	7.6±2.2	7.3±2.1	9.4±2.4	8.8±2.3	8.9±2.4	7.8±2.2	8.3±2.3	8.1±2.3	8.3±2.4	7.8±2.3
Branch	10.9±4.7	8.7±4.2	5.3±3.3	3.3±2.6	3.5±2.8	4.9±3.4	6.3±3.9	7.8±4.4	7.0±4.1	6.9±4.1
Calhoun	9.3±2.5	9.6±2.6	11.2±2.8	10.8±2.7	11.5±2.9	10.2±2.8	10.7±2.9	8.7±2.6	7.2±2.3	6.0±2.1
Cass	9.1±4.6	8.6±4.5	8.3±4.3	5.9±3.6	7.8±4.2	7.8±4.4	7.3±4.3	6.6±4.3	7.4±4.6	8.5±4.8
Charlevoix	*	*	*	*	*	*	*	*	*	*
Cheboygan	*	*	*	*	*	*	*	-	-	-
Chippewa	6.8±4.7	7.4±4.8	8.6±5.3	5.4±4.3	*	*	5.3±4.2	7.5±5.2	7.5±5.2	5.6±4.5
Clare	12.1±6.8	7.8±5.4	5.6±4.5	6.6±4.9	5.8±4.7	*	*	*	*	*
Clinton	5.4±2.8	3.4±2.2	4.7±2.7	4.8±2.7	4.7±2.8	4.4±2.7	4.0±2.6	3.8±2.5	2.5±2.0	3.8±2.5
Crawford	*	*	16.8±12.3	19.1±13.1	17.5±12.9	*	*	*	*	*
Delta	9.9±5.5	4.9±3.9	4.9±3.9	*	6.1±4.5	*	5.3±4.2	6.4±4.7	5.4±4.3	7.1±4.9
Dickinson	*	7.3±5.9	7.6±6.0	7.6±6.0	*	8.3±6.6	*	*	*	*
Eaton	4.3±2.1	4.4±2.2	4.4±2.2	5.3±2.4	5.3±2.4	5.9±2.5	5.6±2.5	5.4±2.4	6.1±2.6	6.3±2.6
Emmet	5.5±4.4	*	*	*	*	6.3±5.0	*	*	*	*
Genesee	11.0±1.5	10.5±1.5	9.5±1.4	9.3±1.4	9.0±1.4	7.8±1.4	7.8±1.4	7.1±1.3	7.9±1.4	8.0±1.4
Gladwin	11.4±7.4	9.0±6.7	*	*	*	*	*	*	*	*
Gogebic	-	*	*	*	*	*	*	*	-	*
Grand Traverse	5.5±2.7	5.8±2.7	6.1±2.8	7.0±3.0	6.9±3.0	5.6±2.8	3.3±2.1	2.9±2.0	*	3.5±2.2
Gratiot	5.4±3.7	7.4±4.4	7.0±4.3	8.7±4.9	7.1±4.4	8.1±4.7	8.1±4.8	6.3±4.3	4.8±3.8	5.8±4.2
Hillsdale	*	4.0±2.9	6.8±3.8	9.2±4.5	5.9±3.6	4.2±3.1	*	3.7±3.0	4.3±3.2	*

Table 14-A
Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 2003-2014

County	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Houghton	5.9±4.4	5.1±4.1	5.0±4.0	7.3±4.8	6.6±4.5	6.5±4.5	*	5.1±4.0	5.3±4.3	6.2±4.6
Huron	*	*	*	*	*	*	6.3±5.1	6.5±5.2	*	*
Ingham	7.7±1.7	7.2±1.6	7.0±1.6	6.6±1.6	7.0±1.6	5.9±1.5	5.6±1.5	5.8±1.5	7.2±1.7	7.1±1.7
Ionia	4.4±2.6	3.5±2.3	4.8±2.7	3.9±2.4	3.3±2.3	3.0±2.2	4.0±2.6	4.0±2.6	4.1±2.6	4.1±2.7
Iosco	*	*	*	*	*	11.7±8.6	12.6±8.6	9.2±7.4	*	*
Iron	*	*	*	*	*	*	*	*	*	*
Isabella	8.7±3.9	8.1±3.7	9.9±4.1	6.2±3.2	5.4±3.1	4.2±2.7	6.8±3.5	7.1±3.7	6.2±3.5	4.0±2.8
Jackson	9.3±2.4	9.0±2.3	9.4±2.4	7.7±2.2	7.1±2.2	6.5±2.1	6.1±2.1	5.3±1.9	6.2±2.1	5.6±2.0
Kalamazoo	7.3±1.7	6.4±1.6	7.2±1.7	7.1±1.7	8.4±1.8	8.6±1.9	7.6±1.8	6.4±1.6	6.0±1.6	6.4±1.6
Kalkaska	8.6±6.9	*	*	-	*	*	*	11.3±9.0	11.6±9.2	17.0±11.0
Kent	8.2±1.1	8.0±1.0	7.6±1.0	7.8±1.0	6.9±1.0	6.8±1.0	6.4±1.0	6.2±0.9	5.6±0.9	5.3±0.9
Keweenaw	-	*	*	*	-	-	-	-	-	-
Lake	20.9±15.3	*	*	*	*	*	*	*	*	*
Lapeer	3.2±2.0	3.3±2.1	4.8±2.5	5.4±2.7	7.4±3.2	8.6±3.6	7.1±3.3	3.6±2.4	2.4±1.9	4.4±2.6
Leelanau	11.7±8.6	*	*	*	*	*	*	*	*	*
Lenawee	4.3±2.1	5.6±2.4	6.7±2.6	8.3±3.0	8.5±3.1	10.8±3.5	9.4±3.3	9.2±3.3	7.2±2.9	8.2±3.1
Livingston	5.2±1.8	3.8±1.5	5.3±1.9	5.5±1.9	6.7±2.2	6.3±2.1	6.7±2.2	5.9±2.1	5.2±2.0	5.4±2.0
Luce	*	*	*	*	*	*	-	-	-	*
Mackinac	*	*	*	*	*	*	*	-	-	-
Macomb	5.9±0.9	5.6±0.8	6.0±0.9	6.1±0.9	7.3±1.0	6.7±1.0	6.5±1.0	5.6±0.9	6.2±0.9	6.0±0.9
Manistee	15.5±8.7	9.8±7.2	*	*	*	*	*	*	*	*
Marquette	*	3.8±2.8	4.6±3.0	4.0±2.8	3.9±2.7	4.1±2.8	5.1±3.1	4.1±2.8	4.1±2.9	*
Mason	*	*	6.1±4.8	7.0±5.2	*	6.4±5.1	*	*	*	*
Mecosta	7.3±4.5	6.5±4.2	4.4±3.5	9.7±5.2	8.2±4.8	9.0±5.1	7.0±4.5	10.2±5.5	11.8±6.0	10.1±5.5
Menominee	*	*	*	*	*	*	*	*	*	*
Midland	7.1±3.1	8.7±3.5	7.0±3.1	5.3±2.8	4.2±2.5	3.9±2.4	4.2±2.5	4.6±2.6	6.6±3.1	7.5±3.3
Missaukee	*	*	*	-	*	*	*	*	*	*
Monroe	5.2±1.9	7.3±2.3	6.8±2.2	6.7±2.2	5.7±2.0	5.7±2.1	4.3±1.8	4.4±1.9	5.8±2.2	5.9±2.2
Montcalm	6.1±3.1	3.7±2.4	2.9±2.1	3.7±2.4	3.9±2.6	5.8±3.1	6.4±3.3	6.8±3.4	6.4±3.3	5.5±3.1
Montmorency	-	*	*	*	-	*	*	*	*	*

Table 14-A
Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 2003-2014

County	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Muskegon	8.4±2.1	6.7±1.9	6.3±1.8	6.7±1.9	7.1±2.0	7.9±2.1	8.0±2.1	8.7±2.3	8.2±2.2	8.3±2.2
Newaygo	5.9±3.5	6.8±3.7	9.7±4.4	8.4±4.1	8.2±4.1	5.3±3.5	7.8±4.2	7.3±4.1	7.3±4.1	6.6±3.9
Oakland	6.7±0.8	6.6±0.8	6.6±0.8	6.4±0.8	6.2±0.8	6.2±0.8	5.8±0.7	6.2±0.8	6.3±0.8	6.6±0.8
Oceana	10.5±5.9	10.3±5.8	8.7±5.4	6.0±4.5	6.3±4.6	8.3±5.4	5.9±4.7	9.0±5.9	6.5±5.2	13.4±7.5
Ogemaw	*	*	*	*	*	*	*	*	*	*
Ontonagon	-	*	*	*	*	-	-	-	*	*
Osceola	8.6±6.0	8.8±6.1	9.4±6.5	*	*	*	*	*	*	*
Oscoda	*	-	-	*	*	*	*	*	*	*
Otsego	*	*	8.2±6.1	9.3±6.4	8.6±6.3	*	9.0±6.6	11.9±7.7	13.9±8.6	12.6±8.2
Ottawa	5.3±1.4	5.3±1.4	5.2±1.4	5.9±1.5	5.4±1.4	5.7±1.5	5.6±1.5	5.9±1.5	6.5±1.6	5.7±1.5
Presque Isle	*	*	*	*	*	*	*	21.7±17.1	*	*
Roscommon	9.9±7.9	*	*	*	10.9±8.7	*	*	*	*	*
Saginaw	9.2±2.1	8.7±2.0	9.5±2.2	9.4±2.2	10.5±2.3	8.8±2.2	7.9±2.1	6.1±1.8	7.1±2.0	7.7±2.1
St. Clair	8.0±2.2	7.7±2.2	6.6±2.1	5.8±2.0	6.4±2.1	5.6±2.0	6.3±2.2	6.2±2.2	6.3±2.2	6.0±2.2
St. Joseph	7.0±3.0	8.1±3.3	8.6±3.4	10.3±3.7	11.2±4.0	10.6±4.0	8.3±3.5	7.4±3.4	7.3±3.4	7.9±3.5
Sanilac	4.3±3.2	5.8±3.8	7.7±4.3	7.5±4.4	6.8±4.2	*	*	*	4.6±3.6	6.8±4.4
Schoolcraft	*	*	*	*	*	-	-	-	-	-
Shiawassee	9.2±3.7	7.7±3.3	8.8±3.7	5.4±2.9	5.7±3.1	3.2±2.4	3.3±2.4	3.8±2.6	3.2±2.4	4.2±2.7
Tuscola	7.4±3.7	7.7±3.9	6.2±3.5	3.8±2.8	3.9±2.9	6.0±3.7	6.8±4.0	6.8±4.0	4.9±3.4	4.7±3.3
Van Buren	9.5±3.4	7.7±3.1	6.7±2.8	5.5±2.6	6.9±2.9	6.5±2.9	4.5±2.4	5.6±2.8	6.5±3.0	6.2±3.0
Washtenaw	6.3±1.4	6.0±1.3	5.7±1.3	5.2±1.3	5.3±1.3	5.1±1.3	4.9±1.3	4.7±1.3	4.6±1.3	5.9±1.4
Wayne	11.3±0.7	10.6±0.7	10.5±0.7	10.4±0.7	10.4±0.7	10.2±0.7	9.8±0.7	9.9±0.7	9.7±0.7	9.6±0.7
Wexford	6.5±4.5	6.3±4.4	9.2±5.2	6.8±4.4	7.7±4.8	6.3±4.3	6.4±4.4	9.8±5.5	9.8±5.5	10.8±5.8

