



MICHIGAN DEPARTMENT OF HEALTH & HUMAN SERVICES
Division for Vital Records and Health Statistics
Michigan Birth Defects Registry

BIRTH DEFECTS IN MICHIGAN
All Cases Reported and Processed by January 10, 2016



Rick Snyder, Governor
Nick Lyon, Director

LANSING, MICHIGAN
AUGUST 2016

Table Of Contents

Overview

Introduction	1
Data Quality Considerations	2
Table 1 Cases & Prevalence Rates, 2000-2013	4
Table 2-A Birth Defects Cases by Time to Diagnosis & Birth Year, 1992-2013	5
Table 2-B Average Birth Defects Cases by Time to Diagnosis, 1992-2013	6
Table 3 Three-year Average Birth Defects Cases by Leading Diagnostic Groups, 1997-2013	7

Childhood Mortality Rates & Numbers, 1995-2013

Table 4-A Deaths Among Children with Birth Defects by Time to Death & Birth Year	8
Table 4-B Deaths Among All Michigan Children by Time to Death & Birth Year	9
Table 5-A Mortality Rates Among Children with Birth Defects by Time to Death & Birth Year	10
Table 5-B Mortality Rates Among All Michigan Children with Birth Defects by Time to Death & Birth Year	11
Table 6-A Cumulative Deaths Among Children with Birth Defects by Time to Death & Birth Year	12
Table 6-B Cumulative Deaths Among All Michigan Children by Time to Death & Birth Year	13
Table 7-A Cumulative Death Rates Among Children with Birth Defects by Time to Death & Birth Year	14
Table 7-B Cumulative Death Rates Among All Michigan Children by Time to Death & Birth Year	15
Figure 1 Cumulative Mortality Rates	16

Birth Defects by Diagnostic Code Group & Birth Year

Figure 2 Total Birth Defects by Summary Diagnostic Code Group, 2011-2013	17
Table 8 Birth Defects by Summary Diagnostic Code Group & Birth Year, 2000-2013	19
Table 9 Birth Defects by Detailed Diagnostic Code Group & Birth Year, 2000-2013	21
Figure 3 Three-year Average Mortality Rates by Summary Diagnostic Code Group, 2011-2013	27
Table 10 Prevalence Rates by Summary Diagnostic Code Group & Birth Year, 2000-2013	29
Table 11 Birth Defect Prevalence Rates by Detailed Diagnostic Code Group & Birth Year, 2000-2013	31

Detailed Prevalence Rate Trend Figures, 1994-2013

Figure 4 Prevalence Rates of Neural Tube Defects	37
Figure 5 Prevalence Rates of Eye & Ear Defects	38

Table Of Contents

Detailed Prevalence Rate Trend Figures, 1994-2013 (continued)

Figure 6-A	Prevalence Rates of Cardiac Defects Part 1	39
Figure 6-B	Prevalence Rates of Cardiac Defects Part 2	40
Figure 6-C	Prevalence Rates of Cardiac Defects Part 3	41
Figure 7	Prevalence Rates of Circulatory Defects	42
Figure 8	Prevalence Rates of Oral Defects	43
Figure 9	Prevalence Rates of Gastrointestinal Defects	44
Figure 10	Prevalence Rates of Genitourinary Defects	45
Figure 11	Prevalence Rates of Musculoskeletal Defects	46
Figure 12	Prevalence Rates of Chromosomal Defects	47

Infant Mortality of Michigan Children with Reported Birth Defects by Diagnostic Code Group & Birth Year

Table 12	Infant Deaths by Summary Diagnostic Code Group, 2000-2013	48
Table 13	Infant Deaths by Detailed Diagnostic Code Group, 2000-2013	50
Table 14	Three-year Infant Death Totals by Summary Diagnostic Code Group, 2000-2013	56
Table 15	Three-year Infant Death Totals by Detailed Diagnostic Group, 2000-2013	58
Table 16	Three-year Average Infant Death Rates by Summary Diagnostic Code Group, 2000-2013	64
Table 17	Three-year Average Infant Death by Detailed Diagnostic Code Group, 2000-2013	66
Table 18	Six-year Infant Death Totals by Summary Diagnostic Group, 1995-2013	72
Table 19	Six-year Infant Death Totals by Detailed Diagnostic Group, 2000-2013	74
Table 20	Six-year Average Infant Death Rates by Summary Diagnostic Group, 2000-2013	80
Table 21	Six-year Average Infant Death Rates by Detailed Diagnostic Group, 2000-2013	82

Appendices

Appx A	Birth Defect Groups & ICD-9-CM Diagnosis Codes	88
--------	--	----

Birth Defects Prevalence and Mortality Tables

Division for Vital Records & Health Statistics Michigan Department of Health & Human Services

The Michigan Birth Defects Registry was established as a statewide reporting system in 1992 to develop statistical data on birth defects; to conduct birth defect surveillance; to conduct studies of birth defect causes and prevention; and to insure the families of children with birth defects receive appropriate support services.

This statistical abstract provides a series of tables derived from the Michigan Birth Defects Registry, including birth defect prevalence data and birth defects-related mortality through 2013. Selected high points concerning these data are:

➤ Birth Defect Cases and Case Rates

In the years 2012 and 2013, there were 11,357 and 11,852 cases of birth defects reported for children under one year of age, respectively. The 2012-2013 average rate was about 1,025 cases per 10,000 resident live births. For the same children born during 2012, there were an additional 819 cases reported for children of two years of age. In other words, for infants born in 2012, there were 1,080 birth defects per 10,000 resident live births, an increase of 11% from 2010. Between 2004 to 2013, the ten-year average prevalence rate for two-year olds based upon reported cases was about 977 per 10,000 live births. (See Table 1.)

➤ Infant Death Rates

In 2013, infants born with a birth defect were 4 times more likely to die than other infants. The infant death rate for children born in 2013 with a reportable birth defect was 28.3 per 1,000, but the overall infant death rate was 7.2 per 1,000 resident infants born in Michigan during the same year. Birth defect rates were higher between 2011-2013 than the rates between 2008-2010, but the rate of infant deaths born with birth defects declined. (See Table 5-A.)

➤ Mortality Risk

A higher mortality risk can be expected for children with birth defects well beyond the first year of life. The cumulative mortality rate for resident children under 2 years of age born during 2012 was 7.6 per 1,000. Children born during 2012 with a birth defect had a cumulative mortality rate of 27.4 per 1,000 by the end of the second year of life. The mortality rate differential remains high throughout early childhood. For deaths under the age of 18 years, the experience of children born in 1996 indicates death rates of 61.0 per 1,000 for children with birth defects and 12.5 per 1,000 for children generally. The significantly higher mortality rate for children with birth defects underscores the seriousness of these conditions. (See Table 7-A.)

➤ Birth Defects By Diagnostic Code Groups

The three most common diagnostic categories reported in 2013 were musculoskeletal system defects (2,281 cases), heart and circulatory system defects (1,878 cases) and anomalies of the genital and urinary systems (1,499 cases). (See Table 8.)

With regard to mortality, the number of deaths between 2011-2013 for children with heart and circulatory anomalies was 311, about 3 times that of other leading causes of birth defect related deaths. Infant mortality rates were highest for the chromosomal anomalies (110.7 per 1,000 born with the defect) and for central nervous system anomalies (80.2 per 1,000), based upon mortality among the 2011-2013 birth cohorts. (See Table 20.) Mortality rates averaged over six years allow for the stable estimates of birth defect death rates by detailed diagnostic code groups. Birth defects mortality were highest for certain rare congenital anomalies: Trisomy 13 (Patau Syndrome) was 700 per 1,000; Trisomy 18 (Edward Syndrome) was 489.6 per 1,000; and Anencephalus was 571.4 per 1,000. (See Table 21.)

Table 9 displays detailed condition counts.

Data Quality Considerations

Changes in the number of birth defect cases may reflect a change in birth defect reporting or identification, rather than a change in trend. In particular, during the late 1990s, certain reporting and diagnostic practices contributed to the number of cases identified. The changes by year are delineated below:

2010: A change in ICD-9 CM coding added unique codes for Gastroschisis and Omphalocele in October of 2009. This is the cause of the missing values in the reported frequencies for these conditions as listed under the diagnostic grouping "I03 Gastroschisis (756.73) and Omphalocele (756.72)."

1998: Increases in frequency of endocrine and metabolic disorders since 1998 are due to coordination of case reporting with the Newborn Metabolic Screening Program.

1997: The increased number of cases diagnosed with hearing deficiency in evidence since 1997 is related directly to a rapid increase in screening of Michigan newborns for hearing loss by birthing hospitals.

1996: A change in ICD-9 CM coding added unique codes for hypospadias and epispadias in October of 1996. This is the cause of the discontinuity in the reported frequencies for these conditions as listed under the diagnostic grouping "H04 Hypospadias and Epispadias (752.61, 752.62)."

Completeness and Over-reporting

The completeness of the data presented in these tables is affected by three factors that relate to data accuracy and comparability. It is essential that these factors be considered in using the information particularly when comparing frequencies over time or between geographic areas. These factors are:

Inconsistent or Incomplete Reporting - There is evidence that some of the facilities required to provide these reports are not reporting all the cases that should be reported. This problem can be expected to affect the completeness of the data within the specific regions of the state where these facilities are located. Very low birth defects frequencies and significant shifts in the number of reported cases can be expected for counties where such problems exist. Work beginning in 1999 to identify and resolve problems of under-reporting resulted in actual case counts increasing due to more complete information.

Over Reporting - The ongoing review of reports received has identified that in certain hospitals a report that a child has a reportable condition will be submitted, but the diagnosis is later ruled out and the original report is not corrected accordingly. This can cause an over count of the number of cases. This problem can be expected to vary by facility which, in turn, can lead to geographic variations in case frequency counts for those areas where such facilities are located.

Resident Interstate Information Exchange is Lacking - There is presently no exchange of data with neighboring states relative to children born with birth defects. Such exchange does occur with vital records and cancer information. The effect of this lack of a resident information exchange is that birth defects cases are unreported whenever a Michigan child is diagnosed with or treated for a birth defect in a facility that is not within Michigan. This problem will cause an undercount of the actual number of cases and can be expected to significantly affect the completeness of reports for counties whose residents commonly travel outside Michigan for their health care. It is due to the lack of interstate resident information exchange that rates are calculated only for resident children who are also born in Michigan.

Symbols Used In Tables

--- Data not available.

- A dash indicates quantity zero.

* An asterisk indicates unstable rates that would be produced from small numbers. The figure does not meet standards of reliability or precision.

Table 1
Michigan Birth Defect Cases and Prevalence Rates
Michigan Resident Children
All Cases Reported and Processed by January 10, 2016
Live Births during 2000 through 2013

Birth Year	Resident Live Births Born in Michigan	Children Diagnosed within One Year	Prevalence Rate at One Year	Children Diagnosed within Two Years	Prevalence Rate at Two Years
All Years	2,947,797	214,970	729.3	253,008	858.3
2000	136,756	10,179	744.3	12,397	906.5
2001	133,968	10,571	789.1	12,765	952.8
2002	130,100	10,288	790.8	12,129	932.3
2003	132,148	9,804	741.9	11,495	869.9
2004	130,247	9,873	758.0	11,813	907.0
2005	128,087	11,080	865.0	12,843	1,002.7
2006	128,043	11,686	912.7	13,557	1,058.8
2007	124,666	9,859	790.8	11,641	933.8
2008	120,643	9,630	798.2	10,729	889.3
2009	116,678	8,014	686.8	9,396	805.3
2010	113,968	9,633	845.2	11,095	973.5
2011	113,386	10,668	940.9	12,337	1,088.1
2012	112,727	11,357	1,007.5	12,176	1,080.1
2013	113,753	11,852	1,041.9	11,876	1,044.0

Notes: Frequencies include all children reported with a birth defect who were born in Michigan. **Rates** are per 10,000 Michigan resident live births. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies and rates at one year and at two years serve to indicate the time from the birth of the child to the diagnosis of the condition.

Table 2-A
Birth Defects Cases by Time to Diagnosis and Birth Year
Michigan Resident Cases, 1992 - 2013

Year	Time to Diagnosis		
	All Cases	Under 1 Year	Between 1 & 2 Years
All Cases	278,997	222,227	29,532
2000-2009	130,695	104,679	14,696
1992-1999	95,581	73,105	9,564
2013	13,498	12,060	1,000
2012	13,687	11,612	1,321
2011	13,398	10,873	1,580
2010	12,138	9,898	1,371
2009	10,441	8,244	1,325
2008	11,828	9,929	964
2007	12,748	10,127	1,569
2006	14,687	12,017	1,574
2005	14,005	11,370	1,475
2004	13,017	10,167	1,627
2003	13,110	10,505	1,353
2002	13,407	10,705	1,459
2001	13,954	11,044	1,754
2000	13,498	10,571	1,596
1999	12,485	9,458	1,555
1998	11,673	8,635	1,453
1997	11,348	8,637	1,101
1996	11,176	8,583	1,017
1995	11,293	8,522	1,165
1994	12,401	9,737	991
1993	12,582	9,863	1,024
1992	12,623	9,670	1,258

Table 2-B
Average Birth Defects Cases Per Year, by Time to Diagnosis and Birth
Year
Michigan Resident Cases, 1992 - 2013

Year	Time to Diagnosis		
	All Cases	Under 1 Year	Between 1 & 2 Years
1992-2013	13,285.6	10,582.2	1,406.3
2000-2009	13,069.5	10,467.9	1,469.6
1992-1999	11,947.6	9,138.1	1,195.5

Notes:

Conditions are reportable if identified within the first two years of a child's life. The frequencies at one year and at two years serve to indicate the time from the birth of the child to the diagnosis of the condition.

Birth defect statistics sometimes reflect trends related to data reporting or new testing. See [Data Quality Considerations](#) for further details.

Table 3
Birth Defects Cases by Leading Diagnostic Groups and by Birth Year Interval
Michigan Resident Children 1997 through 2013
Three Year Moving Total Prevalence

Diagnostic Code Group	Birth Year Interval														
	1997 to 1999	1998 to 2000	1999 to 2001	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
Heart & Circulatory System	6,959	7,109	7,418	7,678	7,868	8,082	8,273	8,637	8,508	8,272	7,515	6,991	6,580	6,743	6,728
Congenital Anomalies	6,141	6,208	6,502	6,796	7,053	7,341	7,575	7,922	7,745	7,493	6,764	6,287	5,915	6,036	5,997
Other Conditions	1,526	1,635	1,556	1,434	1,334	1,246	1,189	1,251	1,333	1,377	1,278	1,237	1,176	1,293	1,241
Musculoskeletal System	5,128	5,577	6,186	6,648	6,689	6,403	6,376	6,695	7,018	6,420	5,350	4,790	5,037	5,976	6,519
Congenital Anomalies	5,120	5,572	6,181	6,643	6,680	6,394	6,369	6,692	7,013	6,415	5,346	4,788	5,032	5,970	6,513
Other Conditions	10	7	7	6	11	11	9	3	5	5	5	4	8	9	8
Genital & Urinary Systems	4,634	5,191	5,631	5,824	5,622	5,597	5,717	5,877	5,805	5,306	4,498	3,868	3,926	4,298	4,637
Congenital Anomalies	4,597	5,158	5,594	5,788	5,585	5,561	5,677	5,837	5,770	5,283	4,484	3,853	3,902	4,271	4,612
Other Conditions	64	58	63	73	84	99	103	103	79	63	56	65	74	73	65
Gastrointestinal System	4,399	4,521	4,752	4,788	4,597	4,300	4,214	4,313	4,272	4,141	3,711	3,395	3,176	3,300	3,363
Congenital Anomalies	2,122	2,223	2,336	2,372	2,255	2,120	2,026	2,168	2,167	2,171	1,986	1,818	1,675	1,622	1,606
Other Conditions	2,529	2,570	2,681	2,685	2,596	2,434	2,443	2,426	2,395	2,262	1,976	1,805	1,698	1,891	1,961
Eye	2,850	3,021	3,141	3,092	3,033	3,019	3,050	3,031	2,983	2,793	2,521	2,202	2,065	1,994	1,936
Congenital Anomalies	951	1,066	1,109	1,140	1,143	1,133	1,112	1,039	983	918	881	825	817	786	810
Other Conditions	2,045	2,125	2,213	2,146	2,096	2,082	2,121	2,148	2,156	2,023	1,786	1,506	1,381	1,332	1,257
Central Nervous System	2,039	2,145	2,297	2,318	2,317	2,328	2,343	2,397	2,306	2,223	2,026	1,926	1,852	1,859	1,820
Congenital Anomalies	1,259	1,344	1,474	1,539	1,550	1,580	1,596	1,657	1,600	1,534	1,403	1,332	1,278	1,278	1,259
Other Conditions	1,050	1,098	1,137	1,100	1,054	1,046	1,048	1,085	1,042	986	868	794	799	797	772
Maternal Exposures	302	384	454	476	420	404	433	491	504	544	572	669	842	1,105	1,347
Integument Anomalies	869	858	905	908	905	1,048	1,360	2,324	2,356	3,082	3,009	3,382	3,092	2,700	3,385
Respiratory System Anomalies	1,111	1,321	1,574	1,767	1,988	2,056	2,186	2,468	2,657	2,393	1,741	1,332	1,316	1,458	1,430
Other Reportable Conditions	4,126	4,787	5,738	6,403	6,568	6,261	6,235	6,013	5,667	5,136	4,646	6,303	8,233	10,535	11,069
One or More Reportable Conditions	25,317	27,274	29,608	30,847	30,472	29,761	30,547	32,437	32,463	31,020	27,371	27,149	28,226	31,582	33,825

Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident of Michigan at the time of birth. This enables the calculation of birth defects prevalence rates. **Diagnoses** are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Conditions are reportable if identified within the first two years of a child's life. The frequencies at one year and at two years serve to indicate the time from the birth of the child to the diagnosis of the condition. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Table 4-A
Deaths Among Children with Birth Defects by Time to Death and Birth Year
Michigan Birth Defects Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Birth Year																			
	All Deaths	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	8,371	537	504	533	508	515	538	512	472	509	466	464	430	360	391	391	295	299	311	336
Under 1 Year	6,858	373	355	400	391	391	415	400	400	440	381	390	369	299	343	347	264	270	294	336
1 to 2 Years	509	36	36	33	25	44	35	41	27	31	43	22	19	26	19	19	17	19	17	---
2 to 3 Years	232	16	19	23	14	19	16	10	8	12	13	14	10	15	11	14	8	10	---	---
3 to 4 Years	128	10	9	13	7	13	12	6	7	3	9	9	6	4	10	4	6	---	---	---
4 to 5 Years	91	9	12	9	5	6	8	7	3	4	2	4	4	8	3	7	---	---	---	---
5 to 6 Years	94	8	9	4	8	7	13	6	4	1	6	8	9	6	5	---	---	---	---	---
6 to 7 Years	73	9	7	5	12	3	9	4	4	3	3	6	6	2	---	---	---	---	---	---
7 to 8 Years	72	13	4	9	6	5	4	4	5	4	7	4	7	---	---	---	---	---	---	---
8 to 9 Years	54	6	4	6	6	3	7	7	1	5	2	7	---	---	---	---	---	---	---	---
9 to 10 Years	36	8	6	2	2	7	4	2	2	3	-	---	---	---	---	---	---	---	---	---
10 to 11 Year	37	6	1	3	5	4	3	7	5	3	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	40	6	4	2	3	4	4	11	6	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	33	7	2	3	5	4	5	7	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	27	2	8	1	8	5	3	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	25	7	6	7	5	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	27	7	7	7	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	17	5	6	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	18	9	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Death frequencies are the total deaths by age interval among children born with a birth defect who were born in Michigan and whose mother was a resident at the time of the child's birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.
Tripple dashes (---) indicate category not applicable.

Table 4-B
Deaths Among Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Birth Year																			
	All Deaths	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	23,446	1,703	1,652	1,592	1,476	1,390	1,469	1,394	1,315	1,320	1,233	1,216	1,107	1,188	1,033	1,013	861	850	838	796
Under 1 Year	18,961	1,109	1,078	1,104	1,109	1,085	1,163	1,094	1,070	1,120	1,018	1,033	949	1,042	925	902	788	778	798	796
1 to 2 Years	1,306	114	120	124	90	84	80	87	69	71	87	52	52	62	39	48	37	50	40	---
2 to 3 Years	606	79	53	59	33	37	29	31	30	34	30	30	26	33	26	33	21	22	---	---
3 to 4 Years	408	42	34	36	27	32	28	25	31	23	22	24	21	15	23	10	15	---	---	---
4 to 5 Years	291	25	26	28	19	21	23	26	13	15	15	16	17	15	12	20	---	---	---	---
5 to 6 Years	264	21	30	20	21	19	28	22	14	11	16	22	18	14	8	---	---	---	---	---
6 to 7 Years	215	25	26	24	28	10	17	16	17	10	10	12	13	7	---	---	---	---	---	---
7 to 8 Years	167	20	14	20	12	15	11	16	13	10	14	11	11	---	---	---	---	---	---	---
8 to 9 Years	152	14	12	22	15	11	16	13	11	13	9	16	---	---	---	---	---	---	---	---
9 to 10 Years	138	26	15	13	15	15	14	11	9	8	12	---	---	---	---	---	---	---	---	---
10 to 11 Year	125	17	14	18	15	12	10	16	18	5	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	139	17	24	10	17	14	17	20	20	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	113	19	22	13	11	16	15	17	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	103	19	21	9	23	13	18	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	101	28	29	21	17	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	119	33	31	31	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	120	39	41	40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	118	56	62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Death frequencies include deaths by age interval among all children who were born in Michigan and whose mother was a resident at the time of the child's birth. This enables the calculation of mortality rates among these children that are comparable with similar rates for children with birth defects. Tripple dashes (---) indicate category not applicable.