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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 14-B
White Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 2003-2014

County	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	5.8±0.3	5.4±0.3	5.6±0.3	5.6±0.3	5.6±0.3	5.4±0.3	5.2±0.3	5.3±0.3	5.3±0.3	5.5±0.3
Alcona	*	*	*	*	*	*	*	*	*	*
Alger	*	-	-	*	*	*	*	-	-	-
Allegan	7.3±2.5	5.6±2.2	7.6±2.5	5.9±2.3	5.6±2.2	3.4±1.8	4.0±2.0	4.1±2.0	5.0±2.2	5.1±2.2
Alpena	*	*	*	6.9±5.5	*	*	*	*	*	*
Antrim	*	*	*	8.9±7.1	*	11.7±8.6	11.7±8.6	10.7±8.5	*	*
Arenac	*	*	*	*	*	*	*	*	19.3±14.2	19.6±14.3
Baraga	*	*	*	-	-	-	-	-	-	-
Barry	4.2±2.7	5.5±3.1	6.1±3.3	8.0±3.8	7.5±3.8	9.1±4.2	8.0±4.0	6.9±3.7	5.0±3.3	4.4±3.0
Bay	5.6±2.4	6.4±2.6	7.5±2.8	7.1±2.8	6.1±2.6	7.4±2.9	7.9±3.0	7.6±3.0	5.0±2.5	4.8±2.5
Benzie	*	*	10.3±8.2	*	*	*	*	*	*	*
Berrien	6.0±2.2	5.3±2.1	5.9±2.3	5.9±2.3	4.8±2.1	4.0±1.9	3.6±1.8	4.6±2.1	4.9±2.2	4.9±2.2
Branch	9.9±4.6	8.2±4.2	4.9±3.2	3.4±2.7	3.6±2.9	5.0±3.5	6.5±4.0	6.7±4.1	5.2±3.6	5.2±3.6
Calhoun	7.9±2.5	7.3±2.5	8.5±2.6	7.9±2.6	9.3±2.9	7.4±2.6	7.9±2.8	6.4±2.5	5.9±2.4	5.1±2.2
Cass	7.3±4.3	6.6±4.1	6.1±4.0	5.5±3.8	5.6±3.9	5.9±4.1	5.3±3.9	6.8±4.7	7.6±5.0	9.6±5.4
Charlevoix	*	*	*	*	*	*	*	*	*	*
Cheboygan	*	*	*	*	*	*	*	*	-	-
Chippewa	*	6.8±5.4	8.4±6.2	*	*	*	*	*	*	*
Clare	11.2±6.6	6.9±5.1	5.7±4.6	6.8±5.0	6.0±4.8	*	*	*	*	*
Clinton	4.4±2.6	2.8±2.1	3.8±2.4	4.7±2.8	4.5±2.8	4.6±2.8	4.2±2.7	4.1±2.7	2.7±2.2	4.1±2.7
Crawford	*	*	14.7±11.7	17.0±12.5	15.7±12.5	*	*	*	*	-
Delta	9.4±5.6	5.1±4.1	*	*	*	*	*	5.8±4.7	*	6.5±4.8
Dickinson	*	7.5±6.0	7.9±6.3	8.0±6.4	*	*	*	*	*	*
Eaton	3.7±2.1	4.4±2.3	4.8±2.4	5.1±2.5	3.8±2.1	4.2±2.3	3.9±2.2	4.8±2.5	4.8±2.5	5.2±2.6
Emmet	5.9±4.7	*	*	*	*	6.8±5.4	*	*	*	*
Genesee	7.6±1.5	7.3±1.5	6.4±1.4	6.0±1.4	5.4±1.3	5.1±1.3	5.1±1.4	4.8±1.3	5.1±1.4	5.2±1.4
Gladwin	11.5±7.5	9.1±6.7	*	*	*	*	*	*	*	*
Gogebic	-	*	*	*	*	*	*	*	-	-
Grand Traverse	5.0±2.6	5.3±2.7	6.4±2.9	7.4±3.2	7.3±3.2	6.0±3.0	3.5±2.3	3.1±2.2	*	3.7±2.3
Gratiot	4.3±3.4	7.1±4.4	6.7±4.3	7.7±4.8	6.0±4.2	7.0±4.5	7.8±4.8	5.8±4.3	*	5.2±4.2
Hillsdale	*	4.0±3.0	7.0±4.0	9.6±4.7	6.2±3.8	4.3±3.2	*	3.8±3.1	4.4±3.2	*

Table 14-B
White Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 2003-2014

County	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Houghton	6.3±4.6	5.4±4.3	5.3±4.2	7.0±4.8	6.1±4.5	6.0±4.4	*	5.4±4.3	5.7±4.6	6.7±4.9
Huron	*	*	*	*	*	*	6.5±5.2	6.7±5.3	*	*
Ingham	5.4±1.6	4.4±1.4	4.6±1.5	4.1±1.4	4.7±1.5	3.6±1.4	4.6±1.6	5.3±1.7	7.5±2.1	7.1±2.0
Ionia	4.5±2.7	3.6±2.3	4.9±2.8	4.1±2.5	3.4±2.4	3.1±2.3	3.6±2.5	3.7±2.6	3.7±2.6	4.2±2.8
Iosco	*	*	*	*	*	12.2±9.0	13.1±9.0	9.6±7.6	*	*
Iron	*	*	*	*	*	*	*	*	*	*
Isabella	8.4±4.1	8.2±4.0	8.3±4.0	5.0±3.1	3.1±2.5	*	5.6±3.4	6.5±3.8	5.9±3.7	3.5±2.8
Jackson	6.5±2.1	6.2±2.1	6.8±2.2	6.4±2.2	6.2±2.2	5.7±2.1	5.5±2.1	4.1±1.8	4.6±2.0	3.9±1.8
Kalamazoo	5.2±1.6	4.6±1.5	5.0±1.6	4.8±1.6	5.5±1.7	5.7±1.7	4.8±1.6	3.9±1.4	3.9±1.4	4.7±1.6
Kalkaska	*	*	*	-	*	*	*	11.7±9.3	11.9±9.5	17.4±11.3
Kent	6.2±1.0	5.4±0.9	5.2±0.9	5.6±1.0	5.0±0.9	5.0±0.9	4.4±0.9	4.4±0.9	4.1±0.9	4.5±0.9
Keweenaw	-	*	*	*	-	-	-	-	-	-
Lake	23.6±17.3	*	*	*	*	*	*	*	*	*
Lapeer	2.9±1.9	3.4±2.1	4.9±2.6	5.5±2.8	7.3±3.3	7.8±3.5	6.3±3.2	3.0±2.2	2.6±2.1	4.7±2.8
Leelanau	12.9±9.5	*	*	*	*	*	*	*	*	*
Lenawee	4.2±2.1	5.6±2.4	6.8±2.8	9.0±3.3	8.4±3.3	10.6±3.7	8.7±3.4	9.6±3.6	7.6±3.2	8.4±3.3
Livingston	5.0±1.8	3.7±1.6	5.1±1.8	5.3±1.9	6.6±2.2	6.1±2.2	6.6±2.2	5.8±2.1	5.0±2.0	5.1±2.0
Luce	*	*	*	*	*	*	-	-	-	*
Mackinac	*	*	*	*	*	*	*	-	-	-
Macomb	5.1±0.9	4.8±0.8	5.1±0.9	5.2±0.9	6.2±1.0	5.9±1.0	5.6±1.0	4.8±0.9	5.5±1.0	5.3±1.0
Manistee	14.9±8.7	10.3±7.6	*	*	*	*	*	*	*	*
Marquette	*	4.0±2.9	4.9±3.2	4.2±2.9	3.6±2.7	3.7±2.8	4.8±3.1	4.2±2.9	4.3±3.0	*
Mason	*	*	*	6.2±4.9	*	6.6±5.3	*	*	*	*
Mecosta	6.9±4.5	6.1±4.2	*	9.4±5.3	7.9±4.9	8.8±5.2	6.6±4.5	10.0±5.6	11.7±6.1	10.7±5.8
Menominee	*	*	*	*	*	*	*	*	*	*
Midland	6.7±3.1	8.3±3.5	7.3±3.3	5.6±2.9	4.0±2.5	3.7±2.4	4.0±2.5	4.9±2.8	5.8±3.0	6.7±3.3
Missaukee	*	*	*	-	*	*	*	*	*	*
Monroe	4.8±1.9	6.9±2.3	6.8±2.4	6.4±2.3	4.8±2.0	4.7±1.9	3.5±1.7	3.6±1.8	5.1±2.1	5.3±2.2
Montcalm	6.2±3.1	3.7±2.4	3.0±2.2	3.8±2.5	4.0±2.6	5.9±3.2	6.1±3.3	6.5±3.4	6.0±3.3	5.6±3.2
Montmorency	-	*	*	*	-	*	*	*	*	*

**Table 14-B
White Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 2003-2014**

County	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Muskegon	5.9±2.0	4.5±1.8	5.0±1.9	5.7±2.0	6.4±2.2	6.5±2.2	6.3±2.2	7.1±2.4	6.9±2.3	6.0±2.2
Newaygo	5.5±3.4	5.9±3.5	8.9±4.2	8.0±4.0	8.4±4.2	5.4±3.5	7.4±4.2	6.9±4.1	7.0±4.1	6.9±4.1
Oakland	5.5±0.8	4.9±0.7	4.9±0.8	4.9±0.8	4.8±0.8	5.3±0.8	5.1±0.8	5.7±0.9	5.6±0.9	5.5±0.9
Oceana	9.7±5.7	9.6±5.6	7.4±5.1	*	*	5.9±4.7	*	9.6±6.3	7.1±5.6	14.7±8.3
Ogemaw	*	*	*	*	*	*	*	*	*	*
Ontonagon	-	*	*	*	*	-	-	-	*	*
Osceola	8.8±6.1	8.9±6.2	9.5±6.6	*	*	*	*	*	*	*
Oscoda	*	-	-	*	*	*	*	*	*	*
Otsego	*	*	8.3±6.1	9.4±6.5	8.6±6.4	*	9.2±6.8	12.2±7.9	14.4±8.9	11.5±8.0
Ottawa	5.1±1.4	5.0±1.4	5.0±1.4	5.3±1.4	4.6±1.4	4.9±1.4	5.3±1.5	5.6±1.5	6.2±1.6	5.3±1.5
Presque Isle	*	*	*	*	*	*	*	22.1±17.5	*	*
Roscommon	10.1±8.0	*	*	*	11.2±8.9	*	*	*	*	*
Saginaw	5.4±1.9	5.0±1.8	5.7±2.0	6.6±2.2	6.4±2.2	4.7±1.9	2.9±1.5	2.9±1.5	4.2±1.8	6.2±2.2
St. Clair	7.5±2.2	7.0±2.1	5.8±2.0	5.0±1.9	6.2±2.1	5.4±2.1	6.3±2.3	6.2±2.3	6.3±2.3	5.9±2.3
St. Joseph	6.2±2.9	7.0±3.1	7.6±3.2	9.3±3.6	10.2±3.9	9.9±3.9	7.9±3.6	6.9±3.4	6.4±3.2	6.6±3.3
Sanilac	4.4±3.2	5.8±3.8	7.2±4.2	7.0±4.3	6.3±4.1	*	*	*	4.6±3.7	6.9±4.5
Schoolcraft	*	*	*	*	*	-	-	-	-	-
Shiawassee	9.4±3.7	7.8±3.4	9.0±3.8	5.5±3.0	5.9±3.2	3.3±2.4	3.4±2.5	3.9±2.7	3.3±2.5	4.3±2.8
Tuscola	7.5±3.8	7.8±3.9	6.3±3.6	3.9±2.9	4.0±3.0	6.1±3.8	6.9±4.1	7.0±4.1	5.0±3.5	4.9±3.4
Van Buren	6.5±3.0	4.9±2.6	3.6±2.2	4.8±2.6	6.1±3.0	6.0±3.0	4.1±2.5	5.4±2.9	6.2±3.1	5.8±3.0
Washtenaw	4.3±1.3	4.5±1.4	3.5±1.2	3.5±1.3	4.3±1.4	4.4±1.5	4.5±1.5	3.9±1.4	4.2±1.5	5.4±1.7
Wayne	5.9±0.7	5.0±0.7	5.4±0.7	5.6±0.7	5.6±0.8	5.4±0.8	5.5±0.8	5.9±0.9	6.3±0.9	6.3±0.9
Wexford	6.6±4.6	6.5±4.5	9.5±5.3	7.0±4.6	8.0±5.0	6.5±4.5	6.6±4.5	10.1±5.7	9.3±5.4	10.3±5.8

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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

**Table 14-C
Black Three-Year Moving Average Infant Death Rates by County
Michigan Residents, 2003-2014**

County	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	17.5±1.0	16.6±1.0	16.4±1.0	15.3±0.9	15.5±0.9	14.8±0.9	14.5±0.9	13.8±0.9	13.4±0.9	13.3±0.9
Berrien	12.0±5.5	11.9±5.5	16.9±6.5	14.9±6.0	16.7±6.4	16.0±6.2	19.5±6.9	18.6±6.9	17.3±6.7	16.5±6.7
Calhoun	14.2±8.0	20.8±9.8	25.3±10.7	24.2±10.5	20.5±9.6	22.1±10.4	25.4±11.3	20.2±10.1	13.8±8.1	9.9±6.8
Cass	*	*	*	*	*	*	*	*	*	-
Genesee	20.3±4.0	18.6±3.8	17.1±3.6	17.1±3.6	17.9±3.7	14.6±3.4	14.2±3.4	12.4±3.3	14.2±3.5	14.6±3.6
Ingham	17.2±6.2	19.8±6.8	19.4±6.8	17.8±6.3	16.5±6.0	16.7±5.9	13.1±5.3	11.4±5.0	10.1±4.7	10.1±4.7
Jackson	31.9±14.5	28.9±13.5	28.7±13.4	16.8±10.3	15.6±10.1	13.2±9.1	11.6±8.6	13.0±9.0	18.5±10.8	16.2±10.0
Kalamazoo	17.9±6.4	16.0±6.1	16.8±6.2	16.8±6.2	19.2±6.5	19.5±6.5	18.3±6.4	17.6±6.3	15.5±5.9	14.2±5.7
Kent	17.7±4.4	18.0±4.4	16.8±4.2	14.4±3.8	13.4±3.7	13.9±3.8	16.6±4.2	14.6±3.9	12.9±3.6	9.9±3.2
Macomb	14.7±5.1	12.7±4.5	13.5±4.3	13.4±4.0	15.1±4.0	13.8±3.8	13.1±3.6	11.4±3.2	10.8±3.0	9.6±2.8
Muskegon	17.6±7.0	13.4±6.0	9.8±5.1	9.0±4.9	8.2±4.6	13.2±5.9	14.9±6.3	16.4±6.8	12.8±6.0	14.9±6.7
Oakland	15.5±3.2	16.7±3.3	17.4±3.4	15.4±3.1	14.7±3.0	11.9±2.7	10.8±2.5	10.6±2.4	11.1±2.5	13.7±2.8
Saginaw	18.9±5.8	18.4±5.7	19.0±5.8	15.3±5.2	19.2±5.8	17.4±5.6	19.2±6.1	13.4±5.1	14.3±5.2	12.2±5.0
St. Clair	*	*	*	*	*	*	*	*	*	*
Van Buren	37.0±29.1	*	*	*	*	*	*	*	*	*
Washtenaw	16.1±5.5	12.1±4.6	13.4±4.9	13.2±4.9	11.6±4.6	10.5±4.4	8.7±4.0	8.9±4.1	8.3±4.1	10.9±4.7
Wayne	17.7±1.3	16.7±1.3	15.9±1.3	15.3±1.3	15.3±1.3	15.1±1.3	14.5±1.3	14.5±1.3	14.0±1.3	13.8±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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 15-A
Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 2003-2014

Health Department	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	8.0±0.3	7.6±0.3	7.8±0.3	7.6±0.3	7.6±0.3	7.3±0.3	7.1±0.3	6.9±0.3	6.8±0.3	6.9±0.3
Allegan County	7.8±2.6	6.3±2.3	8.4±2.6	6.9±2.4	6.7±2.4	4.2±1.9	4.5±2.0	4.2±2.0	5.0±2.2	5.2±2.2
Barry-Eaton District	4.4±1.7	5.0±1.8	5.2±1.9	6.2±2.0	6.0±2.0	7.0±2.2	6.4±2.1	5.9±2.0	5.7±2.0	5.6±2.0
Bay County	5.6±2.4	6.6±2.6	8.0±2.8	7.5±2.8	6.6±2.6	7.9±2.9	8.3±3.0	7.7±3.0	4.9±2.4	5.1±2.5
Benzie-Leelanau District	11.1±6.0	7.0±4.8	7.7±5.0	*	*	*	*	*	*	6.2±5.0
Berrien County	7.6±2.2	7.3±2.1	9.4±2.4	8.8±2.3	8.9±2.4	7.8±2.2	8.3±2.3	8.1±2.3	8.3±2.4	7.8±2.3
Branch-Hillsdale-St. Joseph	6.8±2.0	7.1±2.0	7.2±2.1	8.0±2.2	7.5±2.2	7.2±2.2	6.3±2.0	6.4±2.1	6.3±2.1	6.2±2.0
Calhoun County	9.3±2.5	9.6±2.6	11.2±2.8	10.8±2.7	11.5±2.9	10.2±2.8	10.7±2.9	8.7±2.6	7.2±2.3	6.0±2.1
Central Michigan District	9.5±2.5	7.9±2.2	7.9±2.2	5.6±1.9	5.7±1.9	4.6±1.8	6.3±2.1	5.6±2.0	5.6±2.0	4.8±1.9
Chippewa County	6.8±4.7	7.4±4.8	8.6±5.3	5.4±4.3	*	*	5.3±4.2	7.5±5.2	7.5±5.2	5.6±4.5
City Of Detroit	15.9±1.2	15.0±1.2	14.7±1.2	14.3±1.2	14.8±1.3	14.4±1.3	13.6±1.3	13.6±1.3	13.6±1.3	13.4±1.3
Dickinson-Iron District	*	6.5±4.8	6.6±4.9	6.5±4.8	5.6±4.5	8.7±5.7	8.0±5.5	*	*	5.8±4.6
District #10	8.3±1.8	7.1±1.7	7.8±1.8	6.8±1.7	6.7±1.7	6.7±1.7	6.6±1.7	7.6±1.9	7.0±1.8	8.2±1.9
District #2	6.2±3.6	4.5±3.1	4.7±3.3	5.9±3.6	8.4±4.4	9.8±4.8	9.1±4.6	8.9±4.5	6.5±3.8	7.0±3.9
District #4	2.7±2.1	4.4±2.8	5.3±3.0	6.3±3.3	6.1±3.3	6.1±3.4	6.8±3.7	6.5±3.7	4.9±3.2	4.8±3.1
Genesee County	11.0±1.5	10.5±1.5	9.5±1.4	9.3±1.4	9.0±1.4	7.8±1.4	7.8±1.4	7.1±1.3	7.9±1.4	8.0±1.4
Grand Traverse County	5.5±2.7	5.8±2.7	6.1±2.8	7.0±3.0	6.9±3.0	5.6±2.8	3.3±2.1	2.9±2.0	*	3.5±2.2
Huron County	*	*	*	*	*	*	6.3±5.1	6.5±5.2	*	*
Ingham County	7.7±1.7	7.2±1.6	7.0±1.6	6.6±1.6	7.0±1.6	5.9±1.5	5.6±1.5	5.8±1.5	7.2±1.7	7.1±1.7
Ionia County	4.4±2.6	3.5±2.3	4.8±2.7	3.9±2.4	3.3±2.3	3.0±2.2	4.0±2.6	4.0±2.6	4.1±2.6	4.1±2.7
Jackson County	9.3±2.4	9.0±2.3	9.4±2.4	7.7±2.2	7.1±2.2	6.5±2.1	6.1±2.1	5.3±1.9	6.2±2.1	5.6±2.0
Kalamazoo County	7.3±1.7	6.4±1.6	7.2±1.7	7.1±1.7	8.4±1.8	8.6±1.9	7.6±1.8	6.4±1.6	6.0±1.6	6.4±1.6
Kent County	8.2±1.1	8.0±1.0	7.6±1.0	7.8±1.0	6.9±1.0	6.8±1.0	6.4±1.0	6.2±0.9	5.6±0.9	5.3±0.9
Lapeer County	3.2±2.0	3.3±2.1	4.8±2.5	5.4±2.7	7.4±3.2	8.6±3.6	7.1±3.3	3.6±2.4	2.4±1.9	4.4±2.6
Lenawee County	4.3±2.1	5.6±2.4	6.7±2.6	8.3±3.0	8.5±3.1	10.8±3.5	9.4±3.3	9.2±3.3	7.2±2.9	8.2±3.1
Livingston County	5.2±1.8	3.8±1.5	5.3±1.9	5.5±1.9	6.7±2.2	6.3±2.1	6.7±2.2	5.9±2.1	5.2±2.0	5.4±2.0
Luce-Mackinac-Alger-Schoolcraft	9.5±6.2	9.6±6.2	8.5±5.9	13.2±7.4	11.2±6.9	10.4±6.8	*	-	-	*
Macomb County	5.9±0.9	5.6±0.8	6.0±0.9	6.1±0.9	7.3±1.0	6.7±1.0	6.5±1.0	5.6±0.9	6.2±0.9	6.0±0.9
Marquette County	*	3.8±2.8	4.6±3.0	4.0±2.8	3.9±2.7	4.1±2.8	5.1±3.1	4.1±2.8	4.1±2.9	*
Midland County	7.1±3.1	8.7±3.5	7.0±3.1	5.3±2.8	4.2±2.5	3.9±2.4	4.2±2.5	4.6±2.6	6.6±3.1	7.5±3.3