Table 5-A
Mortality Rates Among Children with Birth Defects by Time to Death and Birth Year
Michigan Birth Defects Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Birth Year																			
	Mortality Rate	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	44.9	65.7	61.0	64.9	61.7	57.0	52.9	48.4	45.9	51.9	47.2	41.9	36.8	36.5	40.6	48.8	30.6	28.0	27.4	28.3
Under 1 Year	36.8	45.6	43.0	48.7	47.5	43.3	40.8	37.8	38.9	44.9	38.6	35.2	31.6	30.3	35.6	43.3	27.4	25.3	25.9	28.3
1 to 2 Years	2.7	4.4	4.4	4.0	3.0	4.9	3.4	3.9	2.6	3.2	4.4	2.0	1.6	2.6	2.0	2.4	1.8	1.8	1.5	---
2 to 3 Years	1.2	2.0	2.3	2.8	1.7	2.1	1.6	0.9	0.8	1.2	1.3	1.3	0.9	1.5	1.1	1.7	0.8	0.9	---	---
3 to 4 Years	0.7	1.2	1.1	1.6	0.9	1.4	1.2	0.6	0.7	*	0.9	0.8	0.5	*	1.0	*	0.6	---	---	---
4 to 5 Years	0.5	1.1	1.5	1.1	*	0.7	0.8	0.7	*	*	*	*	*	0.8	*	0.9	---	---	---	---
5 to 6 Years	0.5	1.0	1.1	*	1.0	0.8	1.3	0.6	*	*	0.6	0.7	0.8	0.6	*	---	---	---	---	---
6 to 7 Years	0.4	1.1	0.8	*	1.5	*	0.9	*	*	*	*	0.5	0.5	*	---	---	---	---	---	---
7 to 8 Years	0.4	1.6	*	1.1	0.7	*	*	*	*	*	0.7	*	0.6	---	---	---	---	---	---	---
8 to 9 Years	0.3	0.7	*	0.7	0.7	*	0.7	0.7	*	*	*	0.6	---	---	---	---	---	---	---	---
9 to 10 Years	0.2	1.0	0.7	*	*	0.8	*	*	*	*	-	---	---	---	---	---	---	---	---	---
10 to 11 Year	0.2	0.7	*	*	*	*	*	0.7	*	*	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	0.2	0.7	*	*	*	*	*	1.0	0.6	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	0.2	0.9	*	*	*	*	*	0.7	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	0.1	*	1.0	*	1.0	*	*	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	0.1	0.9	0.7	0.9	*	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	0.1	0.9	0.8	0.9	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	0.1	*	0.7	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	0.1	1.1	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Rates are per 1,000 cases. Birth defect mortality rates divides all deaths of children reported with a birth defect and dying within the age interval, by the total number of births with reported birth defects and born by Michigan resident mothers in that birth year. Children who died were born in Michigan and their mother was a resident at time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Symbols: --- Category not applicable. • * Figure does not meet standards of reliability or precision. • 0.0 Quantity more than zero but less than 0.05.

Table 5-B
Mortality Rates Among All Michigan Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Birth Year																			
	Mortality Rate	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	9.9	12.8	12.5	12.0	11.2	10.5	10.9	10.6	10.3	10.2	9.6	9.6	8.8	9.6	8.7	8.8	7.6	7.6	7.5	7.1
Under 1 Year	8.0	8.3	8.2	8.3	8.4	8.2	8.6	8.3	8.4	8.7	7.9	8.2	7.5	8.5	7.8	7.8	7.0	6.9	7.1	7.1
1 to 2 Years	0.6	0.9	0.9	0.9	0.7	0.6	0.6	0.7	0.5	0.5	0.7	0.4	0.4	0.5	0.3	0.4	0.3	0.4	0.4	---
2 to 3 Years	0.3	0.6	0.4	0.4	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	---	---
3 to 4 Years	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	---	---	---
4 to 5 Years	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	---	---	---	---
5 to 6 Years	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	---	---	---	---	---
6 to 7 Years	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---
7 to 8 Years	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---
8 to 9 Years	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---	---
9 to 10 Years	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---	---	---
10 to 11 Year	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	0.0	0.1	0.2	0.1	0.2	0.1	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	0.0	0.2	0.2	0.2	0.1	0.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	0.1	0.2	0.2	0.2	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	0.1	0.3	0.3	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	0.0	0.4	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Rates are per 1,000 cases. **Mortality rates** divides all childhood deaths within the age interval by the total number of births born by Michigan resident mothers in that birth year. Children who died were born in Michigan and their mother was a resident at time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Symbols: --- Category not applicable. • * Figure does not meet standards of reliability or precision. • 0.0 Quantity more than zero but less than 0.05.

Table 6-A
Cumulative Deaths Among Children with Birth Defects by Time to Death and Birth Year
Michigan Birth Defects Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Birth Year																			
	All Years	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	8,371	537	504	533	508	515	538	512	472	509	466	464	430	360	391	391	295	299	311	336
Under 1 Year	6,858	373	355	400	391	391	415	400	400	440	381	390	369	299	343	347	264	270	294	336
1 to 2 Years	7,367	409	391	433	416	435	450	441	427	471	424	412	388	325	362	366	281	289	311	---
2 to 3 Years	7,599	425	410	456	430	454	466	451	435	483	437	426	398	340	373	380	289	299	---	---
3 to 4 Years	7,727	435	419	469	437	467	478	457	442	486	446	435	404	344	383	384	295	---	---	---
4 to 5 Years	7,818	444	431	478	442	473	486	464	445	490	448	439	408	352	386	391	---	---	---	---
5 to 6 Years	7,912	452	440	482	450	480	499	470	449	491	454	447	417	358	391	---	---	---	---	---
6 to 7 Years	7,985	461	447	487	462	483	508	474	453	494	457	453	423	360	---	---	---	---	---	---
7 to 8 Years	8,057	474	451	496	468	488	512	478	458	498	464	457	430	---	---	---	---	---	---	---
8 to 9 Years	8,111	480	455	502	474	491	519	485	459	503	466	464	---	---	---	---	---	---	---	---
9 to 10 Years	8,147	488	461	504	476	498	523	487	461	506	466	---	---	---	---	---	---	---	---	---
10 to 11 Year	8,184	494	462	507	481	502	526	494	466	509	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	8,224	500	466	509	484	506	530	505	472	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	8,257	507	468	512	489	510	535	512	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	8,284	509	476	513	497	515	538	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	8,309	516	482	520	502	515	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	8,336	523	489	527	508	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	8,353	528	495	533	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	8,371	537	504	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Death frequencies are the total deaths by age interval among children born with a birth defect who were born in Michigan and whose mother was a resident at the time of the child's birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. Tripple dashes (---) indicate category not applicable.

Table 6-B
Cumulative Deaths Among Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Birth Year																			
	All Years	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	23,446	1,703	1,652	1,592	1,476	1,390	1,469	1,394	1,315	1,320	1,233	1,216	1,107	1,188	1,033	1,013	861	850	838	796
Under 1 Year	18,961	1,109	1,078	1,104	1,109	1,085	1,163	1,094	1,070	1,120	1,018	1,033	949	1,042	925	902	788	778	798	796
1 to 2 Years	20,267	1,223	1,198	1,228	1,199	1,169	1,243	1,181	1,139	1,191	1,105	1,085	1,001	1,104	964	950	825	828	838	---
2 to 3 Years	20,873	1,302	1,251	1,287	1,232	1,206	1,272	1,212	1,169	1,225	1,135	1,115	1,027	1,137	990	983	846	850	---	---
3 to 4 Years	21,281	1,344	1,285	1,323	1,259	1,238	1,300	1,237	1,200	1,248	1,157	1,139	1,048	1,152	1,013	993	861	---	---	---
4 to 5 Years	21,572	1,369	1,311	1,351	1,278	1,259	1,323	1,263	1,213	1,263	1,172	1,155	1,065	1,167	1,025	1,013	---	---	---	---
5 to 6 Years	21,836	1,390	1,341	1,371	1,299	1,278	1,351	1,285	1,227	1,274	1,188	1,177	1,083	1,181	1,033	---	---	---	---	---
6 to 7 Years	22,051	1,415	1,367	1,395	1,327	1,288	1,368	1,301	1,244	1,284	1,198	1,189	1,096	1,188	---	---	---	---	---	---
7 to 8 Years	22,218	1,435	1,381	1,415	1,339	1,303	1,379	1,317	1,257	1,294	1,212	1,200	1,107	---	---	---	---	---	---	---
8 to 9 Years	22,370	1,449	1,393	1,437	1,354	1,314	1,395	1,330	1,268	1,307	1,221	1,216	---	---	---	---	---	---	---	---
9 to 10 Years	22,508	1,475	1,408	1,450	1,369	1,329	1,409	1,341	1,277	1,315	1,233	---	---	---	---	---	---	---	---	---
10 to 11 Year	22,633	1,492	1,422	1,468	1,384	1,341	1,419	1,357	1,295	1,320	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	22,772	1,509	1,446	1,478	1,401	1,355	1,436	1,377	1,315	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	22,885	1,528	1,468	1,491	1,412	1,371	1,451	1,394	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	22,988	1,547	1,489	1,500	1,435	1,384	1,469	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	23,089	1,575	1,518	1,521	1,452	1,390	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	23,208	1,608	1,549	1,552	1,476	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	23,328	1,647	1,590	1,592	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	23,446	1,703	1,652	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Death frequencies include deaths by age interval among all children who were born in Michigan and whose mother was a resident at the time of the child's birth. This enables the calculation of mortality rates among these children that are comparable with similar rates for children with birth defects. Tripple dashes (---) indicate category not applicable.

Table 7-A
Cumulative Mortality Rates Among Children with
Birth Defects by Time to Death and Birth Year
Michigan Birth Defects Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Adjusted Cumulative Rate	Birth Year																		
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	50.5	65.5	61.0	64.9	61.7	57.0	52.9	48.4	45.9	51.9	47.2	41.9	36.8	36.5	40.6	48.8	30.6	28.0	27.4	28.3
Under 1 Year	36.8	45.6	43.0	48.7	47.5	43.3	40.8	37.8	38.9	44.9	38.6	35.2	31.6	30.3	35.6	43.3	27.4	25.3	25.9	28.3
1 to 2 Years	39.7	50.0	47.4	52.7	50.5	48.2	44.2	41.7	41.5	48.0	42.9	37.2	33.2	33.0	37.6	45.7	29.2	27.1	27.4	---
2 to 3 Years	41.1	52.0	49.7	55.5	52.2	50.3	45.8	42.7	42.3	49.3	44.3	38.4	34.1	34.5	38.7	47.4	30.0	28.0	---	---
3 to 4 Years	42.0	53.2	50.8	57.1	53.1	51.7	47.0	43.2	43.0	49.6	45.2	39.3	34.6	34.9	39.8	47.9	30.6	---	---	---
4 to 5 Years	42.6	54.3	52.2	58.2	53.7	52.4	47.7	43.9	43.3	50.0	45.4	39.6	34.9	35.7	40.1	48.8	---	---	---	---
5 to 6 Years	43.3	55.3	53.3	58.7	54.7	53.2	49.0	44.5	43.6	50.1	46.0	40.3	35.7	36.3	40.6	---	---	---	---	---
6 to 7 Years	43.9	56.4	54.1	59.3	56.1	53.5	49.9	44.8	44.0	50.4	46.3	40.9	36.2	36.5	---	---	---	---	---	---
7 to 8 Years	44.5	58.0	54.6	60.4	56.8	54.0	50.3	45.2	44.5	50.8	47.0	41.2	36.8	---	---	---	---	---	---	---
8 to 9 Years	45.0	58.7	55.1	61.1	57.6	54.4	51.0	45.9	44.6	51.3	47.2	41.9	---	---	---	---	---	---	---	---
9 to 10 Years	45.4	59.7	55.8	61.3	57.8	55.2	51.4	46.1	44.8	51.6	47.2	---	---	---	---	---	---	---	---	---
10 to 11 Year	45.9	60.4	56.0	61.7	58.4	55.6	51.7	46.7	45.3	51.9	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	46.4	61.1	56.4	62.0	58.8	56.0	52.1	47.8	45.9	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	46.9	62.0	56.7	62.3	59.4	56.5	52.6	48.4	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	47.5	62.2	57.7	62.4	60.4	57.0	52.9	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	48.1	63.1	58.4	63.3	61.0	57.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	48.9	64.0	59.2	64.1	61.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	49.6	64.6	60.0	64.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	50.7	65.7	61.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Rates are per 1,000 Live Births. **Birth defect cumulative mortality rates** are calculated by dividing all deaths of children reported with a birth defect and dying within or before the age interval, by the total number of births with reported birth defects and born by Michigan resident mothers in that birth year. Children who died were born in Michigan and their mother was a resident at time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.
 Tripple dashes (---) indicate category not applicable.

Table 7-B
Cumulative Mortality Rates Among All Michigan Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by January 10, 2016
Live Births during 1995 through 2013

Time to Death	Adjusted Cumulative Rate	Birth Year																		
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All Ages	11.4	12.8	12.5	12.0	11.2	10.5	10.9	10.6	10.3	10.2	9.6	9.6	8.8	9.6	8.7	8.8	7.6	7.6	7.5	7.1
Under 1 Year	8.0	8.3	8.2	8.3	8.4	8.2	8.6	8.3	8.4	8.7	7.9	8.2	7.5	8.5	7.8	7.8	7.0	6.9	7.1	7.1
1 to 2 Years	8.6	9.2	9.1	9.3	9.1	8.8	9.2	9.0	8.9	9.2	8.6	8.6	7.9	9.0	8.1	8.2	7.3	7.4	7.5	---
2 to 3 Years	8.8	9.8	9.5	9.7	9.3	9.1	9.4	9.2	9.1	9.5	8.8	8.8	8.1	9.2	8.3	8.5	7.5	7.6	---	---
3 to 4 Years	9.1	10.1	9.7	10.0	9.5	9.4	9.7	9.4	9.4	9.6	9.0	9.0	8.3	9.4	8.5	8.6	7.6	---	---	---
4 to 5 Years	9.2	10.3	9.9	10.2	9.7	9.5	9.8	9.6	9.5	9.8	9.1	9.1	8.4	9.5	8.6	8.8	---	---	---	---
5 to 6 Years	9.3	10.4	10.2	10.4	9.8	9.7	10.0	9.7	9.6	9.8	9.3	9.3	8.6	9.6	8.7	---	---	---	---	---
6 to 7 Years	9.5	10.6	10.3	10.5	10.0	9.7	10.2	9.9	9.7	9.9	9.3	9.4	8.7	9.6	---	---	---	---	---	---
7 to 8 Years	9.6	10.8	10.5	10.7	10.1	9.9	10.2	10.0	9.8	10.0	9.4	9.5	8.8	---	---	---	---	---	---	---
8 to 9 Years	9.7	10.9	10.5	10.9	10.2	9.9	10.4	10.1	9.9	10.1	9.5	9.6	---	---	---	---	---	---	---	---
9 to 10 Years	9.8	11.1	10.7	11.0	10.3	10.1	10.5	10.2	10.0	10.2	9.6	---	---	---	---	---	---	---	---	---
10 to 11 Year	9.9	11.2	10.8	11.1	10.5	10.1	10.5	10.3	10.1	10.2	---	---	---	---	---	---	---	---	---	---
11 to 12 Year	10.0	11.3	10.9	11.2	10.6	10.2	10.7	10.4	10.3	---	---	---	---	---	---	---	---	---	---	---
12 to 13 Year	10.1	11.5	11.1	11.3	10.7	10.4	10.8	10.6	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 Year	10.3	11.6	11.3	11.3	10.8	10.5	10.9	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 Year	10.4	11.8	11.5	11.5	11.0	10.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 Year	10.7	12.1	11.7	11.7	11.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 Year	11.0	12.4	12.0	12.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 Year	11.4	12.8	12.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes: Rates are per 1,000 Live Births. **Mortality rates** are calculated by dividing all childhood deaths within or before the age interval by the total number of births born by Michigan resident mothers in that birth year. Children who died were born in Michigan and their mother was a resident at time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.
 Tripple dashes (---) indicate category not applicable.

**Figure 1. Crude Cumulative Mortality Rates,
Michigan Children with a Reportable Condition versus All Children
Michigan Births between 1995-2013**

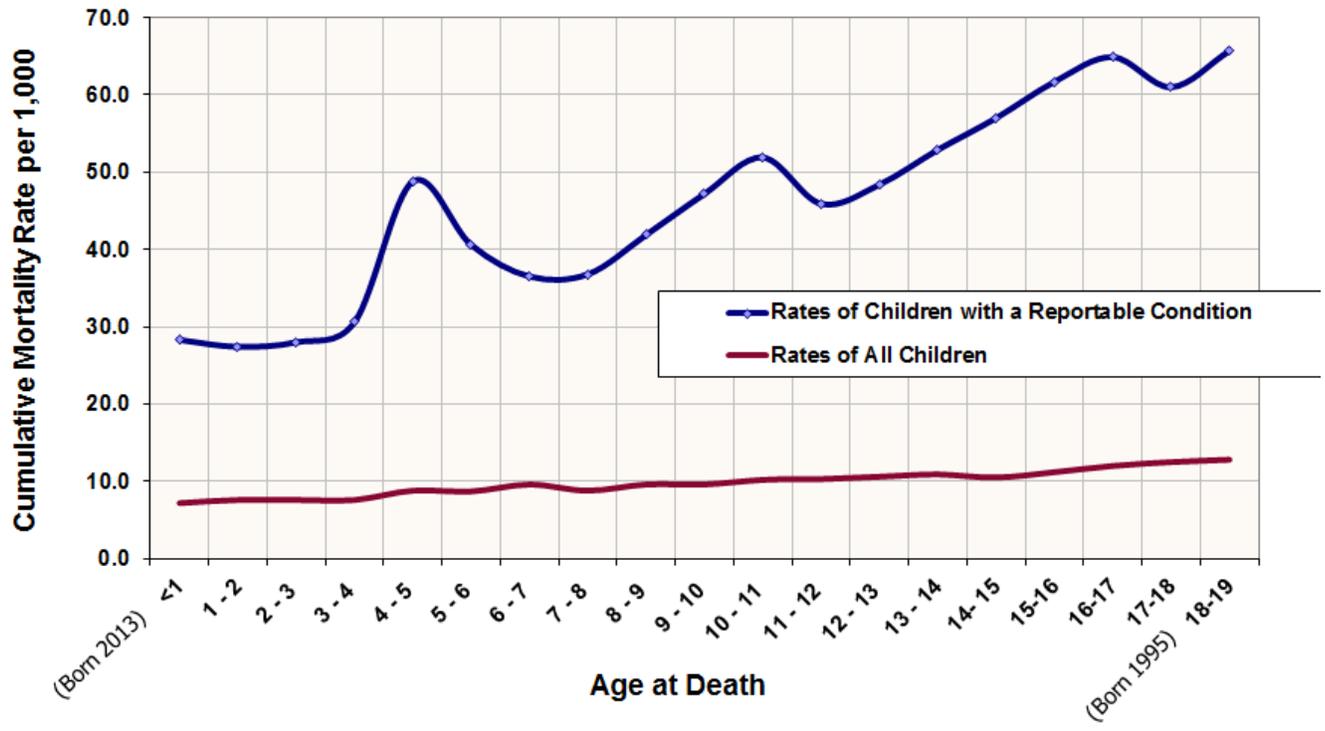
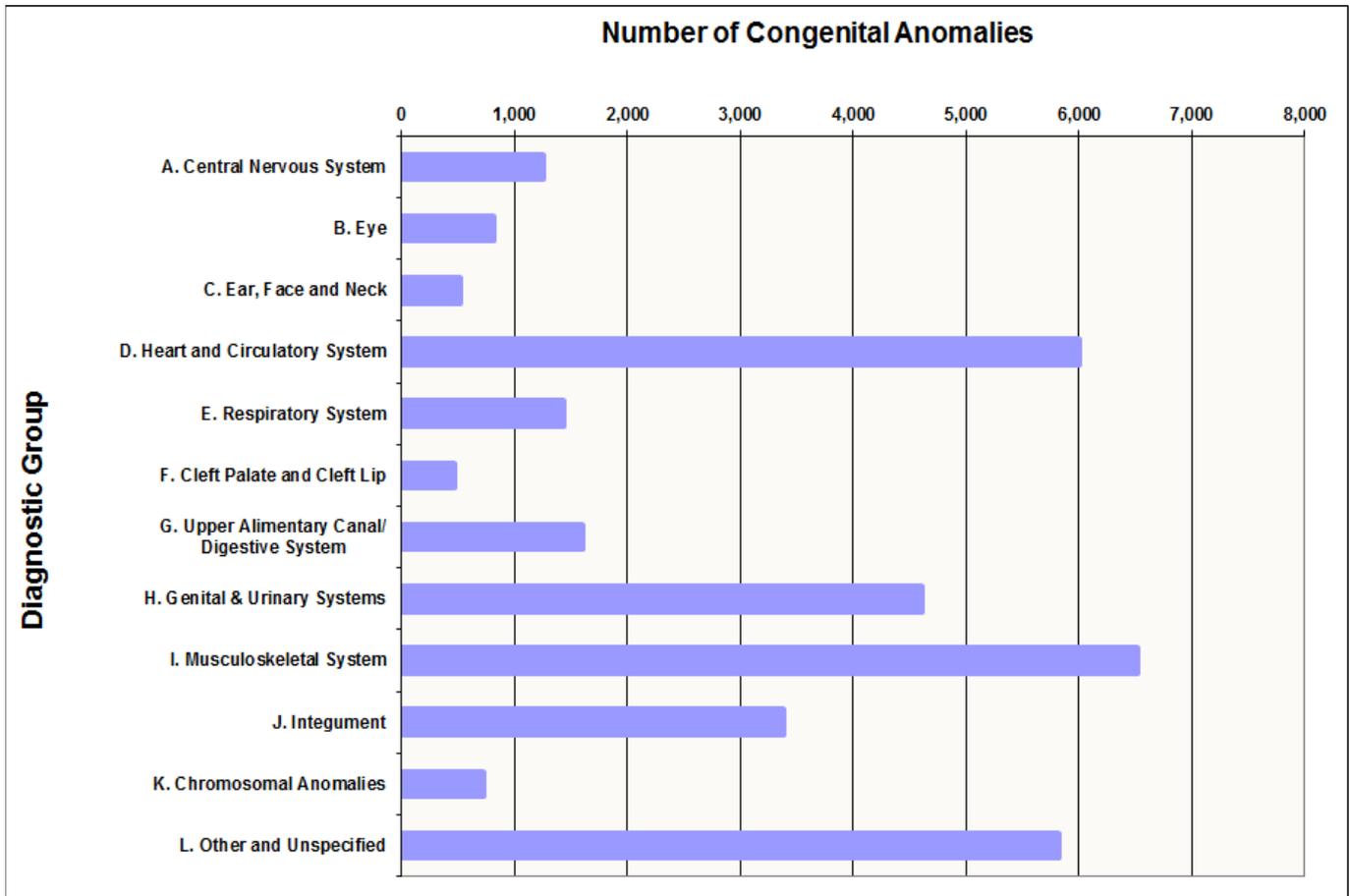