Table 15-A
Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 2003-2014

Health Department	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Mid-Michigan District	5.7±1.8	4.4±1.6	4.5±1.6	5.3±1.8	5.0±1.8	5.8±1.9	5.9±2.0	5.5±1.9	4.4±1.7	4.8±1.8
Monroe County	5.2±1.9	7.3±2.3	6.8±2.2	6.7±2.2	5.7±2.0	5.7±2.1	4.3±1.8	4.4±1.9	5.8±2.2	5.9±2.2
Muskegon County	8.4±2.1	6.7±1.9	6.3±1.8	6.7±1.9	7.1±2.0	7.9±2.1	8.0±2.1	8.7±2.3	8.2±2.2	8.3±2.2
Northwest Michigan Community Health	4.0±2.1	4.6±2.2	5.4±2.4	6.1±2.6	6.5±2.8	6.4±2.8	6.8±2.9	6.9±2.9	6.7±2.9	6.2±2.8
Oakland County	6.7±0.8	6.6±0.8	6.6±0.8	6.4±0.8	6.2±0.8	6.2±0.8	5.8±0.7	6.2±0.8	6.3±0.8	6.6±0.8
Ottawa County	5.3±1.4	5.3±1.4	5.2±1.4	5.9±1.5	5.4±1.4	5.7±1.5	5.6±1.5	5.9±1.5	6.5±1.6	5.7±1.5
Delta & Menominee	7.7±3.9	4.7±3.1	4.6±3.0	4.3±3.0	6.0±3.5	4.6±3.2	4.6±3.2	5.4±3.5	4.7±3.2	5.7±3.5
Saginaw County	9.2±2.1	8.7±2.0	9.5±2.2	9.4±2.2	10.5±2.3	8.8±2.2	7.9±2.1	6.1±1.8	7.1±2.0	7.7±2.1
Sanilac County	4.3±3.2	5.8±3.8	7.7±4.3	7.5±4.4	6.8±4.2	*	*	*	4.6±3.6	6.8±4.4
Shiawassee County	9.2±3.7	7.7±3.3	8.8±3.7	5.4±2.9	5.7±3.1	3.2±2.4	3.3±2.4	3.8±2.6	3.2±2.4	4.2±2.7
St Clair County	8.0±2.2	7.7±2.2	6.6±2.1	5.8±2.0	6.4±2.1	5.6±2.0	6.3±2.2	6.2±2.2	6.3±2.2	6.0±2.2
Tuscola County	7.4±3.7	7.7±3.9	6.2±3.5	3.8±2.8	3.9±2.9	6.0±3.7	6.8±4.0	6.8±4.0	4.9±3.4	4.7±3.3
Van Buren-Cass County	9.4±2.8	8.0±2.5	7.2±2.4	5.6±2.1	7.2±2.4	6.9±2.4	5.5±2.2	6.0±2.3	6.8±2.5	7.0±2.5
Washtenaw County	6.3±1.4	6.0±1.3	5.7±1.3	5.2±1.3	5.3±1.3	5.1±1.3	4.9±1.3	4.7±1.3	4.6±1.3	5.9±1.4
Wayne County	6.9±0.8	6.5±0.8	6.7±0.8	6.9±0.8	6.7±0.8	6.6±0.8	6.7±0.8	6.9±0.8	6.8±0.8	6.8±0.8
Western Upper Peninsula District	4.3±2.8	5.7±3.2	6.6±3.4	7.5±3.7	5.2±3.1	5.3±3.1	3.5±2.6	4.1±2.8	4.3±2.9	6.0±3.5

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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 15-B
White Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 2003-2014

Health Department	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	5.8±0.3	5.4±0.3	5.6±0.3	5.6±0.3	5.6±0.3	5.4±0.3	5.2±0.3	5.3±0.3	5.3±0.3	5.5±0.3
Allegan County	7.3±2.5	5.6±2.2	7.6±2.5	5.9±2.3	5.6±2.2	3.4±1.8	4.0±2.0	4.1±2.0	5.0±2.2	5.1±2.2
Barry-Eaton District	3.9±1.7	4.8±1.9	5.3±2.0	6.3±2.1	5.2±2.0	6.1±2.1	5.5±2.1	5.6±2.1	4.9±2.0	4.9±2.0
Bay County	5.6±2.4	6.4±2.6	7.5±2.8	7.1±2.8	6.1±2.6	7.4±2.9	7.9±3.0	7.6±3.0	5.0±2.5	4.8±2.5
Benzie-Leelanau District	10.9±6.1	6.5±4.8	7.3±5.1	*	*	*	*	*	*	*
Berrien County	6.0±2.2	5.3±2.1	5.9±2.3	5.9±2.3	4.8±2.1	4.0±1.9	3.6±1.8	4.6±2.1	4.9±2.2	4.9±2.2
Branch-Hillsdale-St. Joseph	6.2±1.9	6.5±2.0	6.7±2.0	7.7±2.2	7.2±2.2	6.9±2.2	6.2±2.1	6.0±2.1	5.5±2.0	5.2±1.9
Calhoun County	7.9±2.5	7.3±2.5	8.5±2.6	7.9±2.6	9.3±2.9	7.4±2.6	7.9±2.8	6.4±2.5	5.9±2.4	5.1±2.2
Central Michigan District	9.3±2.5	7.9±2.3	7.3±2.2	5.2±1.9	4.8±1.8	4.0±1.7	5.8±2.1	5.3±2.0	5.6±2.1	4.7±1.9
Chippewa County	*	6.8±5.4	8.4±6.2	*	*	*	*	*	*	*
City Of Detroit	7.5±2.0	4.9±1.6	5.5±1.8	5.2±1.9	5.5±2.1	5.8±2.3	6.5±2.8	10.3±3.9	10.5±4.1	10.8±4.1
Dickinson-Iron District	*	6.6±4.9	6.9±5.1	6.9±5.1	*	8.2±5.6	7.2±5.3	*	*	5.9±4.7
District #10	7.8±1.8	6.8±1.7	7.4±1.8	6.4±1.6	6.3±1.7	6.4±1.7	6.3±1.7	7.7±1.9	6.8±1.8	8.2±2.0
District #2	6.4±3.8	4.7±3.2	4.2±3.1	5.5±3.6	8.0±4.3	10.1±4.9	9.3±4.7	9.2±4.6	6.7±3.9	7.2±4.0
District #4	*	4.1±2.7	5.5±3.1	6.6±3.4	6.4±3.4	6.3±3.6	6.5±3.7	6.2±3.7	4.5±3.1	4.4±3.1
Genesee County	7.6±1.5	7.3±1.5	6.4±1.4	6.0±1.4	5.4±1.3	5.1±1.3	5.1±1.4	4.8±1.3	5.1±1.4	5.2±1.4
Grand Traverse County	5.0±2.6	5.3±2.7	6.4±2.9	7.4±3.2	7.3±3.2	6.0±3.0	3.5±2.3	3.1±2.2	*	3.7±2.3
Huron County	*	*	*	*	*	*	6.5±5.2	6.7±5.3	*	*
Ingham County	5.4±1.6	4.4±1.4	4.6±1.5	4.1±1.4	4.7±1.5	3.6±1.4	4.6±1.6	5.3±1.7	7.5±2.1	7.1±2.0
Ionia County	4.5±2.7	3.6±2.3	4.9±2.8	4.1±2.5	3.4±2.4	3.1±2.3	3.6±2.5	3.7±2.6	3.7±2.6	4.2±2.8
Jackson County	6.5±2.1	6.2±2.1	6.8±2.2	6.4±2.2	6.2±2.2	5.7±2.1	5.5±2.1	4.1±1.8	4.6±2.0	3.9±1.8
Kalamazoo County	5.2±1.6	4.6±1.5	5.0±1.6	4.8±1.6	5.5±1.7	5.7±1.7	4.8±1.6	3.9±1.4	3.9±1.4	4.7±1.6
Kent County	6.2±1.0	5.4±0.9	5.2±0.9	5.6±1.0	5.0±0.9	5.0±0.9	4.4±0.9	4.4±0.9	4.1±0.9	4.5±0.9
Lapeer County	2.9±1.9	3.4±2.1	4.9±2.6	5.5±2.8	7.3±3.3	7.8±3.5	6.3±3.2	3.0±2.2	2.6±2.1	4.7±2.8
Lenawee County	4.2±2.1	5.6±2.4	6.8±2.8	9.0±3.3	8.4±3.3	10.6±3.7	8.7±3.4	9.6±3.6	7.6±3.2	8.4±3.3
Livingston County	5.0±1.8	3.7±1.6	5.1±1.8	5.3±1.9	6.6±2.2	6.1±2.2	6.6±2.2	5.8±2.1	5.0±2.0	5.1±2.0
Luce-Mackinac-Alger-Schoolcraft	8.6±6.3	8.8±6.5	8.8±6.5	11.7±7.6	10.5±7.2	9.5±7.0	*	-	-	*
Macomb County	5.1±0.9	4.8±0.8	5.1±0.9	5.2±0.9	6.2±1.0	5.9±1.0	5.6±1.0	4.8±0.9	5.5±1.0	5.3±1.0
Marquette County	*	4.0±2.9	4.9±3.2	4.2±2.9	3.6±2.7	3.7±2.8	4.8±3.1	4.2±2.9	4.3±3.0	*
Midland County	6.7±3.1	8.3±3.5	7.3±3.3	5.6±2.9	4.0±2.5	3.7±2.4	4.0±2.5	4.9±2.8	5.8±3.0	6.7±3.3

Table 15-B
White Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 2003-2014

Health Department	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Mid-Michigan District	5.1±1.8	4.1±1.6	4.1±1.6	5.0±1.8	4.7±1.8	5.6±1.9	5.8±2.0	5.4±1.9	4.3±1.7	4.9±1.8
Monroe County	4.8±1.9	6.9±2.3	6.8±2.4	6.4±2.3	4.8±2.0	4.7±1.9	3.5±1.7	3.6±1.8	5.1±2.1	5.3±2.2
Muskegon County	5.9±2.0	4.5±1.8	5.0±1.9	5.7±2.0	6.4±2.2	6.5±2.2	6.3±2.2	7.1±2.4	6.9±2.3	6.0±2.2
Northwest Michigan Community Health	4.1±2.2	4.8±2.3	5.6±2.5	6.4±2.7	6.5±2.8	6.4±2.9	6.8±3.0	6.9±3.0	6.8±3.0	5.8±2.8
Oakland County	5.5±0.8	4.9±0.7	4.9±0.8	4.9±0.8	4.8±0.8	5.3±0.8	5.1±0.8	5.7±0.9	5.6±0.9	5.5±0.9
Ottawa County	5.1±1.4	5.0±1.4	5.0±1.4	5.3±1.4	4.6±1.4	4.9±1.4	5.3±1.5	5.6±1.5	6.2±1.6	5.3±1.5
Delta & Menominee	7.6±4.0	4.9±3.2	4.8±3.3	3.8±3.0	4.3±3.4	*	*	4.5±3.3	3.8±3.0	4.9±3.4
Saginaw County	5.4±1.9	5.0±1.8	5.7±2.0	6.6±2.2	6.4±2.2	4.7±1.9	2.9±1.5	2.9±1.5	4.2±1.8	6.2±2.2
Sanilac County	4.4±3.2	5.8±3.8	7.2±4.2	7.0±4.3	6.3±4.1	*	*	*	4.6±3.7	6.9±4.5
Shiawassee County	9.4±3.7	7.8±3.4	9.0±3.8	5.5±3.0	5.9±3.2	3.3±2.4	3.4±2.5	3.9±2.7	3.3±2.5	4.3±2.8
St Clair County	7.5±2.2	7.0±2.1	5.8±2.0	5.0±1.9	6.2±2.1	5.4±2.1	6.3±2.3	6.2±2.3	6.3±2.3	5.9±2.3
Tuscola County	7.5±3.8	7.8±3.9	6.3±3.6	3.9±2.9	4.0±3.0	6.1±3.8	6.9±4.1	7.0±4.1	5.0±3.5	4.9±3.4
Van Buren-Cass County	6.7±2.4	5.5±2.2	4.4±2.0	5.0±2.2	5.9±2.4	6.0±2.4	4.5±2.1	5.8±2.5	6.7±2.7	7.1±2.7
Washtenaw County	4.3±1.3	4.5±1.4	3.5±1.2	3.5±1.3	4.3±1.4	4.4±1.5	4.5±1.5	3.9±1.4	4.2±1.5	5.4±1.7
Wayne County	5.6±0.8	5.0±0.7	5.3±0.8	5.6±0.8	5.6±0.8	5.4±0.8	5.4±0.8	5.5±0.9	5.9±0.9	6.0±0.9
Western Upper Peninsula District	4.1±2.9	5.8±3.4	6.8±3.7	7.3±3.8	4.8±3.1	4.7±3.1	3.8±2.8	4.4±3.1	4.1±3.0	5.3±3.5

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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 15-C
Black Three-Year Moving Average Infant Death Rates by District
Michigan Residents, 2003-2014

Health Department	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	17.5±1.0	16.6±1.0	16.4±1.0	15.3±0.9	15.5±0.9	14.8±0.9	14.5±0.9	13.8±0.9	13.4±0.9	13.3±0.9
Barry-Eaton District	*	*	*	*	25.2±18.4	28.0±19.1	26.9±18.4	*	22.7±16.6	22.4±16.4
Berrien County	12.0±5.5	11.9±5.5	16.9±6.5	14.9±6.0	16.7±6.4	16.0±6.2	19.5±6.9	18.6±6.9	17.3±6.7	16.5±6.7
Calhoun County	14.2±8.0	20.8±9.8	25.3±10.7	24.2±10.5	20.5±9.6	22.1±10.4	25.4±11.3	20.2±10.1	13.8±8.1	9.9±6.8
City Of Detroit	17.9±1.4	16.8±1.4	16.2±1.4	15.8±1.4	16.5±1.5	16.0±1.5	15.0±1.5	14.7±1.5	14.8±1.5	14.6±1.5
District #10	-	-	*	*	*	*	*	*	*	*
Genesee County	20.3±4.0	18.6±3.8	17.1±3.6	17.1±3.6	17.9±3.7	14.6±3.4	14.2±3.4	12.4±3.3	14.2±3.5	14.6±3.6
Ingham County	17.2±6.2	19.8±6.8	19.4±6.8	17.8±6.3	16.5±6.0	16.7±5.9	13.1±5.3	11.4±5.0	10.1±4.7	10.1±4.7
Jackson County	31.9±14.5	28.9±13.5	28.7±13.4	16.8±10.3	15.6±10.1	13.2±9.1	11.6±8.6	13.0±9.0	18.5±10.8	16.2±10.0
Kalamazoo County	17.9±6.4	16.0±6.1	16.8±6.2	16.8±6.2	19.2±6.5	19.5±6.5	18.3±6.4	17.6±6.3	15.5±5.9	14.2±5.7
Kent County	17.7±4.4	18.0±4.4	16.8±4.2	14.4±3.8	13.4±3.7	13.9±3.8	16.6±4.2	14.6±3.9	12.9±3.6	9.9±3.2
Macomb County	14.7±5.1	12.7±4.5	13.5±4.3	13.4±4.0	15.1±4.0	13.8±3.8	13.1±3.6	11.4±3.2	10.8±3.0	9.6±2.8
Mid-Michigan District	*	*	*	-	-	-	*	*	*	-
Muskegon County	17.6±7.0	13.4±6.0	9.8±5.1	9.0±4.9	8.2±4.6	13.2±5.9	14.9±6.3	16.4±6.8	12.8±6.0	14.9±6.7
Oakland County	15.5±3.2	16.7±3.3	17.4±3.4	15.4±3.1	14.7±3.0	11.9±2.7	10.8±2.5	10.6±2.4	11.1±2.5	13.7±2.8
Ottawa County	*	-	-	*	*	*	*	*	*	*
Saginaw County	18.9±5.8	18.4±5.7	19.0±5.8	15.3±5.2	19.2±5.8	17.4±5.6	19.2±6.1	13.4±5.1	14.3±5.2	12.2±5.0
St Clair County	*	*	*	*	*	*	*	*	*	*
Van Buren-Cass County	30.5±20.8	28.6±20.9	33.3±22.7	*	*	*	*	*	*	*
Washtenaw County	16.1±5.5	12.1±4.6	13.4±4.9	13.2±4.9	11.6±4.6	10.5±4.4	8.7±4.0	8.9±4.1	8.3±4.1	10.9±4.7
Wayne County	16.9±3.4	16.0±3.2	14.4±3.0	12.7±2.7	10.4±2.4	11.7±2.5	12.6±2.5	13.6±2.6	11.3±2.4	11.2±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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 16-A
Three-Year Moving Average Infant Death Rates by City
Michigan Residents, 2003-2014