Figure 2-A
Total Congenital Anomalies by Summary Diagnostic Code Group, 2011–2013,
Michigan Resident Children Born in Michigan
Cases Diagnosed within One Year from Birth



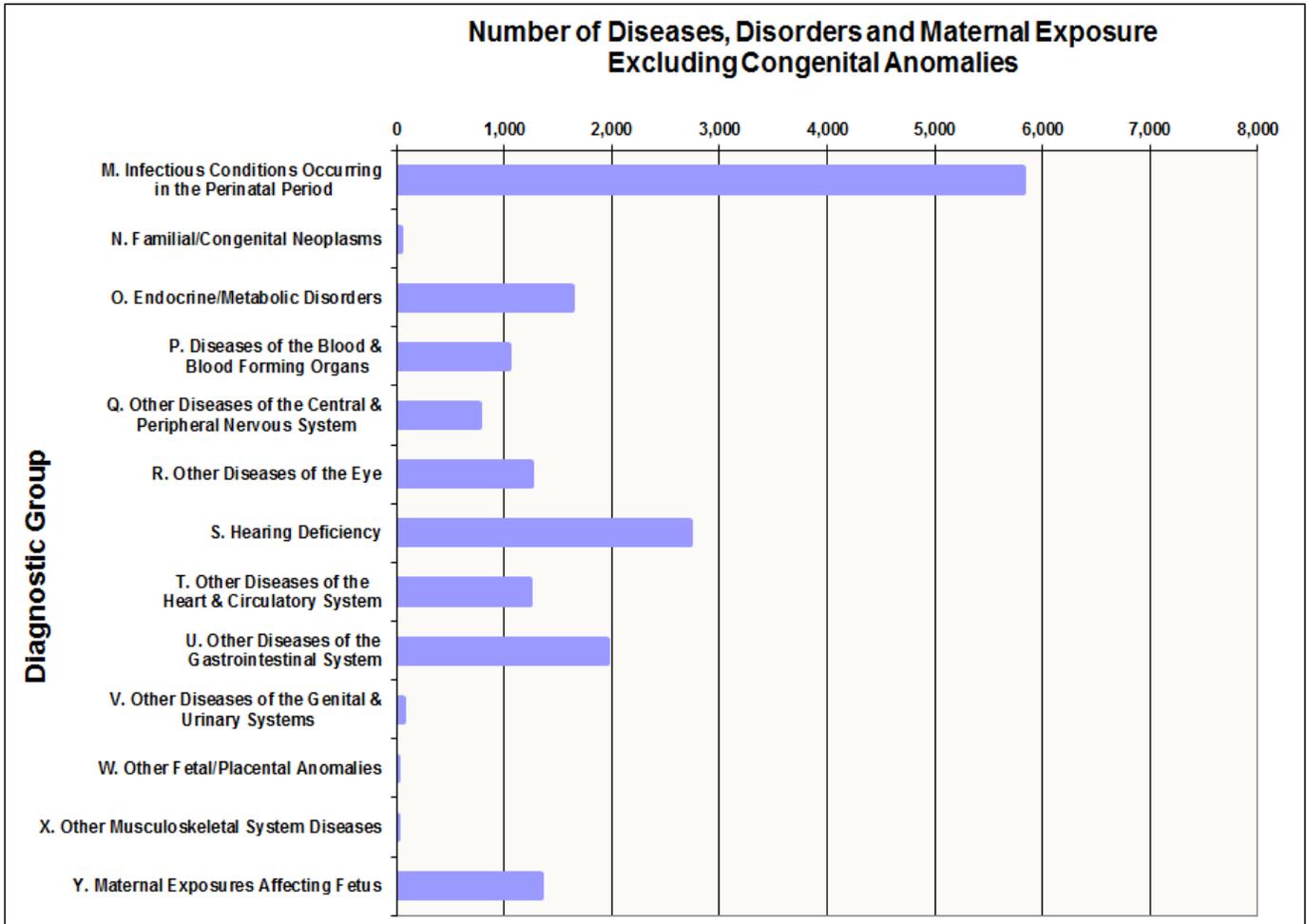
Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Figure 2-B
Total Diseases, Disorders and Maternal Exposures by
Summary Diagnostic Code Group, 2011–2013,
Michigan Resident Children Born in Michigan
Cases Diagnosed within One Year from Birth



Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 8
Birth Defects by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
A Congenital Anomalies of the Central Nervous System	6,783	492	520	527	503	550	4,191	543	564	493	477	433	422	423	433	403
B Congenital Anomalies of the Eye	4,504	378	375	387	381	365	2,618	366	308	309	301	271	253	293	240	277
C Congenital Anomalies of the Ear, Face & Neck	2,772	220	235	244	216	200	1,657	254	192	172	200	152	172	173	162	180
D Congenital Anomalies of the Heart & Circulatory System	31,780	2,127	2,283	2,386	2,384	2,571	20,029	2,620	2,731	2,394	2,368	2,002	1,917	1,996	2,123	1,878
E Congenital Anomalies of the Respiratory System	8,627	539	613	615	760	681	5,419	745	1,042	870	481	390	461	465	532	433
F Cleft Palate & Cleft Lip	2,676	199	228	204	220	195	1,630	203	227	196	182	200	157	167	157	141
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	9,309	773	825	774	656	690	5,591	680	798	689	684	613	521	541	560	505
H Congenital Anomalies of the Genital and Urinary Systems	23,716	2,040	1,880	1,868	1,837	1,856	14,235	1,984	1,997	1,789	1,497	1,198	1,158	1,546	1,567	1,499
I Congenital Anomalies of the Musculoskeletal System	29,064	2,095	2,261	2,287	2,132	1,975	18,314	2,262	2,455	2,296	1,664	1,386	1,738	1,908	2,324	2,281
J Congenital Anomalies of the Integument	10,775	302	302	304	299	445	9,123	616	1,263	477	1,342	1,190	850	1,052	798	1,535
K Chromosomal Anomalies	3,816	280	290	278	284	288	2,396	291	299	261	280	267	266	261	265	206
L Other and Unspecified Congenital Anomalies	12,903	626	754	644	707	637	9,535	601	466	370	227	178	1,868	1,796	1,989	2,040

Table 8
Birth Defects by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
Infectious Conditions																
M Occurring in the Perinatal Period	4,959	626	754	644	707	637	1,591	165	201	136	246	182	198	213	145	105
N Familial/Congenital Neoplasms	184	15	14	13	15	11	116	19	19	16	15	5	8	13	11	10
O Endocrine/Metabolic Disorders	6,701	500	457	469	429	397	4,449	488	523	423	506	396	488	486	621	518
P Diseases of the Blood & Blood Forming Organs	3,956	245	221	259	260	242	2,729	311	293	249	285	234	308	346	358	345
Q Other Diseases of the Central and Peripheral Nervous System	4,392	379	359	362	333	351	2,608	364	370	308	308	252	234	313	250	209
R Other Diseases of the Eye	8,436	733	702	711	683	688	4,919	750	710	696	617	473	416	492	424	341
S Hearing Deficiency	7,952	400	577	612	469	416	5,478	515	477	402	443	391	520	879	901	950
T Other Diseases of the Heart & Circulatory System	6,028	528	443	463	428	355	3,811	406	490	437	450	391	396	389	508	344
U Other Diseases of the Gastrointestinal System	10,440	899	946	840	810	784	6,161	849	793	753	716	507	582	609	700	652
V Other Diseases of the Genital and Urinary Systems	353	22	23	28	33	38	209	32	33	14	16	26	23	25	25	15
W Other Fetal/Placental Anomalies	118	-	-	2	2	2	112	107	2	1	-	-	1	1	-	-
X Other Musculoskeletal System Diseases	31	2	1	3	7	1	17	1	1	3	1	1	2	5	2	1
Y Maternal Exposures Affecting Fetus	3,249	166	159	151	110	143	2,520	180	168	156	220	196	253	393	459	495
One or More Reportable Diagnosis	143,822	10,118	10,506	10,223	9,743	9,795	93,437	11,009	11,633	9,821	9,566	7,984	9,599	10,643	11,340	11,842

Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defect prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Columns do not add to total live births diagnosed with birth defects. Some cases include diagnosis with multiple birth defects, and each birth defect diagnosis was counted in each appropriate grouping.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth**

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
A Congenital Anomalies of the Central Nervous System	6,783	492	520	527	503	550	4,191	543	564	493	477	433	422	423	433	403
A01 Anencephalus	179	19	7	15	16	19	103	9	11	6	16	14	9	11	11	16
A02 Spina Bifida w/o Anencephaly	724	46	68	45	49	60	456	63	68	58	64	39	50	47	44	23
A03 Hydrocephalus w/o Spina Bifida	1,597	138	154	133	122	135	915	128	123	129	120	101	90	77	78	69
A04 Encephalocele	175	16	12	13	14	14	106	22	13	13	11	10	4	9	15	9
A05 Microcephalus	1,659	124	118	139	119	126	1,033	131	147	131	84	95	114	112	98	121
A99 All Other CNS Anomalies	3,697	228	258	274	286	300	2,351	303	306	257	280	248	226	249	272	210
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
B Congenital Anomalies of the Eye	4,504	378	375	387	381	365	2,618	366	308	309	301	271	253	293	240	277
B01 Anophthalmos/Microphthalmos	284	21	29	34	28	23	149	25	22	22	17	12	13	19	9	10
B02 Congenital Cataract	391	39	33	38	37	31	213	38	20	27	30	14	27	30	16	11
B03 Aniridia	47	4	3	2	5	6	27	5	2	4	3	-	4	3	3	3
B99 All Other Congenital Anomalies of the Eye	4,116	347	344	344	343	333	2,405	331	289	276	273	256	226	262	228	264
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
C Congenital Anomalies of the Ear, Face & Neck	2,772	220	235	244	216	200	1,657	254	192	172	200	152	172	173	162	180
C01 Anotia/Microtia	228	22	21	20	24	19	122	14	14	14	15	12	18	17	12	6
C99 All Other Congenital Anomalies of the Ear, Face & Neck	2,696	214	232	235	213	193	1,609	251	190	165	192	147	164	168	153	179

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
D Congenital Anomalies of the Heart & Circulatory System	31,780	2,127	2,283	2,386	2,384	2,571	20,029	2,620	2,731	2,394	2,368	2,002	1,917	1,996	2,123	1,878
D01 Common Truncus	228	11	21	12	25	15	144	17	18	15	21	6	22	17	16	12
D02 Transposition of Great Vessels	886	68	59	65	57	61	576	84	73	66	61	64	67	53	60	48
D03 Tetralogy of Fallot	933	75	68	70	81	56	583	69	75	62	79	49	70	72	61	46
D04 Ventricular Septal Defect	7,135	541	533	558	541	551	4,411	592	572	527	546	410	431	446	511	376
D05 Atrial Septal Defect	14,843	816	863	972	990	1,120	10,082	1,240	1,291	1,074	1,159	997	937	1,142	1,251	991
D06 Endocardial Cushion Defect	948	65	74	75	87	77	570	71	81	64	67	53	59	65	67	43
D07 Pulmonary Valve Atresia & Stenosis	1,896	144	163	134	174	130	1,151	178	167	148	136	92	121	112	125	72
D08 Tricuspid Valve Atresia & Stenosis	250	17	29	26	22	10	146	23	11	19	22	11	18	16	16	10
D09 Ebstein's Anomaly	235	35	47	37	18	10	88	13	11	7	12	7	9	9	13	7
D10 Aortic Valve Stenosis	413	43	28	31	36	37	238	34	31	31	28	21	20	27	27	19
D11 Hypoplastic Left Heart Syndrome	733	46	68	56	55	53	455	63	48	54	49	56	36	43	59	47
D12 Patent Ductus Arteriosus	9,459	559	653	666	758	754	6,069	824	874	721	756	595	586	680	639	394
D13 Coarctation of Aorta	1,075	82	67	86	84	78	678	79	94	87	88	51	64	69	86	60
D14 Pulmonary Artery Anomalies	3,054	252	295	298	279	246	1,684	301	306	251	249	226	195	118	20	18
D99 All Other Congenital Anomalies of the Heart and Circulatory System	12,859	892	919	1,026	1,038	1,201	7,783	1,035	1,189	1,009	942	778	752	690	742	646
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
E Congenital Anomalies of the Respiratory System	8,627	539	613	615	760	681	5,419	745	1,042	870	481	390	461	465	532	433
E01 Lung Agenesis/Hypoplasia	1,198	86	76	85	154	115	682	96	76	64	75	85	109	73	61	43
E02 Choanal Atresia	298	20	28	29	18	20	183	24	18	16	17	20	23	19	21	25
E99 All Other Congenital Anomalies of the Respiratory System	7,512	454	534	540	624	576	4,784	665	981	809	414	304	357	396	474	384
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
F Cleft Palate & Cleft Lip	2,676	199	228	204	220	195	1,630	203	227	196	182	200	157	167	157	141
F01 Cleft Palate	932	70	85	70	71	67	569	77	85	75	68	76	41	45	48	54
F02 Cleft Lip w & w/o Cleft Palate	1,744	129	143	134	149	128	1,061	126	142	121	114	124	116	122	109	87

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	9,309	773	825	774	656	690	5,591	680	798	689	684	613	521	541	560	505
G01 Esophageal Atresia/ Tracheoesophageal Fistula	477	34	46	45	46	46	260	43	35	40	29	14	28	27	24	20
G02 Rectal and Large Intestinal Atresia/Stenosis	829	74	62	65	60	64	504	61	75	55	54	46	56	59	46	52
G03 Pyloric Stenosis	2,943	253	307	260	207	203	1,713	195	234	207	237	217	155	156	176	136
G04 Hirshsprung's Disease (congenital megacolon)	541	44	50	42	41	42	322	36	38	34	35	24	48	42	33	32
G05 Biliary Atresia	197	16	15	10	16	18	122	12	12	11	15	14	12	18	16	12
G99 Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	4,944	405	390	402	339	369	3,039	383	444	381	359	332	261	291	307	281
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
H Congenital Anomalies of the Genital and Urinary Systems	23,716	2,040	1,880	1,868	1,837	1,856	14,235	1,984	1,997	1,789	1,497	1,198	1,158	1,546	1,567	1,499
H01 Renal Agenesis/Hypoplasia	966	99	74	84	77	64	568	69	60	76	82	49	51	51	60	70
H02 Bladder Exstrophy	51	3	10	6	5	2	25	6	4	1	3	3	2	1	-	5
H03 Obstructive Genitourinary Defects	3,876	263	287	295	301	300	2,430	325	308	292	274	200	200	270	306	255
H04 Hypospadias & Epispadias	5,444	452	394	404	390	374	3,430	475	337	364	432	345	344	442	356	335
H99 All Other Congenital Anomalies of the Genital & Urinary Systems	19,358	1,675	1,558	1,542	1,544	1,584	11,455	1,632	1,744	1,522	1,134	905	866	1,172	1,287	1,193

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
I Congenital Anomalies of the Musculoskeletal System	29,064	2,095	2,261	2,287	2,132	1,975	18,314	2,262	2,455	2,296	1,664	1,386	1,738	1,908	2,324	2,281
I01 Upper Limb Reduction Deformities	429	40	35	35	34	27	258	27	27	36	36	26	30	31	22	23
I02 Lower Limb Reduction Deformities	320	23	29	26	24	25	193	29	29	21	18	23	18	17	24	14
I03 Gastroschisis/Omphalocele	1,061	51	68	43	68	76	755	77	93	82	72	70	98	81	87	95
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	21	19	27	16
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	60	55	42	38
I03c Other & Unspecified Abdominal Wall Anomalies	806	51	67	43	67	76	502	77	93	82	70	58	33	18	26	45
I04 Congenital Hip Dislocation	2,033	199	215	206	168	147	1,098	119	164	100	145	138	117	133	108	74
I05 Diaphragmatic Hernia	558	39	43	34	49	48	345	37	52	42	38	45	41	37	27	26
I99 All Other Congenital Anomalies of the Musculoskeletal System	26,218	1,841	2,000	2,085	1,917	1,773	16,602	2,077	2,228	2,122	1,477	1,194	1,531	1,713	2,142	2,118
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
J Congenital Anomalies of the Integument	10,775	302	302	304	299	445	9,123	616	1,263	477	1,342	1,190	850	1,052	798	1,535
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
K Chromosomal Anomalies	3,816	280	290	278	284	288	2,396	291	299	261	280	267	266	261	265	206
K01 Trisomy 13	105	11	7	6	12	9	60	12	5	3	5	6	3	9	10	7
K02 Down Syndrome	2,167	146	173	173	143	174	1,358	174	184	144	151	134	167	141	147	116
K03 Trisomy 18	246	14	21	20	29	16	146	16	19	15	23	17	10	16	15	15
K99 All Other Chromosomal Anomalies	1,496	126	104	98	118	98	952	107	97	110	106	121	96	117	114	84
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
L Other and Unspecified Congenital Anomalies	12,903	626	754	644	707	637	9,535	601	466	370	227	178	1,868	1,796	1,989	2,040

**Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)**

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
M Infectious Conditions Occurring in the Perinatal Period	4,959	626	754	644	707	637	1,591	165	201	136	246	182	198	213	145	105
M01 Syphilis	197	22	29	16	30	3	97	14	13	4	16	19	3	5	8	15
M02 Other Infections	2,440	170	180	218	187	191	1,494	151	188	132	230	163	195	208	137	90
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
N Familial/Congenital Neoplasms	184	15	14	13	15	11	116	19	19	16	15	5	8	13	11	10
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
O Endocrine/Metabolic Disorders	6,701	500	457	469	429	397	4,449	488	523	423	506	396	488	486	621	518
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
P Diseases of the Blood & Blood Forming Organs	3,956	245	221	259	260	242	2,729	311	293	249	285	234	308	346	358	345
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
Q Other Diseases of the Central and Peripheral Nervous System	4,392	379	359	362	333	351	2,608	364	370	308	308	252	234	313	250	209
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
R Other Diseases of the Eye	8,436	733	702	711	683	688	4,919	750	710	696	617	473	416	492	424	341
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
S Hearing Deficiency	7,952	400	577	612	469	416	5,478	515	477	402	443	391	520	879	901	950
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
T Other Diseases of the Heart & Circulatory System	6,028	528	443	463	428	355	3,811	406	490	437	450	391	396	389	508	344

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
U Other Diseases of the Gastrointestinal System	10,440	899	946	840	810	784	6,161	849	793	753	716	507	582	609	700	652
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
V Other Diseases of the Genital and Urinary Systems	353	22	23	28	33	38	209	32	33	14	16	26	23	25	25	15
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
W Other Fetal/Placental Anomalies	118	-	-	2	2	2	112	107	2	1	-	-	1	1	-	-
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
X Other Musculoskeletal System Diseases	31	2	1	3	7	1	17	1	1	3	1	1	2	5	2	1
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
Y Maternal Exposures Affecting Fetus	3,249	166	159	151	110	143	2,520	180	168	156	220	196	253	393	459	495
Y01 Fetal Alcohol Syndrome	196	26	23	22	13	17	95	17	20	11	5	5	10	7	8	12
Y99 Other Maternal Exposures Affecting the Fetus	3,067	140	137	131	97	127	2,435	165	148	147	216	191	244	389	452	483
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
One or More Reportable Diagnosis	143,822	10,118	10,506	10,223	9,743	9,795	93,437	11,009	11,633	9,821	9,566	7,984	9,599	10,643	11,340	11,842

Notes:

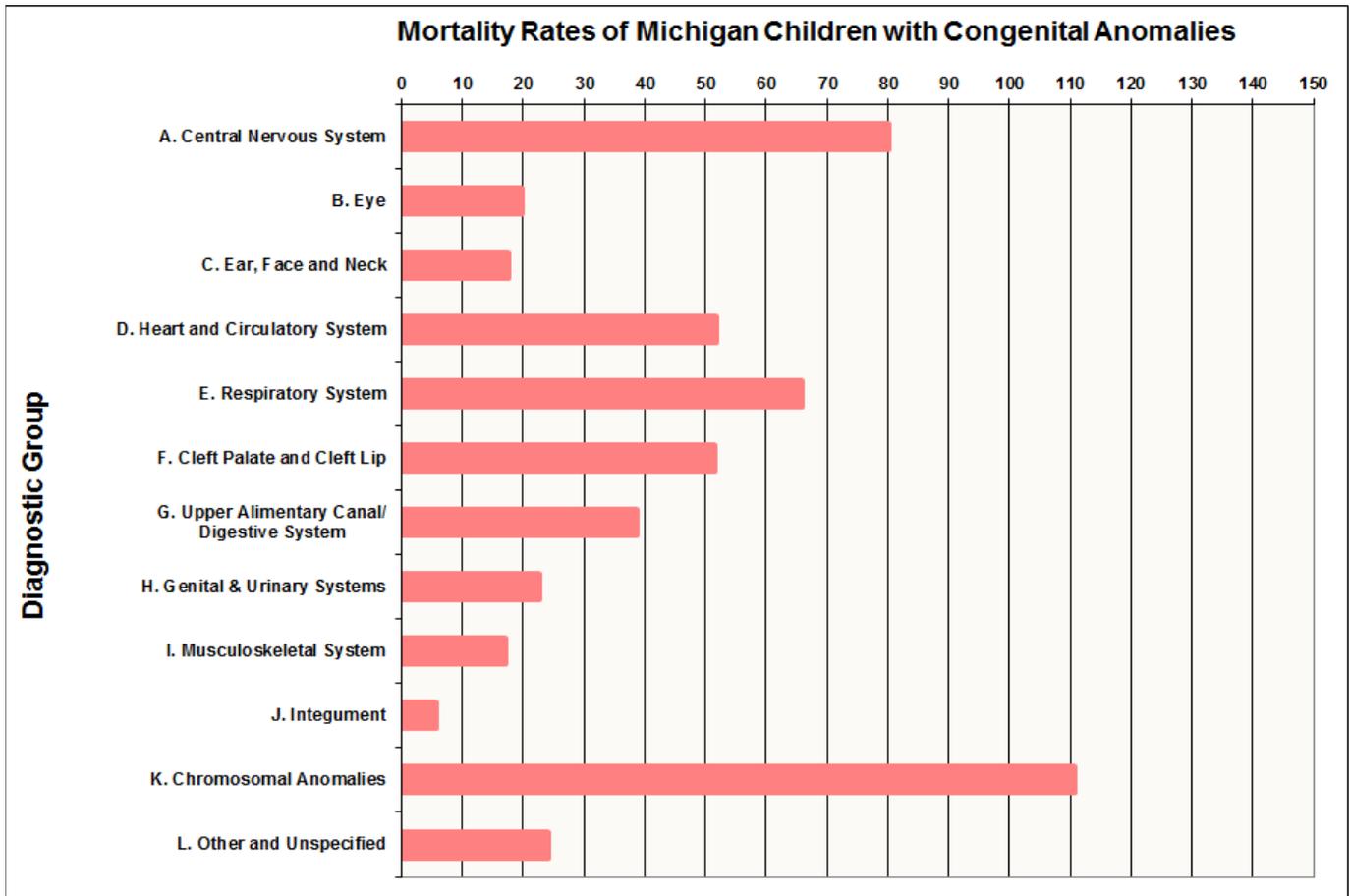
Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defect prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Columns do not add to summary group totals, nor column totals, due to cases with multiple diagnosed conditions that cross diagnostic groupings

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Figure 3-A
Total Congenital Anomalies by Summary Diagnostic Code Group, 2011–2013,
Michigan Resident Children Born in Michigan
Cases Diagnosed within One Year from Birth



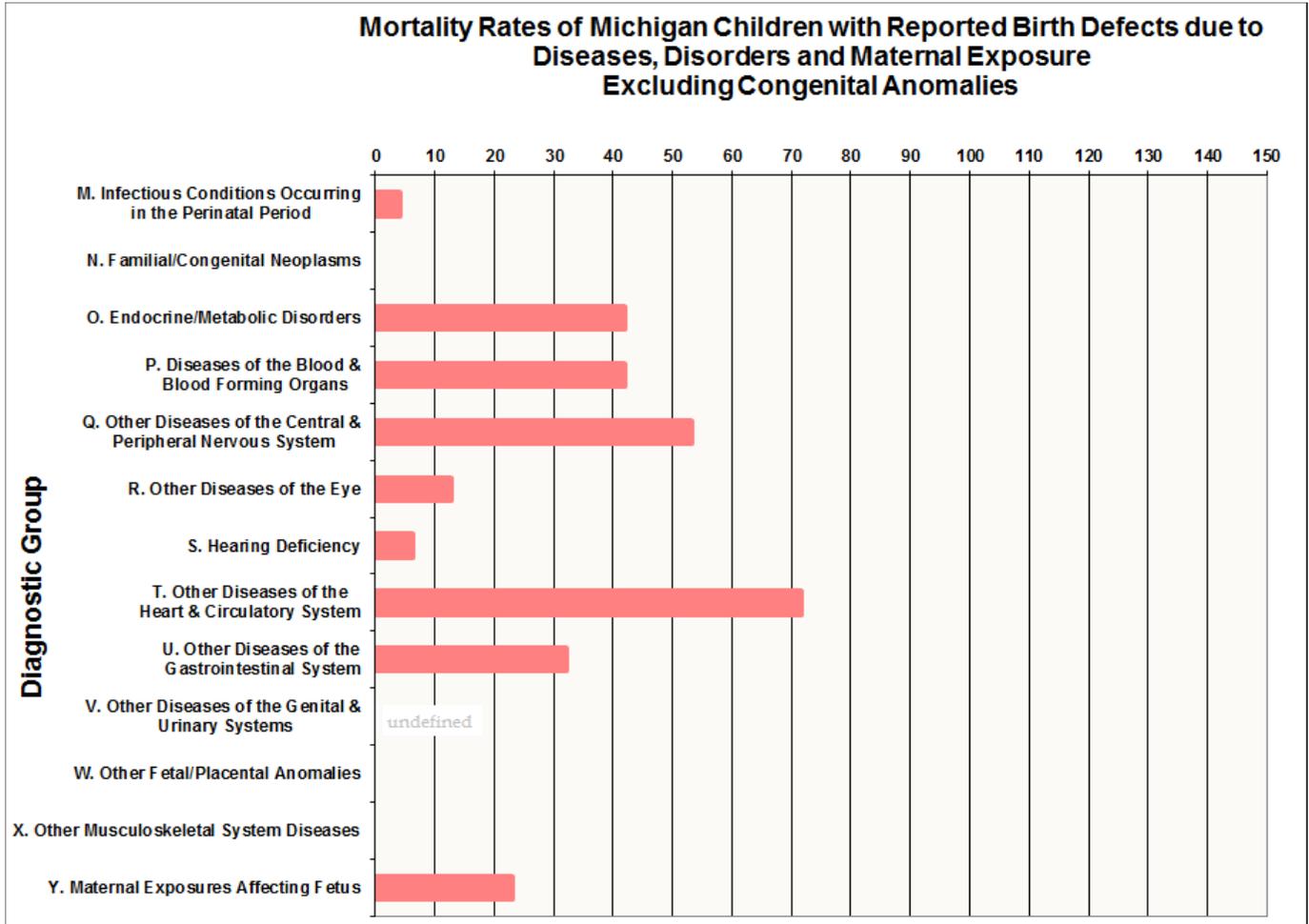
Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Figure 3-B
Total Diseases, Disorders and Maternal Exposures by
Summary Diagnostic Code Group, 2011–2013,
Michigan Resident Children Born in Michigan
Cases Diagnosed within One Year from Birth



Notes:

Rates are Per 1,000 Michigan Born Resident Live Births. Rates represent the infant mortality rate for children with a diagnosed birth defect. The rates include all deaths within the first year of life to children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

*Not calculated. Rates are not calculated when the birth defect resulted in fewer than six deaths.

Conditions are reportable if identified within the first two years of a child's life. The mortality data in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 10
Birth Defect Prevalence Rates by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
A Congenital Anomalies of the Central Nervous System	39.6	36.5	39.4	41.1	38.8	42.9	39.6	43.0	44.7	40.0	40.2	37.6	37.5	37.8	38.7	35.8
B Congenital Anomalies of the Eye	26.3	28.1	28.4	30.2	29.4	28.5	24.7	29.0	24.4	25.1	25.4	23.5	22.5	26.2	21.4	24.6
C Congenital Anomalies of the Ear, Face & Neck	16.2	16.3	17.8	19.0	16.7	15.6	15.7	20.1	15.2	14.0	16.9	13.2	15.3	15.4	14.5	16.0
D Congenital Anomalies of the Heart & Circulatory System	185.8	157.9	173.2	186.3	184.1	200.4	189.2	207.5	216.4	194.4	199.5	173.8	170.3	178.2	189.7	167.1
E Congenital Anomalies of the Respiratory System	50.4	40.0	46.5	48.0	58.7	53.1	51.2	59.0	82.6	70.6	40.5	33.9	40.9	41.5	47.5	38.5
F Cleft Palate & Cleft Lip	15.6	14.8	17.3	15.9	17.0	15.2	15.4	16.1	18.0	15.9	15.3	17.4	13.9	14.9	14.0	12.5
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	54.4	57.4	62.6	60.4	50.7	53.8	52.8	53.9	63.2	55.9	57.6	53.2	46.3	48.3	50.0	44.9
H Congenital Anomalies of the Genital and Urinary Systems	138.6	151.4	142.6	145.8	141.9	144.7	134.5	157.2	158.2	145.3	126.1	104.0	102.9	138.0	140.0	133.3
I Congenital Anomalies of the Musculoskeletal System	169.9	155.5	171.5	178.5	164.7	154.0	173.0	179.2	194.5	186.4	140.2	120.3	154.4	170.3	207.6	202.9
J Congenital Anomalies of the Integument	63.0	22.4	22.9	23.7	23.1	34.7	86.2	48.8	100.1	38.7	113.1	103.3	75.5	93.9	71.3	136.5
K Chromosomal Anomalies	22.3	20.8	22.0	21.7	21.9	22.5	22.6	23.0	23.7	21.2	23.6	23.2	23.6	23.3	23.7	18.3
L Other and Unspecified Congenital Anomalies	75.4	46.5	57.2	50.3	54.6	49.7	90.1	47.6	36.9	30.0	19.1	15.5	165.9	160.3	177.7	181.5

Table 10
Birth Defect Prevalence Rates by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
M Infectious Conditions Occurring in the Perinatal Period	29.0	46.5	57.2	50.3	54.6	49.7	15.0	13.1	15.9	11.0	20.7	15.8	17.6	19.0	13.0	9.3
N Familial/Congenital Neoplasms	1.1	1.1	1.1	1.0	1.2	0.9	1.1	1.5	1.5	1.3	1.3	*	0.7	1.2	1.0	0.9
O Endocrine/Metabolic Disorders	39.2	37.1	34.7	36.6	33.1	31.0	42.0	38.7	41.4	34.3	42.6	34.4	43.3	43.4	55.5	46.1
P Diseases of the Blood & Blood Forming Organs	23.1	18.2	16.8	20.2	20.1	18.9	25.8	24.6	23.2	20.2	24.0	20.3	27.4	30.9	32.0	30.7
Q Other Diseases of the Central and Peripheral Nervous System	25.7	28.1	27.2	28.3	25.7	27.4	24.6	28.8	29.3	25.0	25.9	21.9	20.8	27.9	22.3	18.6
R Other Diseases of the Eye	49.3	54.4	53.2	55.5	52.8	53.6	46.5	59.4	56.3	56.5	52.0	41.1	37.0	43.9	37.9	30.3
S Hearing Deficiency	46.5	29.7	43.8	47.8	36.2	32.4	51.8	40.8	37.8	32.6	37.3	33.9	46.2	78.5	80.5	84.5
T Other Diseases of the Heart & Circulatory System	35.2	39.2	33.6	36.1	33.1	27.7	36.0	32.2	38.8	35.5	37.9	33.9	35.2	34.7	45.4	30.6
U Other Diseases of the Gastrointestinal System	61.0	66.7	71.8	65.6	62.6	61.1	58.2	67.2	62.8	61.1	60.3	44.0	51.7	54.4	62.5	58.0
V Other Diseases of the Genital and Urinary Systems	2.1	1.6	1.7	2.2	2.5	3.0	2.0	2.5	2.6	1.1	1.3	2.3	2.0	2.2	2.2	1.3
W Other Fetal/Placental Anomalies	0.7	-	-	*	*	*	1.1	8.5	*	*	-	-	*	*	-	-
X Other Musculoskeletal System Diseases	0.2	*	*	*	0.5	*	0.2	*	*	*	*	*	*	*	*	*
Y Maternal Exposures Affecting Fetus	19.0	12.3	12.1	11.8	8.5	11.1	23.8	14.3	13.3	12.7	18.5	17.0	22.5	35.1	41.0	44.0
One or More Reportable Diagnosis	840.7	751.1	796.9	798.1	752.5	763.6	882.8	872.0	921.8	797.5	805.9	693.0	852.6	950.1	1,013.2	1,053.4

Notes:

Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Symbols: *: Figure does not meet standards of reliability or precision. • -: A dash represents quantity zero. • 0.0: Quantity more than zero but less than 0.05.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
A Congenital Anomalies of the Central Nervous System	39.6	36.5	39.4	41.1	38.8	42.9	39.6	43.0	44.7	40.0	40.2	37.6	37.5	37.8	38.7	35.8
A01 Anencephalus	1.0	1.4	0.5	1.2	1.2	1.5	1.0	0.7	0.9	0.5	1.3	1.2	0.8	1.0	1.0	1.4
A02 Spina Bifida w/o Anencephaly	4.2	3.4	5.2	3.5	3.8	4.7	4.3	5.0	5.4	4.7	5.4	3.4	4.4	4.2	3.9	2.0
A03 Hydrocephalus w/o Spina Bifida	9.3	10.2	11.7	10.4	9.4	10.5	8.6	10.1	9.7	10.5	10.1	8.8	8.0	6.9	7.0	6.1
A04 Encephalocele	1.0	1.2	0.9	1.0	1.1	1.1	1.0	1.7	1.0	1.1	0.9	0.9	*	0.8	1.3	0.8
A05 Microcephalus	9.7	9.2	9.0	10.9	9.2	9.8	9.8	10.4	11.6	10.6	7.1	8.2	10.1	10.0	8.8	10.8
A99 All Other CNS Anomalies	21.6	16.9	19.6	21.4	22.1	23.4	22.2	24.0	24.2	20.9	23.6	21.5	20.1	22.2	24.3	18.7
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
B Congenital Anomalies of the Eye	26.3	28.1	28.4	30.2	29.4	28.5	24.7	29.0	24.4	25.1	25.4	23.5	22.5	26.2	21.4	24.6
B01 Anophthalmos/Microphthalmos	1.7	1.6	2.2	2.7	2.2	1.8	1.4	2.0	1.7	1.8	1.4	1.0	1.2	1.7	0.8	0.9
B02 Congenital Cataract	2.3	2.9	2.5	3.0	2.9	2.4	2.0	3.0	1.6	2.2	2.5	1.2	2.4	2.7	1.4	1.0
B03 Aniridia	0.3	*	*	*	*	0.5	0.3	*	*	*	*	-	*	*	*	*
B99 All Other Congenital Anomalies of the Eye	24.1	25.8	26.1	26.9	26.5	26.0	22.7	26.2	22.9	22.4	23.0	22.2	20.1	23.4	20.4	23.5
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
C Congenital Anomalies of the Ear, Face & Neck	16.2	16.3	17.8	19.0	16.7	15.6	15.7	20.1	15.2	14.0	16.9	13.2	15.3	15.4	14.5	16.0
C01 Anotia/Microtia	1.3	1.6	1.6	1.6	1.9	1.5	1.2	1.1	1.1	1.1	1.3	1.0	1.6	1.5	1.1	0.5
C99 All Other Congenital Anomalies of the Ear, Face & Neck	15.8	15.9	17.6	18.3	16.5	15.0	15.2	19.9	15.1	13.4	16.2	12.8	14.6	15.0	13.7	15.9

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
D Congenital Anomalies of the Heart & Circulatory System	185.8	157.9	173.2	186.3	184.1	200.4	189.2	207.5	216.4	194.4	199.5	173.8	170.3	178.2	189.7	167.1
D01 Common Truncus	1.3	0.8	1.6	0.9	1.9	1.2	1.4	1.3	1.4	1.2	1.8	0.5	2.0	1.5	1.4	1.1
D02 Transposition of Great Vessels	5.2	5.0	4.5	5.1	4.4	4.8	5.4	6.7	5.8	5.4	5.1	5.6	6.0	4.7	5.4	4.3
D03 Tetralogy of Fallot	5.5	5.6	5.2	5.5	6.3	4.4	5.5	5.5	5.9	5.0	6.7	4.3	6.2	6.4	5.5	4.1
D04 Ventricular Septal Defect	41.7	40.2	40.4	43.6	41.8	43.0	41.7	46.9	45.3	42.8	46.0	35.6	38.3	39.8	45.7	33.4
D05 Atrial Septal Defect	86.8	60.6	65.5	75.9	76.5	87.3	95.3	98.2	102.3	87.2	97.6	86.5	83.2	101.9	111.8	88.2
D06 Endocardial Cushion Defect	5.5	4.8	5.6	5.9	6.7	6.0	5.4	5.6	6.4	5.2	5.6	4.6	5.2	5.8	6.0	3.8
D07 Pulmonary Valve Atresia & Stenosis	11.1	10.7	12.4	10.5	13.4	10.1	10.9	14.1	13.2	12.0	11.5	8.0	10.7	10.0	11.2	6.4
D08 Tricuspid Valve Atresia & Stenosis	1.5	1.3	2.2	2.0	1.7	0.8	1.4	1.8	0.9	1.5	1.9	1.0	1.6	1.4	1.4	0.9
D09 Ebstein's Anomaly	1.4	2.6	3.6	2.9	1.4	0.8	0.8	1.0	0.9	0.6	1.0	0.6	0.8	0.8	1.2	0.6
D10 Aortic Valve Stenosis	2.4	3.2	2.1	2.4	2.8	2.9	2.2	2.7	2.5	2.5	2.4	1.8	1.8	2.4	2.4	1.7
D11 Hypoplastic Left Heart Syndrome	4.3	3.4	5.2	4.4	4.2	4.1	4.3	5.0	3.8	4.4	4.1	4.9	3.2	3.8	5.3	4.2
D12 Patent Ductus Arteriosus	55.3	41.5	49.5	52.0	58.5	58.8	57.3	65.3	69.3	58.5	63.7	51.6	52.1	60.7	57.1	35.0
D13 Coarctation of Aorta	6.3	6.1	5.1	6.7	6.5	6.1	6.4	6.3	7.4	7.1	7.4	4.4	5.7	6.2	7.7	5.3
D14 Pulmonary Artery Anomalies	17.9	18.7	22.4	23.3	21.5	19.2	15.9	23.8	24.2	20.4	21.0	19.6	17.3	10.5	1.8	1.6
D99 All Other Congenital Anomalies of the Heart and Circulatory System	75.2	66.2	69.7	80.1	80.2	93.6	73.5	82.0	94.2	81.9	79.4	67.5	66.8	61.6	66.3	57.5
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
E Congenital Anomalies of the Respiratory System	50.4	40.0	46.5	48.0	58.7	53.1	51.2	59.0	82.6	70.6	40.5	33.9	40.9	41.5	47.5	38.5
E01 Lung Agenesis/Hypoplasia	7.0	6.4	5.8	6.6	11.9	9.0	6.4	7.6	6.0	5.2	6.3	7.4	9.7	6.5	5.5	3.8
E02 Choanal Atresia	1.7	1.5	2.1	2.3	1.4	1.6	1.7	1.9	1.4	1.3	1.4	1.7	2.0	1.7	1.9	2.2
E99 All Other Congenital Anomalies of the Respiratory System	43.9	33.7	40.5	42.2	48.2	44.9	45.2	52.7	77.7	65.7	34.9	26.4	31.7	35.4	42.4	34.2
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
F Cleft Palate & Cleft Lip	15.6	14.8	17.3	15.9	17.0	15.2	15.4	16.1	18.0	15.9	15.3	17.4	13.9	14.9	14.0	12.5
F01 Cleft Palate	5.4	5.2	6.4	5.5	5.5	5.2	5.4	6.1	6.7	6.1	5.7	6.6	3.6	4.0	4.3	4.8
F02 Cleft Lip w & w/o Cleft Palate	10.2	9.6	10.8	10.5	11.5	10.0	10.0	10.0	11.3	9.8	9.6	10.8	10.3	10.9	9.7	7.7