City	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	8.0±0.3	7.6±0.3	7.8±0.3	7.6±0.3	7.6±0.3	7.3±0.3	7.1±0.3	6.9±0.3	6.8±0.3	6.9±0.3
Ann Arbor	5.7±2.5	5.3±2.4	5.4±2.5	3.9±2.1	4.3±2.2	3.7±2.1	3.1±1.9	2.7±1.8	3.6±2.0	5.4±2.5
Battle Creek	8.3±3.4	9.2±3.7	11.3±4.0	12.4±4.3	11.0±4.1	10.6±4.1	11.3±4.3	11.0±4.3	9.9±3.8	8.3±3.5
Dearborn	4.4±1.8	4.8±1.9	5.6±2.0	7.7±2.3	6.9±2.3	7.0±2.3	6.3±2.2	7.4±2.4	7.5±2.4	6.4±2.2
Dearborn Heights	5.1±2.9	6.0±3.1	7.6±3.5	5.8±3.0	5.8±3.0	3.8±2.5	5.2±2.9	5.7±3.1	6.9±3.4	6.8±3.3
Detroit	15.9±1.2	15.0±1.2	14.7±1.2	14.3±1.2	14.8±1.3	14.4±1.3	13.6±1.3	13.6±1.3	13.6±1.3	13.4±1.3
Farmington Hills	8.4±3.4	7.1±3.2	7.7±3.4	7.4±3.3	7.0±3.2	6.4±3.1	6.4±3.1	6.9±3.3	6.7±3.2	7.1±3.3
Flint	16.8±3.1	15.3±3.0	12.2±2.7	11.6±2.7	12.6±2.9	12.6±3.0	12.1±3.0	11.6±3.0	11.0±2.8	10.7±2.8
Grand Rapids	8.4±1.7	8.6±1.7	8.3±1.7	10.0±1.9	8.3±1.8	8.6±1.8	8.5±1.8	9.4±1.9	8.0±1.7	7.0±1.6
Kalamazoo	11.0±3.6	8.3±3.2	9.5±3.4	9.2±3.3	10.5±3.5	11.0±3.6	10.3±3.6	9.7±3.5	6.0±2.5	6.0±2.5
Kentwood	9.3±3.9	8.1±3.6	6.8±3.3	4.2±2.6	3.9±2.6	3.4±2.4	3.4±2.4	4.5±2.7	5.2±2.9	5.1±2.9
Lansing	8.2±2.2	8.0±2.2	8.0±2.3	8.5±2.3	8.9±2.4	8.7±2.4	7.1±2.2	6.5±2.1	7.4±2.2	8.5±2.4
Livonia	6.1±2.9	4.4±2.5	3.0±2.1	5.4±2.8	5.2±2.8	4.8±2.7	2.4±1.9	2.8±2.1	5.5±2.9	5.4±2.8
Midland	7.1±4.4	8.0±4.7	7.4±4.6	5.9±4.1	5.1±3.8	*	*	*	6.3±4.1	8.4±4.7
Muskegon	10.8±4.6	7.3±3.8	6.7±3.6	7.5±3.9	7.5±3.9	7.2±3.9	7.8±4.1	10.5±4.8	12.6±5.0	13.2±5.1
Novi	4.9±3.2	*	*	5.3±3.3	5.3±3.3	6.6±3.7	3.3±2.7	3.8±2.8	4.3±3.0	6.1±3.5
Pontiac	12.3±3.5	13.1±3.6	12.9±3.7	12.5±3.7	14.4±4.1	13.8±4.0	11.9±3.8	8.5±3.2	9.4±3.3	11.1±3.6
Portage	6.3±3.7	6.6±3.7	7.7±4.0	4.4±3.1	9.2±4.5	8.6±4.3	7.5±4.1	4.1±3.0	5.8±3.6	6.4±3.8
Rochester Hills	5.2±2.8	5.6±2.9	4.1±2.5	6.2±3.1	5.0±2.8	4.8±2.8	3.5±2.5	4.0±2.6	5.2±3.0	4.4±2.7
Roseville	3.7±2.8	5.3±3.3	9.9±4.6	9.7±4.4	10.0±4.6	5.5±3.4	5.7±3.5	7.4±4.0	7.8±4.1	7.2±3.9
Royal Oak	4.1±2.7	3.2±2.4	3.7±2.6	4.0±2.6	4.4±2.7	5.6±3.0	6.4±3.2	8.2±3.7	7.1±3.5	7.6±3.6
Saginaw	13.2±4.0	11.1±3.7	13.0±4.0	11.5±3.8	14.6±4.3	13.2±4.2	13.7±4.4	9.6±3.7	12.1±4.2	13.8±4.5
Southfield	12.3±4.3	10.7±4.1	13.5±4.6	12.4±4.5	13.1±4.6	11.2±4.4	10.0±4.1	10.9±4.3	8.5±3.7	11.7±4.4
St Clair Shores	6.1±3.6	6.0±3.5	4.2±2.9	3.7±2.7	5.4±3.4	4.0±3.0	4.7±3.3	*	4.7±3.2	4.6±3.2
Sterling Heights	4.1±1.8	3.7±1.8	6.2±2.3	7.0±2.4	7.5±2.5	7.0±2.5	6.2±2.4	6.6±2.4	5.7±2.3	6.4±2.4
Taylor	9.3±3.6	10.8±4.0	10.2±3.9	8.5±3.5	6.3±3.1	6.8±3.2	9.9±3.9	11.8±4.2	10.8±4.0	8.6±3.6
Troy	3.9±2.4	4.4±2.6	4.9±2.8	5.8±3.0	5.5±3.0	6.2±3.2	4.4±2.7	3.8±2.5	3.3±2.3	3.8±2.4
Warren	7.8±2.4	7.6±2.4	7.2±2.3	6.4±2.2	8.1±2.5	7.9±2.5	9.1±2.7	7.6±2.4	8.7±2.6	6.8±2.3
Westland	6.1±2.6	6.4±2.7	6.3±2.7	7.5±2.9	7.4±2.9	8.2±3.1	9.6±3.4	10.4±3.5	9.3±3.3	8.3±3.1
Wyoming	6.9±2.6	8.9±3.0	10.9±3.2	12.1±3.4	11.0±3.3	8.4±3.0	6.7±2.6	4.6±2.2	4.1±2.1	4.4±2.1

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. City birth and mortality statistics have changed from pre-2011 reports due to geocoding. 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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 16-B
White Three-Year Moving Average Infant Death Rates by City
Michigan Residents, 2003-2014

City	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	5.8±0.3	5.4±0.3	5.6±0.3	5.6±0.3	5.6±0.3	5.4±0.3	5.2±0.3	5.3±0.3	5.3±0.3	5.5±0.3
Ann Arbor	2.5±2.0	3.0±2.2	3.2±2.3	*	3.7±2.5	3.2±2.4	3.7±2.6	*	3.2±2.3	4.5±2.8
Battle Creek	5.5±3.2	6.0±3.4	9.1±4.2	9.5±4.4	7.2±3.9	4.8±3.3	5.5±3.6	8.1±4.4	8.1±4.1	7.5±3.9
Dearborn	3.2±1.6	3.6±1.7	5.4±2.1	7.4±2.4	6.4±2.3	6.2±2.3	6.0±2.3	6.5±2.4	7.0±2.5	5.9±2.4
Dearborn Heights	5.3±3.1	6.3±3.4	7.2±3.6	5.2±3.1	4.3±2.8	3.0±2.4	3.1±2.5	3.7±2.7	5.3±3.2	6.5±3.7
Detroit	7.5±2.0	4.9±1.6	5.5±1.8	5.2±1.9	5.5±2.1	5.8±2.3	6.5±2.8	9.9±3.8	10.1±4.0	10.4±4.1
Farmington Hills	7.3±3.8	6.9±3.9	6.8±4.0	7.2±4.3	6.1±4.0	5.6±3.9	6.5±4.2	8.0±4.7	6.5±4.2	5.8±4.0
Flint	9.3±3.6	8.0±3.4	6.5±3.2	5.7±3.1	6.7±3.5	9.6±4.3	7.1±3.8	7.6±4.1	5.5±3.4	6.4±3.6
Grand Rapids	4.7±1.5	3.4±1.3	3.4±1.3	5.5±1.7	4.7±1.6	5.1±1.7	4.4±1.6	5.7±1.8	5.3±1.7	5.2±1.7
Kalamazoo	7.0±3.6	5.5±3.3	4.6±3.0	3.6±2.7	*	3.6±2.7	4.8±3.1	6.1±3.6	3.5±2.4	2.6±2.0
Kentwood	7.6±4.1	5.8±3.6	4.7±3.2	*	*	*	*	*	4.5±3.3	5.2±3.6
Lansing	4.3±2.0	3.4±1.8	3.8±1.9	4.5±2.1	5.2±2.3	4.6±2.2	5.2±2.4	5.3±2.5	7.4±2.9	7.9±3.1
Livonia	6.2±3.0	4.8±2.7	3.3±2.3	5.6±3.0	5.4±3.0	5.0±2.9	*	*	4.9±2.9	5.3±3.0
Midland	6.0±4.2	7.0±4.6	7.9±4.9	6.4±4.4	5.5±4.1	*	*	*	4.7±3.7	6.9±4.5
Muskegon	6.5±4.5	4.9±3.9	6.8±4.7	7.2±4.9	6.7±4.9	*	*	7.1±5.2	8.6±5.3	6.0±4.4
Novi	5.9±4.0	*	*	*	*	5.1±4.1	*	*	*	5.1±4.1
Pontiac	7.6±3.8	5.0±3.1	5.4±3.3	5.7±3.5	8.5±4.6	7.7±4.6	6.3±4.4	*	4.9±3.9	4.8±3.8
Portage	4.6±3.4	5.1±3.5	5.6±3.7	3.8±3.0	6.8±4.2	7.4±4.4	6.1±4.0	4.1±3.3	5.4±3.7	6.0±3.9
Rochester Hills	4.0±2.8	4.1±2.8	3.1±2.5	7.0±3.8	5.5±3.4	5.6±3.5	3.4±2.7	3.4±2.7	3.9±2.9	*
Roseville	*	4.4±3.2	8.5±4.6	9.8±4.9	10.3±5.2	6.3±4.1	5.3±3.9	5.6±4.1	4.7±3.8	5.5±4.0
Royal Oak	3.9±2.7	*	*	3.0±2.4	3.4±2.5	5.8±3.3	6.8±3.5	8.3±3.9	6.5±3.5	6.9±3.6
Saginaw	6.2±3.8	*	5.3±3.6	6.2±4.0	6.3±4.1	4.3±3.5	*	*	5.7±4.2	11.3±5.9
Southfield	*	*	*	*	*	11.6±9.2	11.9±9.5	12.0±9.5	*	*
St Clair Shores	5.3±3.4	5.2±3.4	4.0±2.9	4.1±3.0	6.0±3.7	4.5±3.4	5.3±3.6	*	*	*
Sterling Heights	4.4±2.1	4.0±2.0	5.7±2.4	6.1±2.5	6.9±2.7	7.7±2.9	6.9±2.8	7.6±3.0	6.0±2.6	6.3±2.6
Taylor	9.6±4.2	9.7±4.3	7.9±4.0	7.0±3.8	5.6±3.5	5.3±3.5	6.7±4.0	8.2±4.4	8.0±4.3	6.8±4.0
Troy	*	3.5±2.8	4.9±3.4	5.1±3.5	5.3±3.6	6.1±4.0	5.4±3.7	5.9±3.9	4.6±3.4	4.7±3.4
Warren	5.6±2.3	6.5±2.5	7.1±2.6	5.9±2.5	6.8±2.7	6.3±2.7	6.9±2.9	5.9±2.7	8.0±3.2	7.0±3.0
Westland	3.7±2.3	3.4±2.2	4.4±2.6	4.9±2.8	5.9±3.1	5.7±3.1	7.8±3.7	8.6±3.9	8.5±3.9	9.0±4.0
Wyoming	6.0±2.6	7.4±2.9	9.1±3.2	9.3±3.2	8.6±3.2	6.7±2.8	5.3±2.5	3.8±2.1	3.2±2.0	4.2±2.3

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. City birth and mortality statistics have changed from pre-2011 reports due to geocoding. 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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 16-C
Black Three-Year Moving Average Infant Death Rates by City
Michigan Residents, 2003-2014