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	54.4	57.4	62.6	60.4	50.7	53.8	52.8	53.9	63.2	55.9	57.6	53.2	46.3	48.3	50.0	44.9
G01 Esophageal Atresia/ Tracheoesophageal Fistula	2.8	2.5	3.5	3.5	3.6	3.6	2.5	3.4	2.8	3.2	2.4	1.2	2.5	2.4	2.1	1.8
G02 Rectal and Large Intestinal Atresia/Stenosis	4.8	5.5	4.7	5.1	4.6	5.0	4.8	4.8	5.9	4.5	4.5	4.0	5.0	5.3	4.1	4.6
G03 Pyloric Stenosis	17.2	18.8	23.3	20.3	16.0	15.8	16.2	15.4	18.5	16.8	20.0	18.8	13.8	13.9	15.7	12.1
G04 Hirshsprung's Disease (congenital megacolon)	3.2	3.3	3.8	3.3	3.2	3.3	3.0	2.9	3.0	2.8	2.9	2.1	4.3	3.7	2.9	2.8
G05 Biliary Atresia	1.2	1.2	1.1	0.8	1.2	1.4	1.2	1.0	1.0	0.9	1.3	1.2	1.1	1.6	1.4	1.1
G99 Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	28.9	30.1	29.6	31.4	26.2	28.8	28.7	30.3	35.2	30.9	30.2	28.8	23.2	26.0	27.4	25.0
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
H Congenital Anomalies of the Genital and Urinary Systems	138.6	151.4	142.6	145.8	141.9	144.7	134.5	157.2	158.2	145.3	126.1	104.0	102.9	138.0	140.0	133.3
H01 Renal Agenesis/Hypoplasia	5.6	7.3	5.6	6.6	5.9	5.0	5.4	5.5	4.8	6.2	6.9	4.3	4.5	4.6	5.4	6.2
H02 Bladder Exstrophy	0.3	*	0.8	0.5	*	*	0.2	0.5	*	*	*	*	*	*	-	*
H03 Obstructive Genitourinary Defects	22.7	19.5	21.8	23.0	23.2	23.4	23.0	25.7	24.4	23.7	23.1	17.4	17.8	24.1	27.3	22.7
H04 Hypospadias & Epispadias	31.8	33.6	29.9	31.5	30.1	29.2	32.4	37.6	26.7	29.6	36.4	29.9	30.6	39.5	31.8	29.8
H99 All Other Congenital Anomalies of the Genital & Urinary Systems	113.2	124.3	118.2	120.4	119.2	123.5	108.2	129.3	138.2	123.6	95.5	78.6	76.9	104.6	115.0	106.1

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
I Congenital Anomalies of the Musculoskeletal System	169.9	155.5	171.5	178.5	164.7	154.0	173.0	179.2	194.5	186.4	140.2	120.3	154.4	170.3	207.6	202.9
I01 Upper Limb Reduction Deformities	2.5	3.0	2.7	2.7	2.6	2.1	2.4	2.1	2.1	2.9	3.0	2.3	2.7	2.8	2.0	2.0
I02 Lower Limb Reduction Deformities	1.9	1.7	2.2	2.0	1.9	1.9	1.8	2.3	2.3	1.7	1.5	2.0	1.6	1.5	2.1	1.2
I03 Gastroschisis/Omphalocele	6.2	3.8	5.2	3.4	5.3	5.9	7.1	6.1	7.4	6.7	6.1	6.1	8.7	7.2	7.8	8.5
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	1.9	1.7	2.4	1.4
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	5.3	4.9	3.8	3.4
I03c Other & Unspecified Abdominal Wall Anomalies	4.7	3.8	5.1	3.4	5.2	5.9	4.7	6.1	7.4	6.7	5.9	5.0	2.9	1.6	2.3	4.0
I04 Congenital Hip Dislocation	11.9	14.8	16.3	16.1	13.0	11.5	10.4	9.4	13.0	8.1	12.2	12.0	10.4	11.9	9.6	6.6
I05 Diaphragmatic Hernia	3.3	2.9	3.3	2.7	3.8	3.7	3.3	2.9	4.1	3.4	3.2	3.9	3.6	3.3	2.4	2.3
I99 All Other Congenital Anomalies of the Musculoskeletal System	153.2	136.7	151.7	162.8	148.1	138.2	156.9	164.5	176.6	172.3	124.4	103.6	136.0	152.9	191.4	188.4
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
J Congenital Anomalies of the Integument	63.0	22.4	22.9	23.7	23.1	34.7	86.2	48.8	100.1	38.7	113.1	103.3	75.5	93.9	71.3	136.5
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
K Chromosomal Anomalies	22.3	20.8	22.0	21.7	21.9	22.5	22.6	23.0	23.7	21.2	23.6	23.2	23.6	23.3	23.7	18.3
K01 Trisomy 13	0.6	0.8	0.5	0.5	0.9	0.7	0.6	1.0	*	*	*	0.5	*	0.8	0.9	0.6
K02 Down Syndrome	12.7	10.8	13.1	13.5	11.0	13.6	12.8	13.8	14.6	11.7	12.7	11.6	14.8	12.6	13.1	10.3
K03 Trisomy 18	1.4	1.0	1.6	1.6	2.2	1.2	1.4	1.3	1.5	1.2	1.9	1.5	0.9	1.4	1.3	1.3
K99 All Other Chromosomal Anomalies	8.7	9.4	7.9	7.7	9.1	7.6	9.0	8.5	7.7	8.9	8.9	10.5	8.5	10.4	10.2	7.5
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
L Other and Unspecified Congenital Anomalies	75.4	46.5	57.2	50.3	54.6	49.7	90.1	47.6	36.9	30.0	19.1	15.5	165.9	160.3	177.7	181.5

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
M Infectious Conditions Occurring in the Perinatal Period	29.0	46.5	57.2	50.3	54.6	49.7	15.0	13.1	15.9	11.0	20.7	15.8	17.6	19.0	13.0	9.3
M01 Syphilis	1.2	1.6	2.2	1.2	2.3	*	0.9	1.1	1.0	*	1.3	1.6	*	*	0.7	1.3
M02 Other Infections	14.3	12.6	13.7	17.0	14.4	14.9	14.1	12.0	14.9	10.7	19.4	14.1	17.3	18.6	12.2	8.0
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
N Familial/Congenital Neoplasms	1.1	1.1	1.1	1.0	1.2	0.9	1.1	1.5	1.5	1.3	1.3	*	0.7	1.2	1.0	0.9
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
O Endocrine/Metabolic Disorders	39.2	37.1	34.7	36.6	33.1	31.0	42.0	38.7	41.4	34.3	42.6	34.4	43.3	43.4	55.5	46.1
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
P Diseases of the Blood & Blood Forming Organs	23.1	18.2	16.8	20.2	20.1	18.9	25.8	24.6	23.2	20.2	24.0	20.3	27.4	30.9	32.0	30.7
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
Q Other Diseases of the Central and Peripheral Nervous System	25.7	28.1	27.2	28.3	25.7	27.4	24.6	28.8	29.3	25.0	25.9	21.9	20.8	27.9	22.3	18.6
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
R Other Diseases of the Eye	49.3	54.4	53.2	55.5	52.8	53.6	46.5	59.4	56.3	56.5	52.0	41.1	37.0	43.9	37.9	30.3
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
S Hearing Deficiency	46.5	29.7	43.8	47.8	36.2	32.4	51.8	40.8	37.8	32.6	37.3	33.9	46.2	78.5	80.5	84.5
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
T Other Diseases of the Heart & Circulatory System	35.2	39.2	33.6	36.1	33.1	27.7	36.0	32.2	38.8	35.5	37.9	33.9	35.2	34.7	45.4	30.6

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
U Other Diseases of the Gastrointestinal System	61.0	66.7	71.8	65.6	62.6	61.1	58.2	67.2	62.8	61.1	60.3	44.0	51.7	54.4	62.5	58.0
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
V Other Diseases of the Genital and Urinary Systems	2.1	1.6	1.7	2.2	2.5	3.0	2.0	2.5	2.6	1.1	1.3	2.3	2.0	2.2	2.2	1.3
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
W Other Fetal/Placental Anomalies	0.7	-	-	*	*	*	1.1	8.5	*	*	-	-	*	*	-	-
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
X Other Musculoskeletal System Diseases	0.2	*	*	*	0.5	*	0.2	*	*	*	*	*	*	*	*	*
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
Y Maternal Exposures Affecting Fetus	19.0	12.3	12.1	11.8	8.5	11.1	23.8	14.3	13.3	12.7	18.5	17.0	22.5	35.1	41.0	44.0
Y01 Fetal Alcohol Syndrome	1.1	1.9	1.7	1.7	1.0	1.3	0.9	1.3	1.6	0.9	*	*	0.9	0.6	0.7	1.1
Y99 Other Maternal Exposures Affecting the Fetus	17.9	10.4	10.4	10.2	7.5	9.9	23.0	13.1	11.7	11.9	18.2	16.6	21.7	34.7	40.4	43.0
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
One or More Reportable Diagnosis	840.7	751.1	796.9	798.1	752.5	763.6	882.8	872.0	921.8	797.5	805.9	693.0	852.6	950.1	1,013.2	1,053.4

Notes:

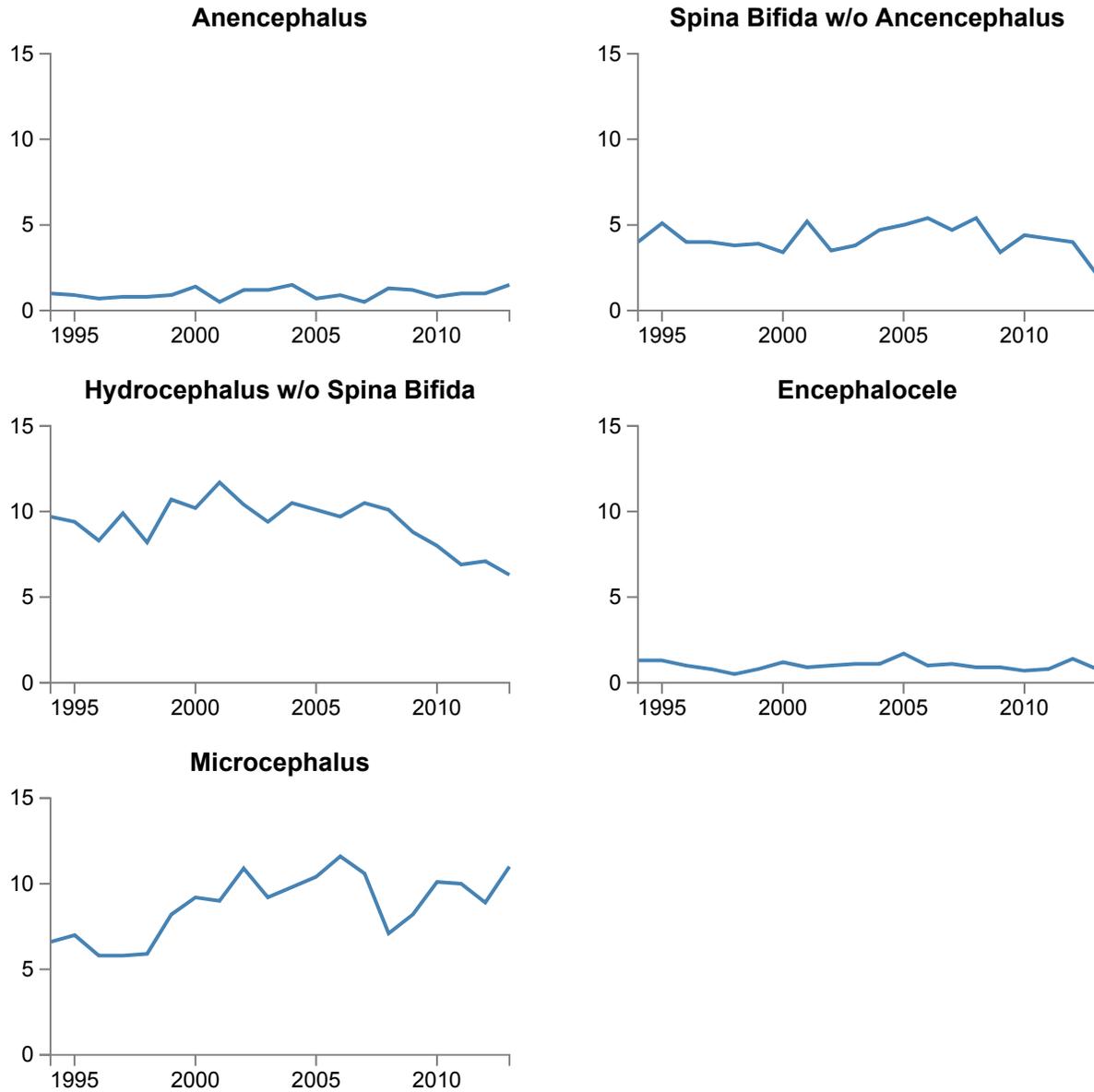
Rates are per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

*****: 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.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 4. Trends in the Prevalence Rates of Neural Tube Defects
Michigan Residents, 1994 – 2013**

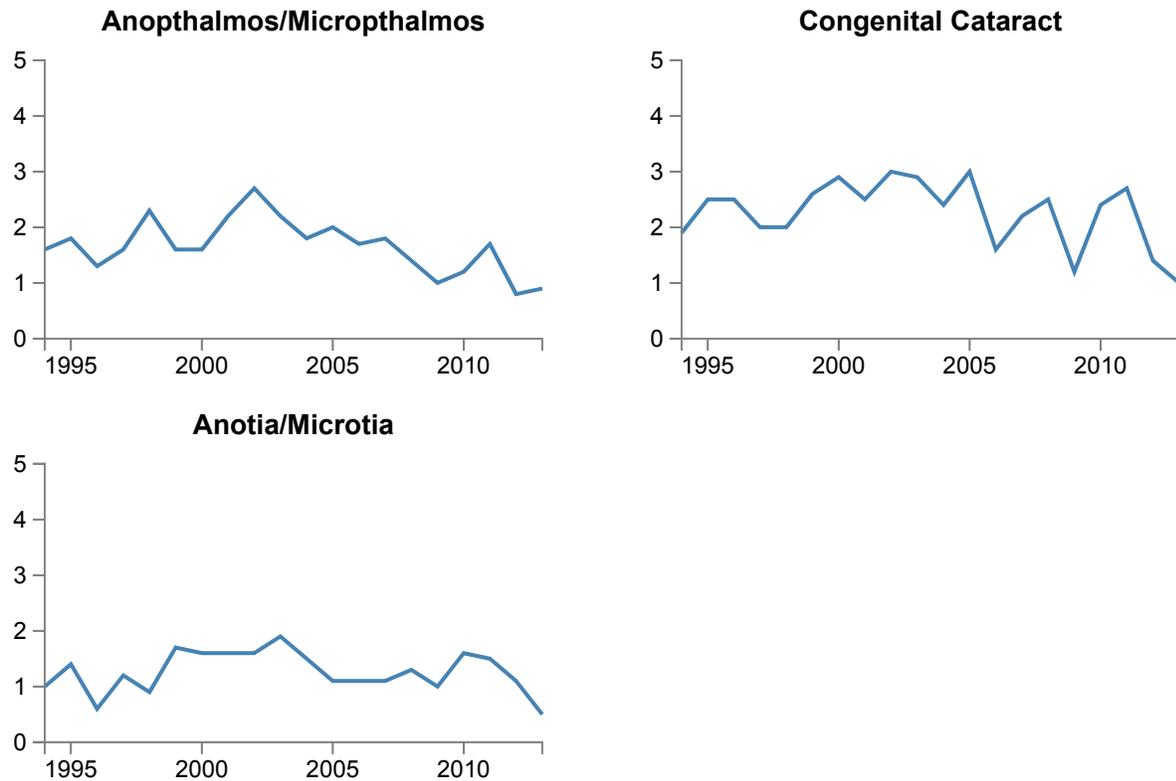


Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Unstable Rates: In order to produce a meaningful graph, some single-year, unreliable rates were smoothed using additional years of data. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

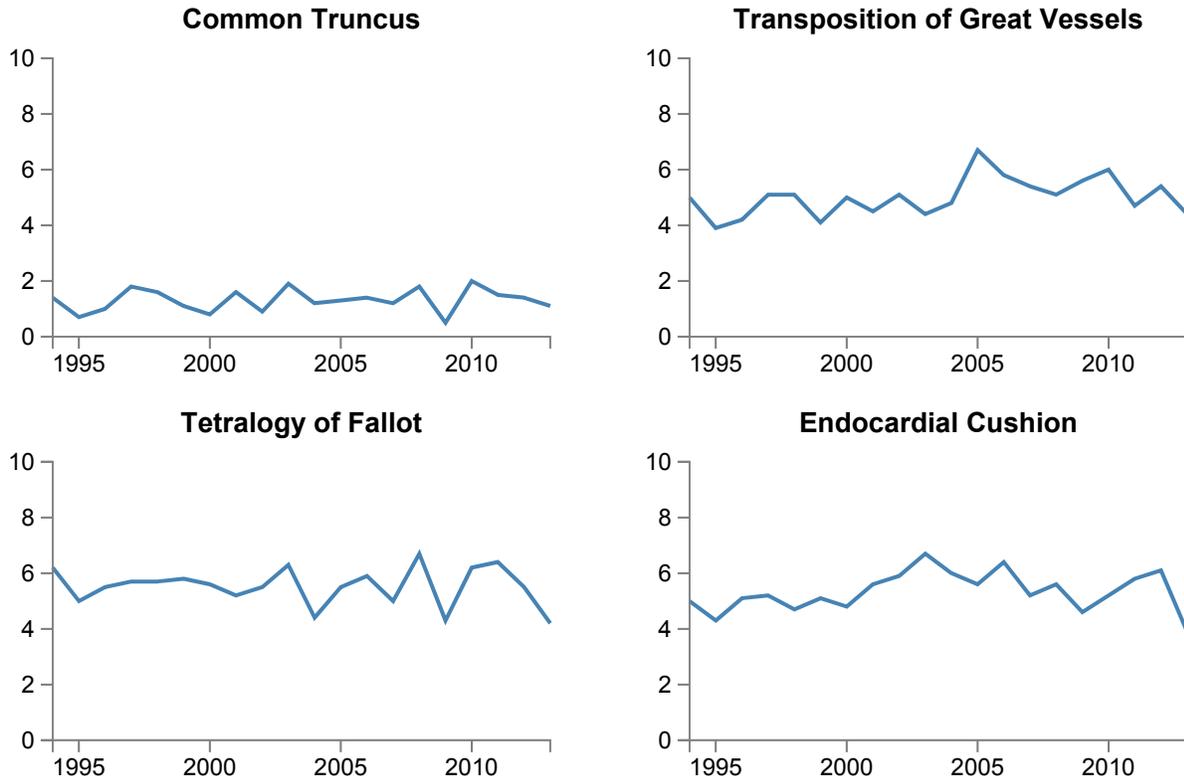
Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 5. Trends in the Prevalence Rates of Eye & Ear Defects
Michigan Residents, 1994 – 2013**



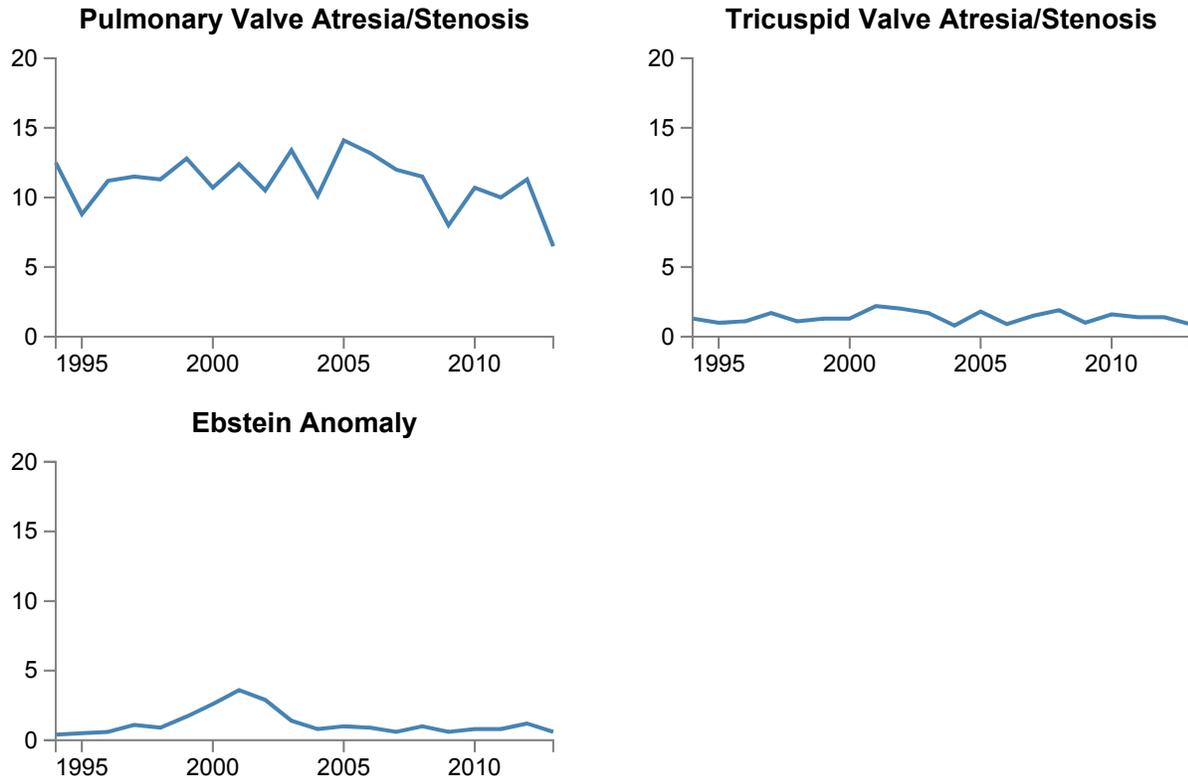
Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life. **Diagnoses** are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 6-A. Trends in the Prevalence Rates of Cardiac Defects
Michigan Residents, 1994 – 2013**



Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life. **Diagnoses** are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 6-B. Trends in the Prevalence Rates of Cardiac Defects
Michigan Residents, 1994 – 2013**

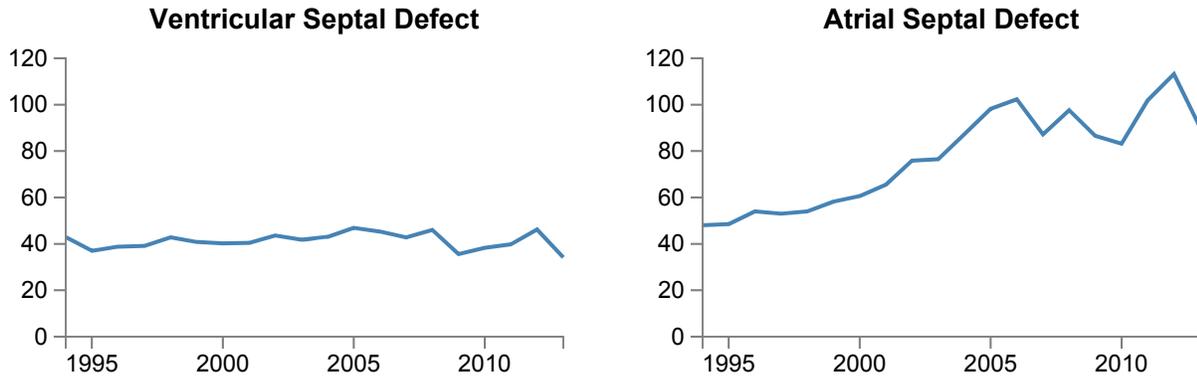


Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

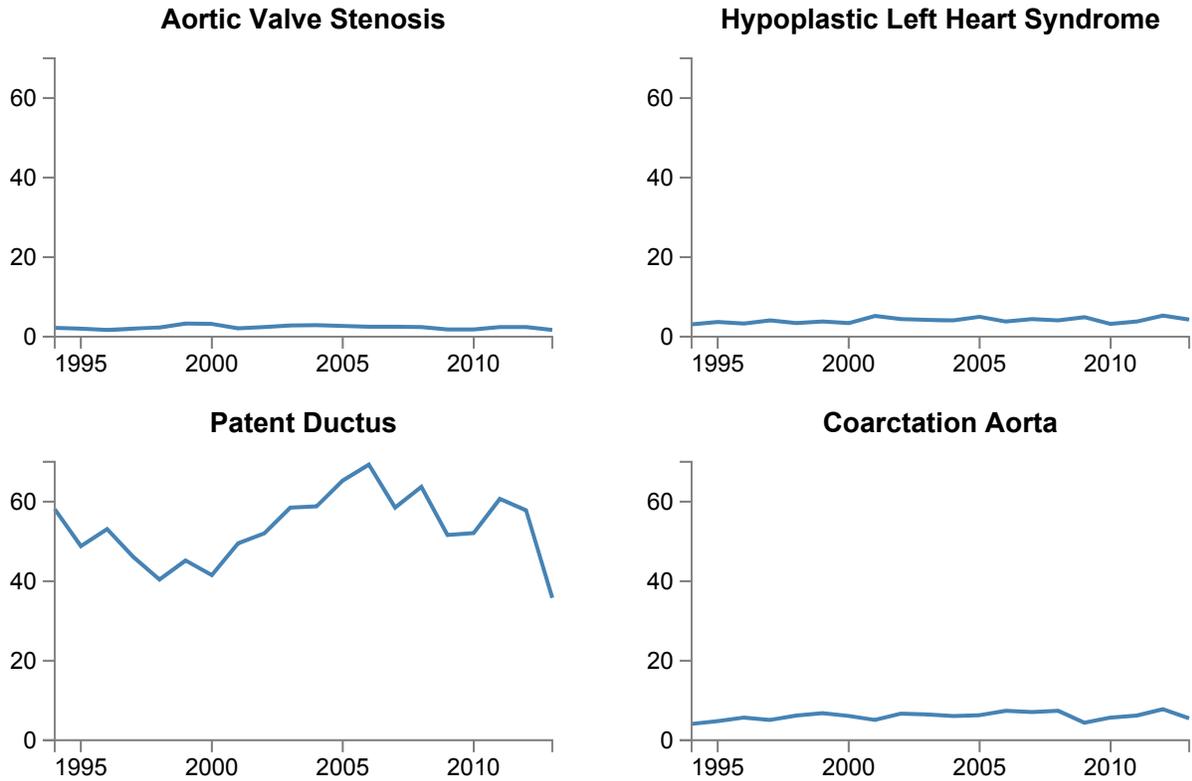
Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 6-C. Trends in the Prevalence Rates of Cardiac Defects
Michigan Residents, 1994 – 2013**



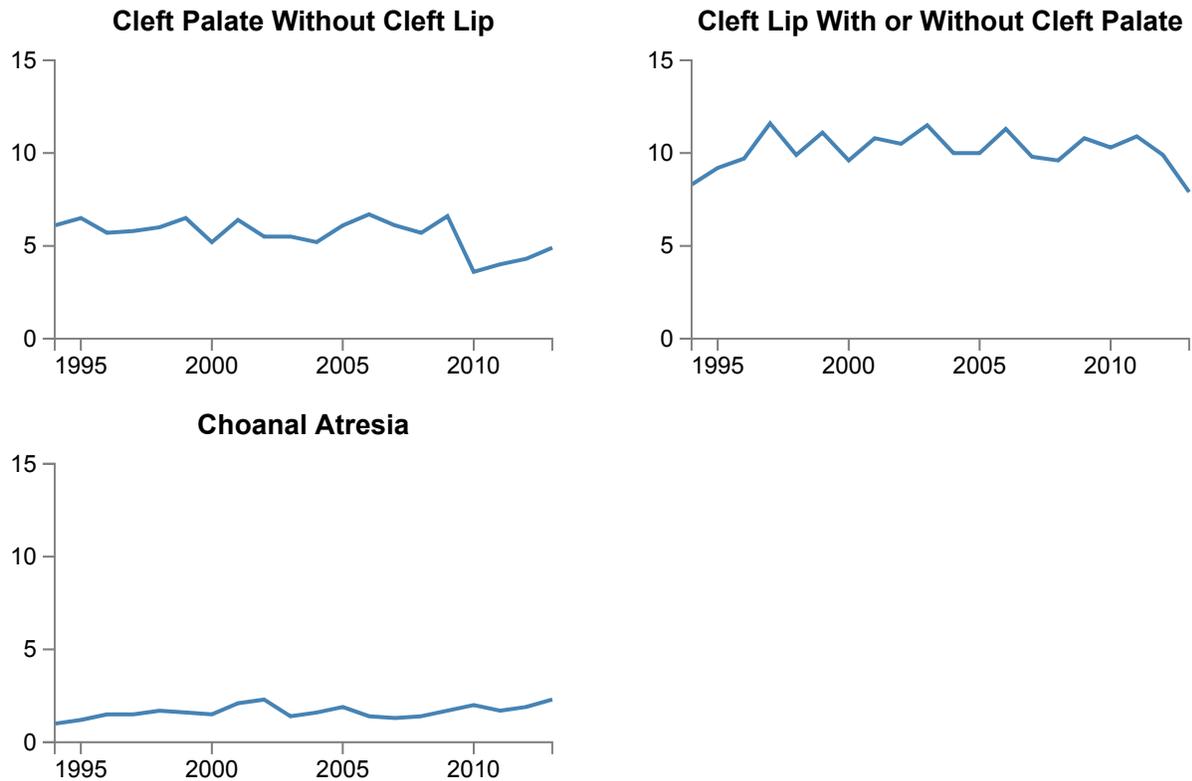
Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life. **Diagnoses** are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 7. Trends in the Prevalence Rates of Circulatory Defects
Michigan Residents, 1994 – 2013**



Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life. **Diagnoses** are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 8. Trends in the Prevalence Rates of Oral Defects
Michigan Residents, 1994 – 2013**

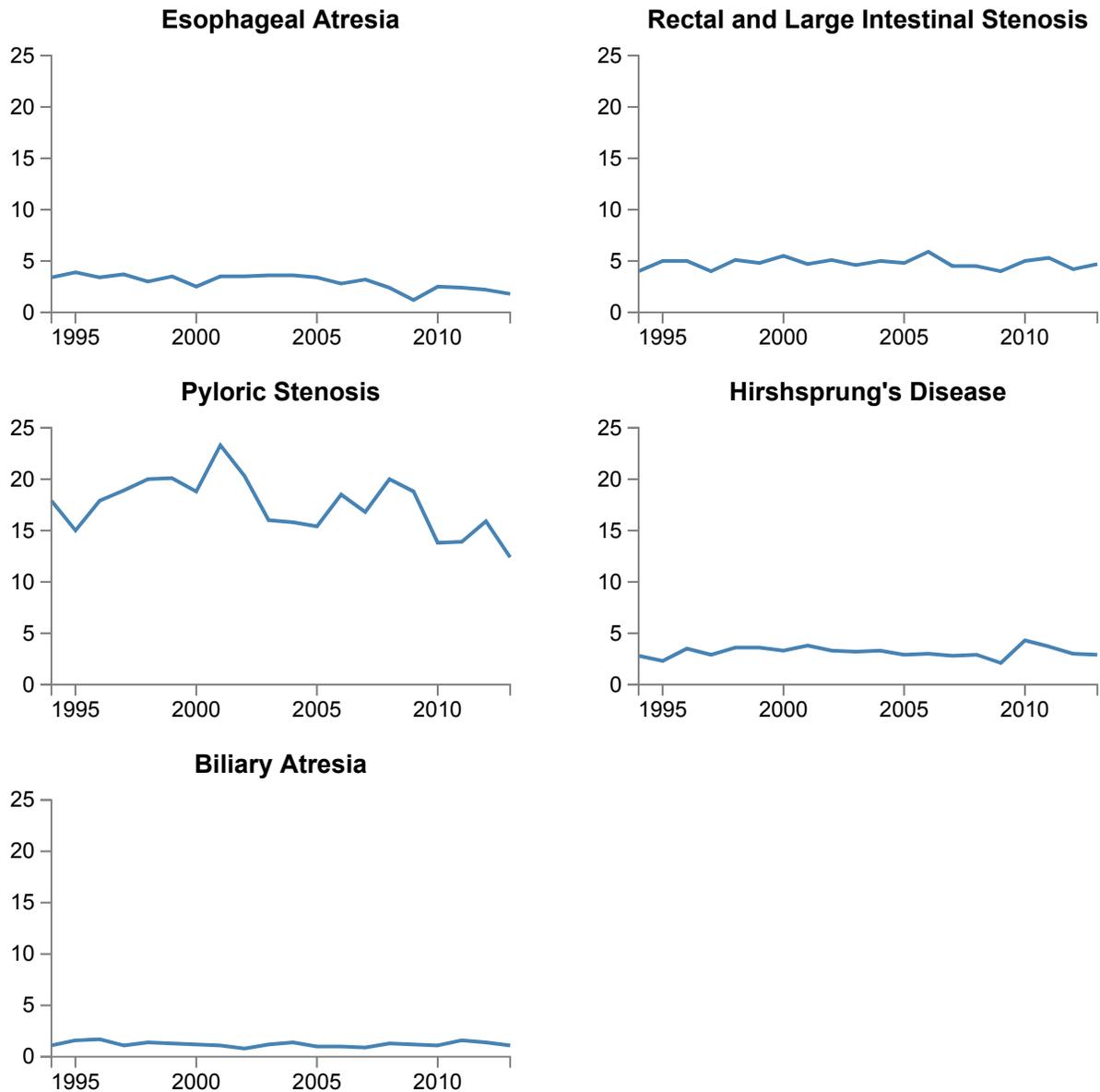


Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

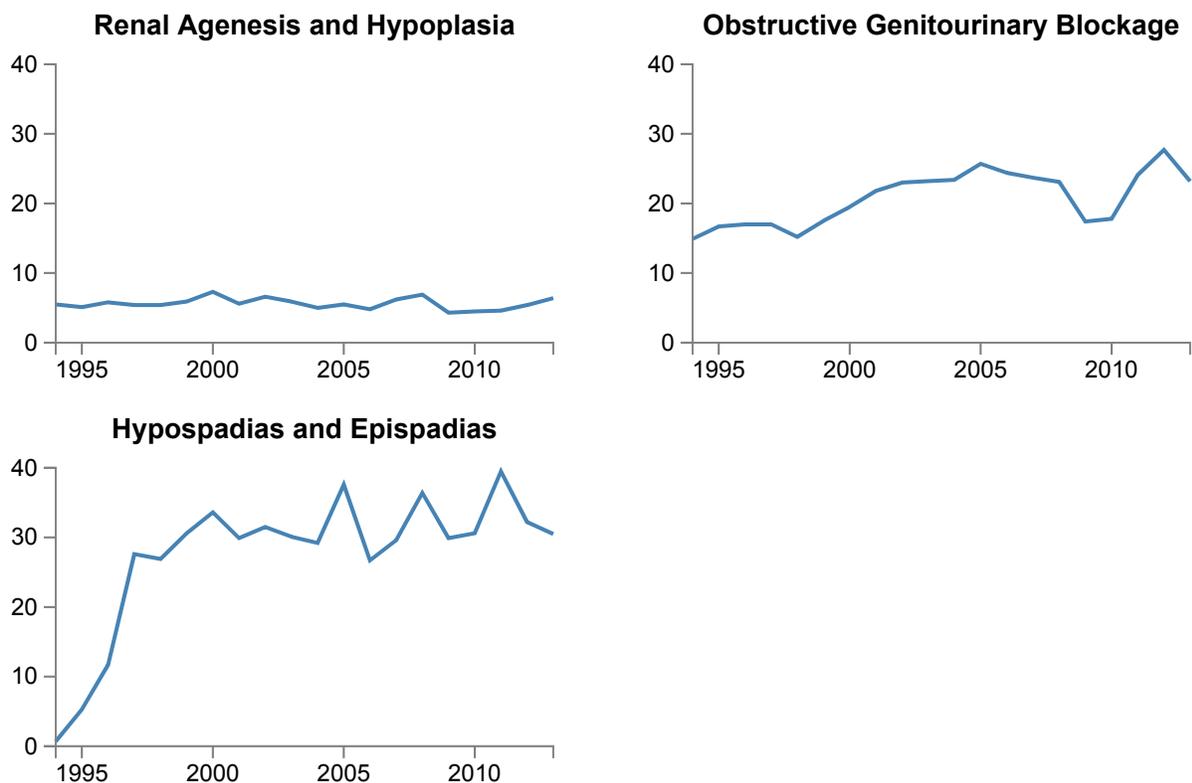
Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 9. Trends in the Prevalence Rates of Gastrointestinal Defects
Michigan Residents, 1994 – 2013**



Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life. **Diagnoses** are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 10. Trends in the Prevalence Rates of Genitourinary Defects
Michigan Residents, 1994 – 2013**

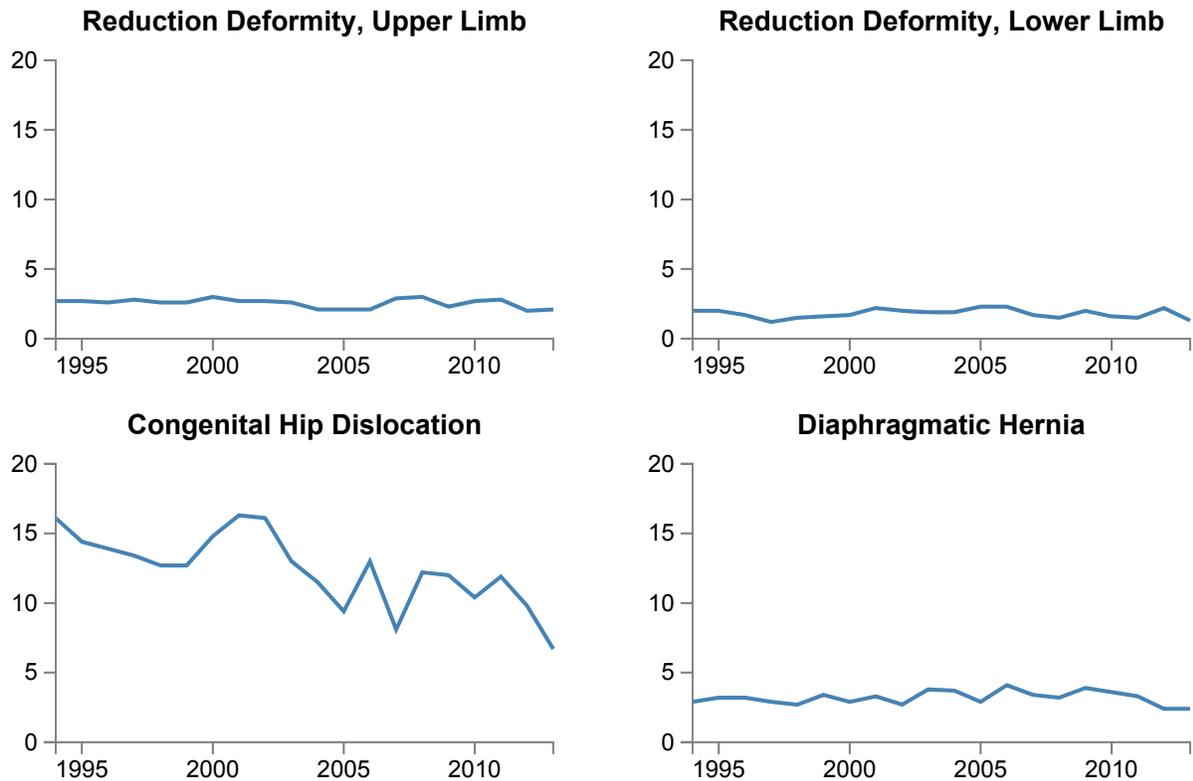


Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 11. Trends in the Prevalence Rates of Musculoskeletal Defects
Michigan Residents, 1994 – 2013**

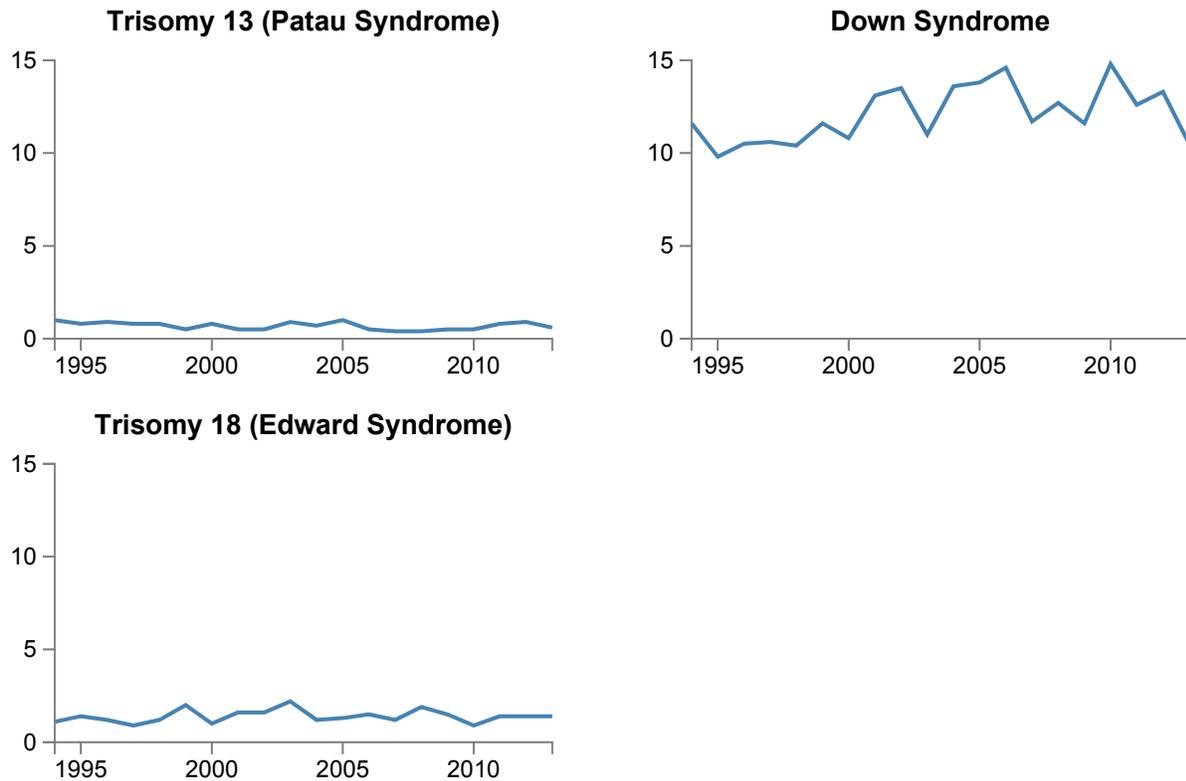


Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

**Figure 12. Trends in the Prevalence Rates of Chromosomal Defects
Michigan Residents, 1994 – 2013**



Notes: Rates Are Per 10,000 Michigan Born Resident Live Births. Rates include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Unstable Rates: In order to produce a meaningful graph, some single-year, unreliable rates were smoothed using additional years of data. **Conditions** are reportable if identified within the first two years of a child's life. The prevalence frequencies used to calculate the rates in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 12
Infant Deaths of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
A Congenital Anomalies of the Central Nervous System	767	62	69	70	66	75	425	66	59	65	57	39	38	30	38	33
B Congenital Anomalies of the Eye	153	11	16	17	13	19	77	13	11	13	8	7	9	5	6	5
C Congenital Anomalies of the Ear, Face & Neck	97	7	11	7	7	9	56	13	3	10	8	6	7	3	4	2
D Congenital Anomalies of the Heart & Circulatory System	1,879	153	149	143	170	148	1,116	148	132	137	152	134	102	99	110	102
E Congenital Anomalies of the Respiratory System	709	63	49	66	72	61	398	74	57	53	41	41	38	31	33	30
F Cleft Palate & Cleft Lip	155	6	14	15	14	15	91	9	11	15	10	15	7	9	10	5
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	514	37	54	42	46	59	276	41	38	46	41	29	19	24	18	20
H Congenital Anomalies of the Genital and Urinary Systems	671	48	48	53	68	64	390	55	43	50	51	49	37	41	34	30
I Congenital Anomalies of the Musculoskeletal System	747	66	61	51	61	67	441	74	53	63	49	46	45	40	38	33
J Congenital Anomalies of the Integument	90	8	10	8	3	3	58	8	8	5	6	7	5	8	2	9
K Chromosomal Anomalies	483	51	38	37	44	41	272	45	29	22	36	36	23	33	24	24
L Other and Unspecified Congenital Anomalies	685	62	56	50	65	74	378	46	40	38	33	33	48	45	50	45