City	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14
Michigan	17.5±1.0	16.6±1.0	16.4±1.0	15.3±0.9	15.5±0.9	14.8±0.9	14.5±0.9	13.8±0.9	13.4±0.9	13.3±0.9
Battle Creek	14.4±9.9	18.2±11.2	19.1±11.2	20.9±11.7	21.0±11.7	23.0±12.9	21.5±12.6	11.9±9.5	12.1±8.9	11.6±8.5
Detroit	17.9±1.4	16.8±1.4	16.2±1.4	15.8±1.4	16.5±1.5	15.9±1.5	15.0±1.5	14.7±1.5	14.8±1.5	14.5±1.5
Flint	22.4±4.8	20.1±4.6	15.8±4.1	15.5±4.1	16.6±4.2	14.7±4.1	15.3±4.3	14.1±4.2	14.7±4.2	13.8±4.1
Grand Rapids	17.8±5.3	17.0±5.1	17.7±5.1	17.6±5.1	16.8±5.0	16.0±5.0	18.8±5.4	16.7±5.1	14.9±4.8	11.5±4.2
Kalamazoo	18.4±8.0	14.0±7.0	17.4±7.7	18.5±8.0	22.4±8.7	21.6±8.5	17.7±7.9	12.7±6.9	9.7±5.7	11.5±6.2
Lansing	17.3±6.5	20.9±7.3	20.0±7.1	19.0±6.7	17.9±6.4	18.3±6.5	13.5±5.7	11.0±5.2	8.9±4.7	10.7±5.1
Muskegon	19.3±10.4	11.8±8.1	*	*	*	12.0±8.3	13.1±8.5	17.4±10.2	18.1±10.1	21.6±11.2
Pontiac	18.5±6.6	22.6±7.1	21.6±7.1	19.6±6.7	19.9±6.8	19.1±6.7	16.5±6.2	12.5±5.3	12.6±5.2	15.8±5.8
Saginaw	20.0±7.0	18.6±6.7	20.2±7.0	16.0±6.2	20.1±7.0	18.4±6.9	20.5±7.5	14.1±6.3	15.8±6.5	15.0±6.5
Southfield	14.7±5.7	12.9±5.3	15.4±5.9	14.8±5.8	15.0±5.8	11.6±5.2	10.0±4.7	11.2±5.0	10.3±4.7	14.9±5.8
Taylor	*	17.0±11.0	19.9±11.6	14.9±9.7	9.3±7.4	11.9±8.2	18.8±9.8	21.6±10.2	18.7±9.4	14.0±8.2
Warren	19.5±12.0	13.1±9.0	9.8±7.3	11.8±7.2	14.8±7.7	14.6±7.3	14.1±6.9	11.9±6.0	9.4±5.1	7.8±4.6
Westland	23.9±14.6	19.5±12.0	10.6±8.5	12.3±8.5	11.0±7.6	14.0±8.2	12.1±7.5	14.7±8.3	11.7±7.2	9.1±6.3

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. City birth and mortality statistics have changed from pre-2011 reports due to geocoding. 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: 2003-2013 Geocoded Michigan Death Certificate Registries; 2014 Michigan Death Certificate Registry. 2003-2014 Geocoded Michigan Birth Certificate Registries. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 17-A
Number of Neonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Michigan	694	700	660	697	608	600	549	501	540	544	513
Alcona	-	1	-	-	1	1	-	-	1	-	1
Alger	-	-	-	-	3	-	-	-	-	-	-
Allegan	4	10	4	13	4	4	6	5	3	3	3
Alpena	1	-	3	-	1	-	-	1	-	1	1
Antrim	3	-	1	-	2	-	4	2	-	3	-
Arenac	-	-	1	-	-	2	-	1	1	4	2
Baraga	-	2	-	-	1	-	-	-	-	1	-
Barry	3	1	6	3	2	3	4	2	2	3	1
Bay	1	8	8	5	3	7	9	6	4	-	5
Benzie	-	1	2	2	-	-	-	-	-	2	-
Berrien	5	10	12	13	10	10	8	8	11	8	9
Branch	4	2	2	2	1	2	2	3	3	2	3
Calhoun	13	11	11	18	13	13	10	9	7	8	5
Cass	2	6	1	2	2	5	1	2	2	-	5
Charlevoix	-	1	-	2	1	2	-	-	-	-	-
Cheboygan	-	-	-	1	-	-	-	-	-	-	-
Chippewa	-	4	2	-	1	-	-	3	2	1	1
Clare	4	-	2	3	-	1	-	1	2	1	1
Clinton	2	2	2	6	1	1	3	2	2	1	3
Crawford	-	-	2	4	1	1	-	-	-	1	-
Delta	3	-	-	2	-	2	2	-	4	1	3
Dickinson	-	-	1	-	2	2	1	-	-	4	1
Eaton	3	3	4	4	3	3	7	5	2	6	3
Emmet	-	1	-	1	2	-	3	-	1	2	1
Genesee	51	33	44	40	27	34	19	22	19	25	23

Table 17-A
Number of Neonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gladwin	1	4	-	1	1	1	1	1	-	1	1
Gogebic	-	-	1	1	-	-	2	-	-	-	1
Grand Traverse	6	2	4	5	7	3	3	-	3	-	1
Gratiot	4	-	4	4	2	3	3	3	-	3	2
Hillsdale	-	-	6	4	3	1	1	2	1	3	-
Houghton	3	1	2	2	3	1	3	1	2	2	1
Huron	-	2	2	-	-	3	1	1	-	-	-
Ingham	21	19	13	17	22	14	12	16	16	20	15
Ionia	2	2	3	2	-	1	2	1	-	2	2
Iosco	-	1	1	-	-	1	1	1	-	-	2
Iron	1	-	-	1	-	-	1	-	-	-	-
Isabella	1	7	3	5	1	1	-	6	2	-	2
Jackson	13	17	11	12	11	7	9	8	3	10	5
Kalamazoo	12	16	14	22	13	20	17	8	17	11	11
Kalkaska	1	3	-	-	-	1	1	-	3	1	3
Kent	49	45	59	47	48	42	32	40	38	28	37
Keweenaw	-	-	1	-	-	-	-	-	-	-	-
Lake	-	2	-	-	-	1	-	-	1	-	-
Lapeer	-	-	5	4	3	6	4	-	1	4	3
Leelanau	1	1	-	-	-	-	3	-	-	-	1
Lenawee	4	6	8	5	9	8	11	3	6	4	5
Livingston	6	8	5	11	6	9	6	9	7	3	9
Luce	-	1	1	-	1	-	-	-	-	-	1
Mackinac	1	1	1	-	1	1	-	-	-	-	-
Macomb	37	41	30	48	40	52	39	43	40	52	34

Table 17-A
Number of Neonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Manistee	2	1	1	-	1	1	1	-	-	-	1
Marquette	-	2	2	2	2	2	1	3	-	2	-
Mason	-	1	3	-	1	1	2	1	-	-	1
Mecosta	3	1	2	1	4	-	1	4	4	4	3
Menominee	1	2	-	1	1	1	-	1	-	-	1
Midland	6	7	7	3	1	3	2	2	3	4	3
Missaukee	-	1	-	-	-	1	-	-	1	-	2
Monroe	6	7	11	6	5	3	4	2	6	10	2
Montcalm	3	-	1	2	1	2	5	3	3	4	1
Montmorency	-	-	1	-	-	-	1	-	-	-	-
Muskegon	16	10	9	13	9	9	16	11	11	14	9
Newaygo	3	5	1	6	3	1	2	6	2	2	2
Oakland	83	73	72	71	62	60	63	45	61	69	67
Oceana	4	3	1	1	2	2	3	-	2	1	3
Ogemaw	1	-	-	1	-	-	1	1	1	-	-
Ontonagon	-	-	1	1	-	-	-	-	-	1	1
Osceola	1	3	2	1	-	1	1	-	-	1	-
Oscoda	-	-	-	-	1	1	-	-	1	-	1
Otsego	-	-	-	3	1	-	2	3	1	-	1
Ottawa	12	11	18	16	19	10	17	17	14	20	11
Presque Isle	1	-	1	2	-	-	1	1	3	-	1
Roscommon	2	1	-	3	1	1	-	1	-	-	1
Saginaw	13	18	9	16	10	15	10	8	8	13	11
St. Clair	16	10	9	10	4	6	4	6	10	2	3
St. Joseph	5	4	7	6	8	9	2	3	1	5	3

Table 17-A
Number of Neonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Sanilac	3	1	4	4	1	2	-	-	1	1	3
Schoolcraft	1	1	-	1	-	-	-	-	-	-	-
Shiawassee	6	4	-	8	-	2	2	1	2	2	1
Tuscola	3	3	3	1	-	2	4	1	4	1	-
Van Buren	6	9	-	5	6	4	2	3	4	4	3
Washtenaw	19	19	15	17	14	18	11	10	14	12	23
Wayne	215	225	198	180	197	172	158	151	172	147	146
Detroit City	149	161	121	120	123	114	98	80	104	87	74
Wayne County Excluding Detroit City	66	64	77	60	74	58	60	71	68	60	72
Wexford	1	2	-	4	2	2	2	2	5	3	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: 2004-2014 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 17-B
Number of PostNeonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Michigan	290	313	280	300	286	281	268	248	243	255	260
Alcona	-	-	1	-	-	-	-	1	-	-	-
Alger	-	-	-	-	-	1	-	-	-	-	-
Allegan	4	3	4	5	2	2	-	2	1	6	5
Alpena	-	-	1	1	-	3	1	1	-	-	1
Antrim	-	-	1	2	-	1	-	-	-	-	-
Arenac	1	-	-	-	-	-	1	1	-	-	-
Baraga	-	-	-	-	-	-	-	-	-	-	-
Barry	1	1	1	2	3	2	4	-	1	1	-
Bay	2	2	4	3	5	1	3	3	1	2	4
Benzie	-	2	-	-	-	-	1	-	-	-	-
Berrien	3	10	5	8	6	7	6	10	3	6	6
Branch	4	4	-	-	1	-	2	1	1	1	1
Calhoun	5	7	6	10	1	7	8	6	3	3	4
Cass	1	2	2	1	2	1	1	1	2	3	-
Charlevoix	-	-	1	-	-	-	-	1	-	-	1
Cheboygan	1	-	1	1	1	2	-	-	-	-	-
Chippewa	-	1	2	1	-	-	2	1	-	1	1
Clare	1	-	1	-	1	1	1	-	-	-	-
Clinton	1	1	1	-	2	1	2	-	-	1	2
Crawford	-	-	-	1	-	-	-	1	-	-	-
Delta	1	1	1	2	-	1	-	1	-	-	-
Dickinson	-	2	3	-	-	-	1	-	-	-	-
Eaton	3	1	2	2	4	3	1	1	3	4	4
Emmet	1	2	-	-	-	1	-	-	1	-	-
Genesee	26	20	17	17	19	17	11	18	19	15	18

**Table 17-B
Number of PostNeonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014**

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gladwin	2	-	-	-	-	1	1	-	-	1	2
Gogebic	-	-	1	-	-	-	-	-	-	-	-
Grand Traverse	-	3	2	2	1	2	-	1	1	-	5
Gratiot	1	1	1	-	1	-	2	-	-	-	2
Hillsdale	-	-	1	1	1	-	1	-	1	-	-
Houghton	-	-	-	1	1	-	-	-	-	1	1
Huron	-	-	1	-	-	-	-	1	3	-	-
Ingham	7	11	5	9	3	6	2	5	6	8	6
Ionia	1	1	-	4	1	-	3	2	1	3	1
Iosco	1	-	-	1	1	2	2	1	1	1	-
Iron	-	-	-	-	-	1	1	1	-	-	1
Isabella	2	2	3	2	-	3	4	-	2	2	-
Jackson	1	8	6	3	3	5	2	3	4	5	3
Kalamazoo	9	6	3	7	9	9	13	3	2	15	5
Kalkaska	-	-	-	-	-	-	1	-	1	1	-
Kent	26	21	26	18	21	14	22	19	12	11	15
Keweenaw	-	-	-	-	-	-	-	-	-	-	-
Lake	1	1	1	-	-	1	1	-	-	-	-
Lapeer	1	3	1	1	1	5	3	-	1	-	2
Leelanau	1	-	-	1	-	-	-	1	-	1	2
Lenawee	1	-	2	4	2	1	4	3	2	5	4
Livingston	-	2	2	3	4	3	5	3	1	4	4
Luce	-	-	1	-	1	-	-	-	-	-	1
Mackinac	-	-	-	-	1	-	-	-	-	-	-
Macomb	21	20	21	21	22	26	9	10	12	15	14