Table 12
Infant Deaths of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
M Infectious Conditions Occurring in the Perinatal Period	171	13	20	11	20	12	95	9	13	10	11	20	8	12	6	6
N Familial/Congenital Neoplasms	1	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-
O Endocrine/Metabolic Disorders	376	28	35	25	33	29	226	27	30	23	28	25	25	24	31	13
P Diseases of the Blood & Blood Forming Organs	245	19	22	13	19	14	158	24	20	10	17	22	21	15	15	14
Q Other Diseases of the Central and Peripheral Nervous System	376	47	32	32	33	33	199	35	35	38	16	22	12	20	13	8
R Other Diseases of the Eye	366	47	35	29	33	41	181	36	31	40	30	17	11	10	4	2
S Hearing Deficiency	152	14	12	15	14	16	81	20	9	10	7	10	8	8	7	2
T Other Diseases of the Heart & Circulatory System	571	63	38	39	43	39	349	34	53	59	41	44	29	35	39	15
U Other Diseases of the Gastrointestinal System	404	34	36	31	32	33	238	31	25	25	33	29	32	27	20	16
V Other Diseases of the Genital and Urinary Systems	6	1	-	-	1	1	3	-	-	1	-	-	-	-	1	1
W Other Fetal/Placental Anomalies	5	-	-	-	-	-	5	5	-	-	-	-	-	-	-	-
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	83	5	2	4	6	3	63	4	4	4	8	8	4	8	12	11
One or More Reportable Diagnosis	4,416	406	366	322	378	354	2,590	363	322	286	297	305	236	256	252	273

Notes:

Frequencies include all deaths within the first year of life to children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defect mortality rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. Columns do not add to total infant deaths born with birth defects. Some cases include diagnosis with multiple birth defects, and each birth defect diagnosis was counted in each appropriate grouping.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 13
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
A Congenital Anomalies of the Central Nervous System	767	62	69	70	66	75	425	66	59	65	57	39	38	30	38	33
A01 Anencephalus	106	14	5	13	6	11	57	6	5	2	9	7	4	6	6	12
A02 Spina Bifida w/o Anencephaly	41	4	6	1	4	4	22	6	2	3	2	3	3	1	1	1
A03 Hydrocephalus w/o Spina Bifida	240	17	24	17	21	22	139	25	22	24	20	13	9	7	9	10
A04 Encephalocele	28	2	2	1	4	1	18	5	1	3	4	1	1	1	2	-
A05 Microcephalus	185	12	14	26	15	16	102	15	17	22	12	8	10	9	5	4
A99 All Other CNS Anomalies	391	28	35	31	40	38	219	35	29	40	26	17	22	16	25	9
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
B Congenital Anomalies of the Eye	153	11	16	17	13	19	77	13	11	13	8	7	9	5	6	5
B01 Anophthalmos/Microphthalmos	51	2	6	7	4	6	26	4	3	6	4	2	2	2	1	2
B02 Congenital Cataract	24	-	3	3	3	1	14	4	2	2	2	1	1	1	1	-
B03 Aniridia	2	-	-	-	-	-	2	1	-	-	-	-	-	-	-	1
B99 All Other Congenital Anomalies of the Eye	109	10	12	11	8	15	53	8	11	8	5	5	6	2	5	3
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
C Congenital Anomalies of the Ear, Face & Neck	97	7	11	7	7	9	56	13	3	10	8	6	7	3	4	2
C01 Anotia/Microtia	10	1	1	-	1	1	6	-	-	1	1	1	2	1	-	-
C99 All Other Congenital Anomalies of the Ear, Face & Neck	91	6	11	7	7	8	52	13	3	10	7	5	6	2	4	2

Table 13
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
D Congenital Anomalies of the Heart & Circulatory System	1,879	153	149	143	170	148	1,116	148	132	137	152	134	102	99	110	102
D01 Common Truncus	38	1	3	2	5	1	26	2	3	4	6	-	4	3	2	2
D02 Transposition of Great Vessels	109	12	4	8	7	11	67	9	9	11	7	6	10	6	7	2
D03 Tetralogy of Fallot	102	12	8	4	10	8	60	9	7	4	13	9	4	5	7	2
D04 Ventricular Septal Defect	383	37	29	35	35	40	207	25	25	30	41	20	22	16	20	8
D05 Atrial Septal Defect	698	46	46	53	65	50	438	53	46	63	72	43	40	43	48	30
D06 Endocardial Cushion Defect	128	14	9	4	14	12	75	13	11	10	10	10	6	4	5	6
D07 Pulmonary Valve Atresia & Stenosis	133	12	10	6	16	9	80	17	13	7	13	4	4	7	11	4
D08 Tricuspid Valve Atresia & Stenosis	31	6	3	1	3	-	18	2	2	2	5	1	1	4	-	1
D09 Ebstein's Anomaly	36	8	5	5	-	-	18	2	2	1	2	3	2	3	2	1
D10 Aortic Valve Stenosis	40	4	5	3	2	1	25	6	2	1	4	2	1	3	6	-
D11 Hypoplastic Left Heart Syndrome	204	18	18	14	15	13	126	14	11	15	18	20	8	9	12	19
D12 Patent Ductus Arteriosus	737	61	40	43	77	55	461	68	56	63	81	35	45	47	42	24
D13 Coarctation of Aorta	113	10	6	9	7	10	71	8	13	11	10	4	3	10	9	3
D14 Pulmonary Artery Anomalies	183	25	18	12	19	14	95	19	7	20	19	15	9	2	3	1
D99 All Other Congenital Anomalies of the Heart and Circulatory System	1,112	87	85	93	91	92	664	85	73	73	81	85	65	66	71	65
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
E Congenital Anomalies of the Respiratory System	709	63	49	66	72	61	398	74	57	53	41	41	38	31	33	30
E01 Lung Agenesis/Hypoplasia	349	34	24	34	45	32	180	35	21	19	14	17	22	18	17	17
E02 Choanal Atresia	22	2	2	2	-	-	16	1	-	3	1	1	3	1	2	4
E99 All Other Congenital Anomalies of the Respiratory System	376	32	26	35	33	32	218	41	36	34	30	25	13	13	14	12
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
F Cleft Palate & Cleft Lip	155	6	14	15	14	15	91	9	11	15	10	15	7	9	10	5
F01 Cleft Palate	64	3	8	7	6	3	37	3	5	5	5	7	3	4	3	2
F02 Cleft Lip w & w/o Cleft Palate	91	3	6	8	8	12	54	6	6	10	5	8	4	5	7	3

Table 13
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	514	37	54	42	46	59	276	41	38	46	41	29	19	24	18	20
G01 Esophageal Atresia/ Tracheoesophageal Fistula	55	4	7	2	8	7	27	3	2	5	4	2	2	3	2	4
G02 Rectal and Large Intestinal Atresia/Stenosis	59	3	3	2	7	9	35	7	3	4	5	4	2	2	5	3
G03 Pyloric Stenosis	27	4	5	1	4	1	12	1	3	1	1	1	2	-	3	-
G04 Hirshsprung's Disease (congenital megacolon)	22	1	3	1	2	2	13	-	3	1	1	1	2	2	1	2
G05 Biliary Atresia	24	1	2	3	1	3	14	3	2	2	1	3	-	1	1	1
G99 Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	378	29	39	34	31	43	202	33	27	38	31	20	14	19	7	13
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
H Congenital Anomalies of the Genital and Urinary Systems	671	48	48	53	68	64	390	55	43	50	51	49	37	41	34	30
H01 Renal Agenesis/Hypoplasia	149	11	9	16	20	12	81	8	5	13	11	12	7	6	8	11
H02 Bladder Exstrophy	3	-	-	-	-	-	3	2	-	-	-	-	1	-	-	-
H03 Obstructive Genitourinary Defects	142	11	3	11	14	16	87	9	11	7	14	15	9	8	7	7
H04 Hypospadias & Epispadias	78	5	12	5	6	10	40	7	4	8	7	2	5	2	3	2
H99 All Other Congenital Anomalies of the Genital & Urinary Systems	514	37	33	41	49	52	302	43	37	38	38	36	30	36	24	20

Table 13
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
I Congenital Anomalies of the Musculoskeletal System	747	66	61	51	61	67	441	74	53	63	49	46	45	40	38	33
I01 Upper Limb Reduction Deformities	27	3	5	1	-	4	14	2	1	3	2	2	-	3	1	-
I02 Lower Limb Reduction Deformities	16	-	1	1	-	3	11	1	2	3	1	2	1	-	1	-
I03 Gastroschisis/Omphalocele	96	3	7	5	8	4	69	8	8	9	7	7	10	7	9	4
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	4	2	6	2
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	4	4	2	-
I03c Other & Unspecified Abdominal Wall Anomalies	75	3	7	5	7	4	49	8	8	9	5	5	5	3	3	3
I04 Congenital Hip Dislocation	25	2	4	4	-	2	13	2	3	2	1	1	3	1	-	-
I05 Diaphragmatic Hernia	94	6	2	6	10	6	64	8	7	9	6	8	5	5	8	8
I99 All Other Congenital Anomalies of the Musculoskeletal System	577	55	49	42	44	60	327	59	41	48	39	35	31	30	23	21
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
J Congenital Anomalies of the Integument	90	8	10	8	3	3	58	8	8	5	6	7	5	8	2	9
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
K Chromosomal Anomalies	483	51	38	37	44	41	272	45	29	22	36	36	23	33	24	24
K01 Trisomy 13	68	6	4	4	8	7	39	6	3	2	4	4	1	7	7	5
K02 Down Syndrome	157	17	16	14	16	14	80	16	7	5	15	12	7	6	3	9
K03 Trisomy 18	123	9	14	10	9	9	72	7	11	7	10	9	4	11	7	6
K99 All Other Chromosomal Anomalies	184	21	8	13	17	12	113	22	10	10	7	14	12	16	12	10
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
L Other and Unspecified Congenital Anomalies	685	62	56	50	65	74	378	46	40	38	33	33	48	45	50	45

Table 13
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
M Infectious Conditions Occurring in the Perinatal Period	171	13	20	11	20	12	95	9	13	10	11	20	8	12	6	6
M01 Syphilis	4	-	-	1	-	-	3	1	-	1	-	1	-	-	-	-
M02 Other Infections	167	13	20	10	20	12	92	8	13	9	11	19	8	12	6	6
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
N Familial/Congenital Neoplasms	1	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
O Endocrine/Metabolic Disorders	376	28	35	25	33	29	226	27	30	23	28	25	25	24	31	13
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
P Diseases of the Blood & Blood Forming Organs	245	19	22	13	19	14	158	24	20	10	17	22	21	15	15	14
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
Q Other Diseases of the Central and Peripheral Nervous System	376	47	32	32	33	33	199	35	35	38	16	22	12	20	13	8
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
R Other Diseases of the Eye	366	47	35	29	33	41	181	36	31	40	30	17	11	10	4	2
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
S Hearing Deficiency	152	14	12	15	14	16	81	20	9	10	7	10	8	8	7	2
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
T Other Diseases of the Heart & Circulatory System	571	63	38	39	43	39	349	34	53	59	41	44	29	35	39	15

Table 13
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
U Other Diseases of the Gastrointestinal System	404	34	36	31	32	33	238	31	25	25	33	29	32	27	20	16
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
V Other Diseases of the Genital and Urinary Systems	6	1	-	-	1	1	3	-	-	1	-	-	-	-	1	1
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
W Other Fetal/Placental Anomalies	5	-	-	-	-	-	5	5	-	-	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
Y Maternal Exposures Affecting Fetus	83	5	2	4	6	3	63	4	4	4	8	8	4	8	12	11
Y01 Fetal Alcohol Syndrome	4	-	-	1	1	1	1	-	-	-	-	-	-	-	-	1
Y99 Other Maternal Exposures Affecting the Fetus	79	5	2	3	5	2	62	4	4	4	8	8	4	8	12	10
Diagnostic Grouping	2000 to 2013	2000	2001	2002	2003	2004	2005 to 2013	2005	2006	2007	2008	2009	2010	2011	2012	2013
One or More Reportable Diagnosis	4,416	406	366	322	378	354	2,590	363	322	286	297	305	236	256	252	273

Notes:

Frequencies include all deaths within the first year of life to children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defect mortality rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. Columns do not add to total infant deaths born with birth defects. Some cases include diagnosis with multiple birth defects, and each birth defect diagnosis was counted in each appropriate grouping.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 14
Infant Deaths of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
A. Congenital Anomalies of the Central Nervous System	201	205	211	207	200	190	181	161	134	107	106	101
B. Congenital Anomalies of the Eye	44	46	49	45	43	37	32	28	24	21	20	16
C. Congenital Anomalies of the Ear, Face & Neck	25	25	23	29	25	26	21	24	21	16	14	9
D. Congenital Anomalies of the Heart & Circulatory System	445	462	461	466	428	417	421	423	388	335	311	311
E. Congenital Anomalies of the Respiratory System	178	187	199	207	192	184	151	135	120	110	102	94
F. Cleft Palate & Cleft Lip	35	43	44	38	35	35	36	40	32	31	26	24
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	133	142	147	146	138	125	125	116	89	72	61	62
H. Congenital Anomalies of the Genital and Urinary Systems	149	169	185	187	162	148	144	150	137	127	112	105
I. Congenital Anomalies of the Musculoskeletal System	178	173	179	202	194	190	165	158	140	131	123	111
J. Congenital Anomalies of the Integument	26	21	14	14	19	21	19	18	18	20	15	19
K. Chromosomal Anomalies	126	119	122	130	115	96	87	94	95	92	80	81
L. Other and Unspecified Congenital Anomalies	168	171	189	185	160	124	111	104	114	126	143	140

Table 14
Infant Deaths of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
Infectious Conditions												
M. Occurring in the Perinatal Period	44	51	43	41	34	32	34	41	39	40	26	24
N. Familial/Congenital Neoplasms	-	-	-	-	-	1	1	1	-	-	-	-
O. Endocrine/Metabolic Disorders	88	93	87	89	86	80	81	76	78	74	80	68
P. Diseases of the Blood & Blood Forming Organs	54	54	46	57	58	54	47	49	60	58	51	44
Q. Other Diseases of the Central and Peripheral Nervous System	111	97	98	101	103	108	89	76	50	54	45	41
R. Other Diseases of the Eye	111	97	103	110	108	107	101	87	58	38	25	16
S. Hearing Deficiency	41	41	45	50	45	39	26	27	25	26	23	17
T. Other Diseases of the Heart & Circulatory System	140	120	121	116	126	146	153	144	114	108	103	89
U. Other Diseases of the Gastrointestinal System	101	99	96	96	89	81	83	87	94	88	79	63
V. Other Diseases of the Genital and Urinary Systems	1	1	2	2	1	1	1	1	-	-	1	2
W. Other Fetal/Placental Anomalies	-	-	-	5	5	5	-	-	-	-	-	-
X. Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-
Y. Maternal Exposures Affecting Fetus	11	12	13	13	11	12	16	20	20	20	24	31
One or More Reportable Diagnosis	1,094	1,066	1,054	1,095	1,039	971	905	888	838	797	744	781

Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects mortality rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. Columns do not add to diagnostic group totals nor column totals due to cases with multiple diagnosed conditions that cross diagnostic groupings.

Conditions are reportable if identified within the first two years of a child's life. The mortality data in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 15
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
A. Congenital Anomalies of the Central Nervous System	201	205	211	207	200	190	181	161	134	107	106	101
A01. Anencephalus	32	24	30	23	22	13	16	18	20	17	16	24
A02. Spina Bifida w/o Anencephaly	11	11	9	14	12	11	7	8	8	7	5	3
A03. Hydrocephalus w/o Spina Bifida	58	62	60	68	69	71	66	57	42	29	25	26
A04. Encephalocele	5	7	6	10	7	9	8	8	6	3	4	3
A05. Microcephalus	52	55	57	46	48	54	51	42	30	27	24	18
A99. All Other CNS Anomalies	94	106	109	113	102	104	95	83	65	55	63	50
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
B. Congenital Anomalies of the Eye	44	46	49	45	43	37	32	28	24	21	20	16
B01. Anophthalmos/Microphthalmos	15	17	17	14	13	13	13	12	8	6	5	5
B02. Congenital Cataract	6	9	7	8	7	8	6	5	4	3	3	2
B03. Aniridia	-	-	-	1	1	1	-	-	-	-	-	1
B99. All Other Congenital Anomalies of the Eye	33	31	34	31	34	27	24	18	16	13	13	10
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
C. Congenital Anomalies of the Ear, Face & Neck	25	25	23	29	25	26	21	24	21	16	14	9
C01. Anotia/Microtia	2	2	2	2	1	1	2	3	4	4	3	1
C99. All Other Congenital Anomalies of the Ear, Face & Neck	24	25	22	28	24	26	20	22	18	13	12	8

Table 15
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
D. Congenital Anomalies of the Heart & Circulatory System	445	462	461	466	428	417	421	423	388	335	311	311
D01. Common Truncus	6	10	8	8	6	9	13	10	10	7	9	7
D02. Transposition of Great Vessels	24	19	26	27	29	29	27	24	23	22	23	15
D03. Tetralogy of Fallot	24	22	22	27	24	20	24	26	26	18	16	14
D04. Ventricular Septal Defect	101	99	110	100	90	80	96	91	83	58	58	44
D05. Atrial Septal Defect	145	164	168	168	149	162	181	178	155	126	131	121
D06. Endocardial Cushion Defect	27	27	30	39	36	34	31	30	26	20	15	15
D07. Pulmonary Valve Atresia & Stenosis	28	32	31	42	39	37	33	24	21	15	22	22
D08. Tricuspid Valve Atresia & Stenosis	10	7	4	5	4	6	9	8	7	6	5	5
D09. Ebstein's Anomaly	18	10	5	2	4	5	5	6	7	8	7	6
D10. Aortic Valve Stenosis	12	10	6	9	9	9	7	7	7	6	10	9
D11. Hypoplastic Left Heart Syndrome	50	47	42	42	38	40	44	53	46	37	29	40
D12. Patent Ductus Arteriosus	144	160	175	200	179	187	200	179	161	127	134	113
D13. Coarctation of Aorta	25	22	26	25	31	32	34	25	17	17	22	22
D14. Pulmonary Artery Anomalies	55	49	45	52	40	46	46	54	43	26	14	6
D99. All Other Congenital Anomalies of the Heart and Circulatory System	265	269	276	268	250	231	227	239	231	216	202	202
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
E. Congenital Anomalies of the Respiratory System	178	187	199	207	192	184	151	135	120	110	102	94
E01. Lung Agenesis/Hypoplasia	92	103	111	112	88	75	54	50	53	57	57	52
E02. Choanal Atresia	6	4	2	1	1	4	4	5	5	5	6	7
E99. All Other Congenital Anomalies of the Respiratory System	93	94	100	106	109	111	100	89	68	51	40	39
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
F. Cleft Palate & Cleft Lip	35	43	44	38	35	35	36	40	32	31	26	24
F01. Cleft Palate	18	21	16	12	11	13	15	17	15	14	10	9
F02. Cleft Lip w & w/o Cleft Palate	17	22	28	26	24	22	21	23	17	17	16	15