**Table 17-B
Number of PostNeonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014**

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Manistee	-	3	-	-	-	1	1	1	-	-	1
Marquette	-	1	2	-	-	2	1	1	2	-	1
Mason	-	-	1	1	1	-	1	-	-	-	1
Mecosta	2	1	-	1	5	-	2	2	-	1	1
Menominee	-	-	-	-	1	-	-	-	1	-	-
Midland	2	1	1	-	2	2	-	2	3	3	3
Missaukee	-	1	-	-	-	-	-	-	-	-	-
Monroe	7	4	4	4	6	6	5	1	3	5	1
Montcalm	1	1	3	-	2	2	1	1	2	1	1
Montmorency	-	-	-	-	-	-	-	-	2	-	-
Muskegon	5	3	4	6	7	6	7	4	7	5	6
Newaygo	-	1	3	3	-	2	1	1	-	1	4
Oakland	13	30	19	21	26	17	21	25	32	21	17
Oceana	-	3	1	1	1	-	1	-	3	-	3
Ogemaw	1	1	-	1	1	1	1	-	1	-	1
Ontonagon	-	-	-	-	-	-	-	-	-	-	-
Osceola	1	1	-	1	-	-	1	2	-	-	-
Oscoda	-	-	-	-	1	-	-	-	1	-	-
Otsego	3	-	2	2	-	1	-	1	2	3	2
Ottawa	6	5	4	1	4	5	3	4	4	6	2
Presque Isle	-	-	-	-	-	1	1	-	-	-	-
Roscommon	2	-	-	1	-	-	-	-	-	-	-
Saginaw	8	10	10	10	15	11	2	9	5	6	10
St. Clair	4	4	4	2	4	9	2	5	3	4	6
St. Joseph	3	2	2	4	2	1	5	1	6	2	2

Table 17-B
Number of PostNeonatal Deaths by County of Residence,
State of Michigan, Michigan Counties and Detroit City
Michigan Residents, 2004-2014

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Sanilac	-	1	-	2	-	1	1	-	3	1	-
Schoolcraft	-	-	1	-	-	-	-	-	-	-	-
Shiawassee	2	6	2	2	1	-	2	-	1	1	2
Tuscola	2	3	1	1	1	2	1	1	-	1	2
Van Buren	3	5	1	1	4	1	2	1	4	2	-
Washtenaw	10	6	8	6	3	4	9	4	6	6	5
Wayne	85	78	75	94	78	76	75	79	66	70	71
Detroit City	62	49	54	59	52	52	48	50	47	47	42
Wayne County Excluding Detroit City	23	29	21	35	26	24	27	29	19	23	29
Wexford	-	4	1	1	1	-	1	1	1	-	2
Unknown	-	-	-	-	-	-	-	-	-	-	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: 2004-2014 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 18-A
Number of Neonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 2004-2014

Health Department	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Michigan	694	700	660	697	608	600	549	501	540	544	513
Allegan County	4	10	4	13	4	4	6	5	3	3	3
Barry-Eaton District	6	4	10	7	5	6	11	7	4	9	4
Berrien County	5	10	12	13	10	10	8	8	11	8	9
Branch-Hillsdale-St. Joseph	9	6	15	12	12	12	5	8	5	10	6
Calhoun County	13	11	11	18	13	13	10	9	7	8	5
Central Michigan District	9	15	8	13	3	7	2	10	5	7	7
Chippewa County	-	4	2	-	1	-	-	3	2	1	1
City Of Detroit	149	161	121	120	123	114	98	80	104	87	74
Delta & Menominee	4	2	-	3	1	3	2	1	4	1	4
Dickinson-Iron District	1	-	1	1	2	2	2	-	-	4	1
District #10	14	19	10	16	14	11	12	13	18	12	17
District #2	1	2	1	1	2	3	2	2	3	-	4
District #4	2	-	5	3	1	-	2	2	3	1	2
Genesee County	51	33	44	40	27	34	19	22	19	25	23
Grand Traverse County	6	2	4	5	7	3	3	-	3	-	1
Ingham County	21	19	13	17	22	14	12	16	16	20	15
Ionia County	2	2	3	2	-	1	2	1	-	2	2
Jackson County	13	17	11	12	11	7	9	8	3	10	5
Kalamazoo County	12	16	14	22	13	20	17	8	17	11	11
Kent County	49	45	59	47	48	42	32	40	38	28	37
Lapeer County	-	-	5	4	3	6	4	-	1	4	3
Lenawee County	4	6	8	5	9	8	11	3	6	4	5
Livingston County	6	8	5	11	6	9	6	9	7	3	9
Luce-Mackinac-Alger-Schoolcraft	2	3	2	1	5	1	-	-	-	-	1
Macomb County	37	41	30	48	40	52	39	43	40	52	34

Table 18-A
Number of Neonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 2004-2014

Health Department	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Marquette County	-	2	2	2	2	2	1	3	-	2	-
Mid-Michigan District	9	2	7	12	4	6	11	8	5	8	6
Midland County	6	7	7	3	1	3	2	2	3	4	3
Monroe County	6	7	11	6	5	3	4	2	6	10	2
Muskegon County	16	10	9	13	9	9	16	11	11	14	9
Oakland County	83	73	72	71	62	60	63	45	61	69	67
Ottawa County	12	11	18	16	19	10	17	17	14	20	11
Bay County	1	8	8	5	3	7	9	6	4	-	5
Saginaw County	13	18	9	16	10	15	10	8	8	13	11
Shiawassee County	6	4	-	8	-	2	2	1	2	2	1
St Clair County	16	10	9	10	4	6	4	6	10	2	3
Van Buren-Cass County	8	15	1	7	8	9	3	5	6	4	8
Washtenaw County	19	19	15	17	14	18	11	10	14	12	23
Wayne County	66	64	77	60	74	58	60	71	68	60	72
Benzie-Leelanau District	1	2	2	2	-	-	3	-	-	2	1
Northwest Michigan Community Health	3	2	1	6	6	2	9	5	2	5	2
Western Upper Peninsula District	3	3	5	4	4	1	5	1	2	4	3
Tuscola County	3	3	3	1	-	2	4	1	4	1	-
Huron County	-	2	2	-	-	3	1	1	-	-	-
Sanilac County	3	1	4	4	1	2	-	-	1	1	3
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: 2004-2014 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Table 18-B
Number of Postneonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 2004-2014

Health Department	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Michigan	290	313	280	300	286	281	268	248	243	255	260
Allegan County	4	3	4	5	2	2	-	2	1	6	5
Barry-Eaton District	4	2	3	4	7	5	5	1	4	5	4
Berrien County	3	10	5	8	6	7	6	10	3	6	6
Branch-Hillsdale-St. Joseph	7	6	3	5	4	1	8	2	8	3	3
Calhoun County	5	7	6	10	1	7	8	6	3	3	4
Central Michigan District	9	3	4	4	1	5	8	3	2	3	2
Chippewa County	-	1	2	1	-	-	2	1	-	1	1
City Of Detroit	62	49	54	59	52	52	48	50	47	47	42
Delta & Menominee	1	1	1	2	1	1	-	1	1	-	-
Dickinson-Iron District	-	2	3	-	-	1	2	1	-	-	1
District #10	3	14	7	8	8	4	9	6	5	3	12
District #2	2	1	1	2	3	3	3	2	3	1	1
District #4	1	-	2	2	1	6	2	1	2	-	1
Genesee County	26	20	17	17	19	17	11	18	19	15	18
Grand Traverse County	-	3	2	2	1	2	-	1	1	-	5
Ingham County	7	11	5	9	3	6	2	5	6	8	6
Ionia County	1	1	-	4	1	-	3	2	1	3	1
Jackson County	1	8	6	3	3	5	2	3	4	5	3
Kalamazoo County	9	6	3	7	9	9	13	3	2	15	5
Kent County	26	21	26	18	21	14	22	19	12	11	15
Lapeer County	1	3	1	1	1	5	3	-	1	-	2
Lenawee County	1	-	2	4	2	1	4	3	2	5	4
Livingston County	-	2	2	3	4	3	5	3	1	4	4
Luce-Mackinac-Alger-Schoolcraft	-	-	2	-	2	1	-	-	-	-	1
Macomb County	21	20	21	21	22	26	9	10	12	15	14

Table 18-B
Number of Postneonatal Deaths by Local Health Department and
State of Michigan,
Michigan Residents, 2004-2014

Health Department	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Marquette County	-	1	2	-	-	2	1	1	2	-	1
Mid-Michigan District	3	3	5	-	5	3	5	1	2	2	5
Midland County	2	1	1	-	2	2	-	2	3	3	3
Monroe County	7	4	4	4	6	6	5	1	3	5	1
Muskegon County	5	3	4	6	7	6	7	4	7	5	6
Oakland County	13	30	19	21	26	17	21	25	32	21	17
Ottawa County	6	5	4	1	4	5	3	4	4	6	2
Bay County	2	2	4	3	5	1	3	3	1	2	4
Saginaw County	8	10	10	10	15	11	2	9	5	6	10
Shiawassee County	2	6	2	2	1	-	2	-	1	1	2
St Clair County	4	4	4	2	4	9	2	5	3	4	6
Van Buren-Cass County	4	7	3	2	6	2	3	2	6	5	-
Washtenaw County	10	6	8	6	3	4	9	4	6	6	5
Wayne County	23	29	21	35	26	24	27	29	19	23	29
Benzie-Leelanau District	1	2	-	1	-	-	1	1	-	1	2
Northwest Michigan Community Health	4	2	4	4	-	3	-	2	3	3	3
Western Upper Peninsula District	-	-	1	1	1	-	-	-	-	1	1
Tuscola County	2	3	1	1	1	2	1	1	-	1	2
Huron County	-	-	1	-	-	-	-	1	3	-	-
Sanilac County	-	1	-	2	-	1	1	-	3	1	-
Unknown	-	-	-	-	-	-	-	-	-	-	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.
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Source: 2004-2014 Michigan Resident Death Files,
 Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services