Table 15
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	133	142	147	146	138	125	125	116	89	72	61	62
G01. Esophageal Atresia/ Tracheoesophageal Fistula	13	17	17	18	12	10	11	11	8	7	7	9
G02. Rectal and Large Intestinal Atresia/Stenosis	8	12	18	23	19	14	12	13	11	8	9	10
G03. Pyloric Stenosis	10	10	6	6	5	5	5	3	4	3	5	3
G04. Hirshsprung's Disease (congenital megacolon)	5	6	5	4	5	4	5	3	4	5	5	5
G05. Biliary Atresia	6	6	7	7	8	7	5	6	4	4	2	3
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	102	104	108	107	103	98	96	89	65	53	40	39
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
H. Congenital Anomalies of the Genital and Urinary Systems	149	169	185	187	162	148	144	150	137	127	112	105
H01. Renal Agenesis/Hypoplasia	36	45	48	40	25	26	29	36	30	25	21	25
H02. Bladder Exstrophy	-	-	-	2	2	2	-	-	1	1	1	-
H03. Obstructive Genitourinary Defects	25	28	41	39	36	27	32	36	38	32	24	22
H04. Hypospadias & Epispadias	22	23	21	23	21	19	19	17	14	9	10	7
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	111	123	142	144	132	118	113	112	104	102	90	80

Table 15
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
I. Congenital Anomalies of the Musculoskeletal System	178	173	179	202	194	190	165	158	140	131	123	111
I01. Upper Limb Reduction Deformities	9	6	5	6	7	6	6	7	4	5	4	4
I02. Lower Limb Reduction Deformities	2	2	4	4	6	6	6	6	4	3	2	1
I03. Gastroschisis/Omphalocele	15	20	17	20	20	25	24	23	24	24	26	20
I03a. Omphalocele	---	---	---	---	---	---	---	---	---	---	12	10
I03b. Gastroschisis	---	---	---	---	---	---	---	---	---	---	10	6
I03c. Other & Unspecified Abdominal Wall Anomalies	15	19	16	19	20	25	22	19	15	13	11	9
I04. Congenital Hip Dislocation	10	8	6	4	7	7	6	4	5	5	4	1
I05. Diaphragmatic Hernia	14	18	22	24	21	24	22	23	19	18	18	21
I99. All Other Congenital Anomalies of the Musculoskeletal System	146	135	146	163	160	148	128	122	105	96	84	74
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
J. Congenital Anomalies of the Integument	26	21	14	14	19	21	19	18	18	20	15	19
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
K. Chromosomal Anomalies	126	119	122	130	115	96	87	94	95	92	80	81
K01. Trisomy 13	14	16	19	21	16	11	9	10	9	12	15	19
K02. Down Syndrome	47	46	44	46	37	28	27	32	34	25	16	18
K03. Trisomy 18	33	33	28	25	27	25	28	26	23	24	22	24
K99. All Other Chromosomal Anomalies	42	38	42	51	44	42	27	31	33	42	40	38
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
L. Other and Unspecified Congenital Anomalies	168	171	189	185	160	124	111	104	114	126	143	140

Table 15
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
M. Infectious Conditions Occurring in the Perinatal Period	44	51	43	41	34	32	34	41	39	40	26	24
M01. Syphilis	1	1	1	1	1	2	1	2	1	1	-	-
M02. Other Infections	43	50	42	40	33	30	33	39	38	39	26	24
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
N. Familial/Congenital Neoplasms	-	-	-	-	-	1	1	1	-	-	-	-
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
O. Endocrine/Metabolic Disorders	88	93	87	89	86	80	81	76	78	74	80	68
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
P. Diseases of the Blood & Blood Forming Organs	54	54	46	57	58	54	47	49	60	58	51	44
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
Q. Other Diseases of the Central and Peripheral Nervous System	111	97	98	101	103	108	89	76	50	54	45	41
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
R. Other Diseases of the Eye	111	97	103	110	108	107	101	87	58	38	25	16
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
S. Hearing Deficiency	41	41	45	50	45	39	26	27	25	26	23	17
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
T. Other Diseases of the Heart & Circulatory System	140	120	121	116	126	146	153	144	114	108	103	89

Table 15
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
U. Other Diseases of the Gastrointestinal System	101	99	96	96	89	81	83	87	94	88	79	63
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
V. Other Diseases of the Genital and Urinary Systems	1	1	2	2	1	1	1	1	-	-	1	2
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
W. Other Fetal/Placental Anomalies	-	-	-	5	5	5	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
X. Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
Y. Maternal Exposures Affecting Fetus	11	12	13	13	11	12	16	20	20	20	24	31
Y01. Fetal Alcohol Syndrome	1	2	3	2	1	-	-	-	-	-	-	1
Y99. Other Maternal Exposures Affecting the Fetus	10	10	10	11	10	12	16	20	20	20	24	30
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
One or More Reportable Diagnosis	1,094	1,066	1,054	1,095	1,039	971	905	888	838	797	744	781

Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Columns do not add to diagnostic group totals nor column totals due to cases with multiple diagnosed conditions that cross diagnostic groupings.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 16
Mortality Rates of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
A. Congenital Anomalies of the Central Nervous System	130.6	132.3	133.5	129.7	120.7	118.8	118.0	114.8	100.6	83.7	82.9	80.2
B. Congenital Anomalies of the Eye	38.6	40.2	43.2	40.5	41.4	37.6	34.9	31.8	29.1	25.7	25.4	19.8
C. Congenital Anomalies of the Ear, Face & Neck	35.8	36.0	34.8	43.3	38.7	42.1	37.2	45.8	40.1	32.2	27.6	17.5
D. Congenital Anomalies of the Heart & Circulatory System	65.5	65.5	62.8	61.5	54.0	53.8	56.2	62.5	61.7	56.6	51.5	51.9
E. Congenital Anomalies of the Respiratory System	100.7	94.1	96.8	94.7	77.8	69.3	63.1	77.5	90.1	83.6	70.0	65.7
F. Cleft Palate & Cleft Lip	55.5	66.0	71.1	61.5	56.0	55.9	59.5	69.2	59.4	59.2	54.1	51.6
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	56.1	63.0	69.3	72.1	63.7	57.7	57.6	58.4	49.0	43.0	37.6	38.6
H. Congenital Anomalies of the Genital and Urinary Systems	25.7	30.3	33.3	32.9	27.8	25.6	27.3	33.5	35.6	32.5	26.2	22.8
I. Congenital Anomalies of the Musculoskeletal System	26.8	25.9	28.0	31.7	29.0	27.1	25.7	29.6	29.2	26.0	20.6	17.0
J. Congenital Anomalies of the Integument	28.6	23.2	13.4	10.3	8.2	8.9	6.2	6.0	5.3	6.5	5.6	5.6
K. Chromosomal Anomalies	148.6	139.7	143.5	150.6	131.0	112.8	103.6	116.3	116.9	115.9	101.0	110.7
L. Other and Unspecified Congenital Anomalies	83.0	81.2	95.1	95.1	93.9	86.3	104.4	134.2	50.2	32.8	25.3	24.0

Table 16
Mortality Rates of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three–year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
Infectious Conditions												
M. Occurring in the Perinatal Period	21.7	24.2	21.6	27.2	33.9	63.7	58.3	72.7	62.3	67.5	46.8	51.8
N. Familial/Congenital Neoplasms	–	–	–	–	–	*	*	*	–	–	–	–
O. Endocrine/Metabolic Disorders	61.7	68.6	67.2	67.7	61.1	55.8	55.8	57.4	56.1	54.0	50.2	41.8
P. Diseases of the Blood & Blood Forming Organs	74.5	73.0	60.4	70.1	68.6	63.3	56.8	63.8	72.6	65.3	50.4	41.9
Q. Other Diseases of the Central and Peripheral Nervous System	100.9	92.0	93.7	96.4	94.9	103.6	90.3	87.6	63.0	67.6	56.5	53.1
R. Other Diseases of the Eye	51.7	46.3	49.5	51.9	50.3	49.6	49.9	48.7	38.5	27.5	18.8	12.7
S. Hearing Deficiency	25.8	24.7	30.1	35.7	32.0	28.0	19.7	21.8	18.5	14.5	10.0	6.2
T. Other Diseases of the Heart & Circulatory System	97.6	90.0	97.1	97.6	100.7	109.5	111.1	112.7	92.2	91.8	79.7	71.7
U. Other Diseases of the Gastrointestinal System	37.6	38.1	39.4	39.3	36.7	33.8	36.7	44.0	52.1	51.8	41.8	32.1
V. Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	–	–	*	*
W. Other Fetal/Placental Anomalies	–	–	–	*	*	*	–	–	–	–	–	–
X. Other Musculoskeletal System Diseases	–	–	–	–	–	–	–	–	–	–	–	–
Y. Maternal Exposures Affecting Fetus	23.1	28.6	32.2	30.0	22.4	23.8	29.4	35.0	29.9	23.8	21.7	23.0
One or More Reportable Diagnosis	35.5	35.0	35.4	35.8	32.0	29.9	29.2	32.4	30.9	28.2	23.6	23.1

Notes:

Rates are Per 1,000 Michigan Born Resident Live Births. Rates represent the infant mortality rate for children with a diagnosed birth defect. The rates include all deaths within the first year of life to children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

*: Figure does not meet standards of reliability or precision.

Conditions are reportable if identified within the first two years of a child's life. The mortality data in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 17
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
A. Congenital Anomalies of the Central Nervous System	130.6	132.3	133.5	129.7	120.7	118.8	118.0	114.8	100.6	83.7	82.9	80.2
A01. Anencephalus	780.5	631.6	600.0	522.7	564.1	500.0	484.8	500.0	512.8	500.0	516.1	631.6
A02. Spina Bifida w/o Anencephaly	69.2	67.9	58.4	81.4	62.8	58.2	36.8	49.7	52.3	51.5	*	*
A03. Hydrocephalus w/o Spina Bifida	136.5	151.6	153.8	176.6	178.8	186.8	177.4	162.9	135.0	108.2	102.0	116.1
A04. Encephalocele	*	179.5	146.3	200.0	142.9	187.5	216.2	235.3	240.0	*	*	*
A05. Microcephalus	136.5	146.3	148.4	122.3	118.8	132.0	140.9	135.5	102.4	84.1	74.1	54.4
A99. All Other CNS Anomalies	123.7	129.6	126.7	127.1	112.2	120.1	112.7	105.7	86.2	76.1	84.3	68.4
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
B. Congenital Anomalies of the Eye	38.6	40.2	43.2	40.5	41.4	37.6	34.9	31.8	29.1	25.7	25.4	19.8
B01. Anophthalmos/Microphthalmos	178.6	186.8	200.0	184.2	185.7	188.4	213.1	235.3	190.5	136.4	*	*
B02. Congenital Cataract	54.5	83.3	66.0	75.5	78.7	94.1	77.9	*	*	*	*	*
B03. Aniridia	-	-	-	*	*	*	-	-	-	-	-	*
B99. All Other Congenital Anomalies of the Eye	31.9	30.1	33.3	30.8	35.7	30.1	28.6	22.4	21.2	17.5	18.2	13.3
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
C. Congenital Anomalies of the Ear, Face & Neck	35.8	36.0	34.8	43.3	38.7	42.1	37.2	45.8	40.1	32.2	27.6	17.5
C01. Anotia/Microtia	*	*	*	*	*	*	*	*	*	*	*	*
C99. All Other Congenital Anomalies of the Ear, Face & Neck	35.2	36.8	34.3	42.6	37.9	42.9	36.6	43.7	35.8	27.1	24.7	16.0

Table 17
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
D. Congenital Anomalies of the Heart & Circulatory System	65.5	65.5	62.8	61.5	54.0	53.8	56.2	62.5	61.7	56.6	51.5	51.9
D01. Common Truncus	136.4	172.4	153.8	140.4	120.0	180.0	240.7	238.1	204.1	155.6	163.6	155.6
D02. Transposition of Great Vessels	125.0	105.0	142.1	133.7	133.0	130.0	135.0	125.7	119.8	119.6	127.8	93.2
D03. Tetralogy of Fallot	112.7	100.5	106.3	131.1	120.0	97.1	111.1	136.8	131.3	94.2	78.8	78.2
D04. Ventricular Septal Defect	61.9	60.7	66.7	59.4	52.5	47.3	58.4	61.4	59.8	45.1	41.8	33.0
D05. Atrial Septal Defect	54.7	58.1	54.5	50.1	40.8	44.9	51.4	55.1	50.1	41.0	39.3	35.8
D06. Endocardial Cushion Defect	126.2	114.4	125.5	166.0	157.2	157.4	146.2	163.0	145.3	113.0	78.5	85.7
D07. Pulmonary Valve Atresia & Stenosis	63.5	67.9	70.8	87.1	82.1	75.1	73.2	63.8	60.2	46.2	61.5	71.2
D08. Tricuspid Valve Atresia & Stenosis	138.9	90.9	*	*	*	113.2	173.1	153.8	137.3	133.3	*	*
D09. Ebstein's Anomaly	151.3	98.0	*	*	*	*	*	230.8	250.0	320.0	225.8	206.9
D10. Aortic Valve Stenosis	117.6	105.3	57.7	84.1	88.2	93.8	77.8	87.5	101.4	88.2	135.1	123.3
D11. Hypoplastic Left Heart Syndrome	294.1	262.6	256.1	245.6	231.7	242.4	291.4	333.3	326.2	274.1	210.1	268.5
D12. Patent Ductus Arteriosus	76.7	77.0	80.3	85.6	73.0	77.3	85.1	86.4	83.1	68.2	70.3	66.0
D13. Coarctation of Aorta	106.4	92.8	104.8	103.7	123.5	123.1	126.4	110.6	83.7	92.4	100.5	102.3
D14. Pulmonary Artery Anomalies	65.1	56.2	54.7	63.0	46.9	53.6	57.1	74.4	64.2	48.2	42.0	38.5
D99. All Other Congenital Anomalies of the Heart and Circulatory System	93.4	90.2	84.5	81.9	73.0	71.5	72.3	87.6	93.4	97.3	92.5	97.2
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
E. Congenital Anomalies of the Respiratory System	100.7	94.1	96.8	94.7	77.8	69.3	63.1	77.5	90.1	83.6	70.0	65.7
E01. Lung Agenesis/Hypoplasia	372.5	327.0	313.6	306.8	306.6	317.8	251.2	223.2	197.0	213.5	234.6	293.8
E02. Choanal Atresia	77.9	*	*	*	*	*	*	*	*	*	95.2	107.7
E99. All Other Congenital Anomalies of the Respiratory System	60.9	55.4	57.5	56.8	49.1	45.2	45.4	58.3	63.3	48.2	32.6	31.1
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
F. Cleft Palate & Cleft Lip	55.5	66.0	71.1	61.5	56.0	55.9	59.5	69.2	59.4	59.2	54.1	51.6
F01. Cleft Palate	80.0	92.9	76.9	55.8	48.0	54.9	65.8	77.6	81.1	86.4	74.6	61.2
F02. Cleft Lip w & w/o Cleft Palate	41.9	51.6	68.1	64.5	60.6	56.6	55.7	64.1	48.0	47.0	46.1	47.2

Table 17
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	56.1	63.0	69.3	72.1	63.7	57.7	57.6	58.4	49.0	43.0	37.6	38.6
G01. Esophageal Atresia/ Tracheoesophageal Fistula	104.0	124.1	124.1	133.3	96.8	84.7	105.8	132.5	112.7	101.4	88.6	126.8
G02. Rectal and Large Intestinal Atresia/Stenosis	39.8	64.2	95.2	124.3	95.0	73.3	65.2	83.9	70.5	49.7	55.9	63.7
G03. Pyloric Stenosis	12.2	12.9	9.0	9.9	*	*	*	*	*	*	*	*
G04. Hirshsprung's Disease (congenital megacolon)	*	45.1	*	*	*	*	*	*	*	*	*	*
G05. Biliary Atresia	146.3	146.3	159.1	152.2	190.5	200.0	*	150.0	*	*	*	*
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	85.2	92.0	97.3	98.1	86.1	81.1	81.1	83.0	68.3	60.0	46.6	44.4
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
H. Congenital Anomalies of the Genital and Urinary Systems	25.7	30.3	33.3	32.9	27.8	25.6	27.3	33.5	35.6	32.5	26.2	22.8
H01. Renal Agenesis/Hypoplasia	140.1	191.5	213.3	190.5	129.5	126.8	133.0	173.9	164.8	165.6	129.6	138.1
H02. Bladder Exstrophy	-	-	-	*	*	*	-	-	*	*	*	-
H03. Obstructive Genitourinary Defects	29.6	31.7	45.8	42.1	38.6	29.2	36.6	47.0	56.4	47.8	30.9	26.5
H04. Hypospadias & Epispadias	17.6	19.4	18.0	18.6	17.7	16.2	16.8	14.9	12.5	8.0	8.8	6.2
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	23.2	26.5	30.4	30.3	26.6	24.1	25.7	31.5	35.8	34.7	27.1	21.9

Table 17
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
I. Congenital Anomalies of the Musculoskeletal System	26.8	25.9	28.0	31.7	29.0	27.1	25.7	29.6	29.2	26.0	20.6	17.0
I01. Upper Limb Reduction Deformities	81.8	57.7	*	68.2	86.4	66.7	60.6	71.4	*	*	*	*
I02. Lower Limb Reduction Deformities	*	*	*	*	72.3	75.9	88.2	96.8	*	*	*	*
I03. Gastroschisis/Omphalocele	92.6	111.7	90.9	90.5	81.3	99.2	97.2	102.7	100.0	96.4	97.7	76.0
I03a. Omphalocele	---	---	---	---	---	---	---	---	---	---	179.1	161.3
I03b. Gastroschisis	---	---	---	---	---	---	---	---	---	---	63.7	44.4
I03c. Other & Unspecified Abdominal Wall Anomalies	93.2	107.3	86.0	86.4	81.3	99.2	89.8	90.5	93.2	119.3	142.9	101.1
I04. Congenital Hip Dislocation	16.1	13.6	11.5	*	16.3	18.3	14.7	*	*	*	*	*
I05. Diaphragmatic Hernia	120.7	142.9	167.9	179.1	153.3	183.2	166.7	184.0	153.2	146.3	171.4	233.3
I99. All Other Congenital Anomalies of the Musculoskeletal System	24.6	22.5	25.3	28.3	26.3	23.0	22.0	25.5	25.0	21.6	15.6	12.4
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
J. Congenital Anomalies of the Integument	28.6	23.2	13.4	10.3	8.2	8.9	6.2	6.0	5.3	6.5	5.6	5.6
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
K. Chromosomal Anomalies	148.6	139.7	143.5	150.6	131.0	112.8	103.6	116.3	116.9	115.9	101.0	110.7
K01. Trisomy 13	583.3	640.0	703.7	636.4	615.4	550.0	692.3	714.3	642.9	666.7	681.8	730.8
K02. Down Syndrome	95.5	94.1	89.8	93.7	69.5	55.8	56.4	74.6	75.2	56.6	35.2	44.6
K03. Trisomy 18	600.0	471.4	430.8	409.8	529.4	500.0	491.2	472.7	460.0	558.1	536.6	521.7
K99. All Other Chromosomal Anomalies	128.0	118.8	133.8	157.9	145.7	133.8	86.3	92.0	102.2	125.7	122.3	120.6
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
L. Other and Unspecified Congenital Anomalies	83.0	81.2	95.1	95.1	93.9	86.3	104.4	134.2	50.2	32.8	25.3	24.0

Table 17
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
M. Infectious Conditions Occurring in the Perinatal Period	21.7	24.2	21.6	27.2	33.9	63.7	58.3	72.7	62.3	67.5	46.8	51.8
M01. Syphilis	*	*	*	*	*	*	*	*	*	*	–	–
M02. Other Infections	75.7	85.5	70.5	75.6	62.3	63.7	60.0	74.3	64.6	68.9	48.1	55.2
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
N. Familial/Congenital Neoplasms	–	–	–	–	–	*	*	*	–	–	–	–
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
O. Endocrine/Metabolic Disorders	61.7	68.6	67.2	67.7	61.1	55.8	55.8	57.4	56.1	54.0	50.2	41.8
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
P. Diseases of the Blood & Blood Forming Organs	74.5	73.0	60.4	70.1	68.6	63.3	56.8	63.8	72.6	65.3	50.4	41.9
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
Q. Other Diseases of the Central and Peripheral Nervous System	100.9	92.0	93.7	96.4	94.9	103.6	90.3	87.6	63.0	67.6	56.5	53.1
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
R. Other Diseases of the Eye	51.7	46.3	49.5	51.9	50.3	49.6	49.9	48.7	38.5	27.5	18.8	12.7
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
S. Hearing Deficiency	25.8	24.7	30.1	35.7	32.0	28.0	19.7	21.8	18.5	14.5	10.0	6.2
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
T. Other Diseases of the Heart & Circulatory System	97.6	90.0	97.1	97.6	100.7	109.5	111.1	112.7	92.2	91.8	79.7	71.7

Table 17
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000–2013,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
U. Other Diseases of the Gastrointestinal System	37.6	38.1	39.4	39.3	36.7	33.8	36.7	44.0	52.1	51.8	41.8	32.1
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
V. Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	-	-	*	*
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
W. Other Fetal/Placental Anomalies	-	-	-	*	*	*	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
X. Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
Y. Maternal Exposures Affecting Fetus	23.1	28.6	32.2	30.0	22.4	23.8	29.4	35.0	29.9	23.8	21.7	23.0
Y01. Fetal Alcohol Syndrome	*	*	*	*	*	-	-	-	-	-	-	*
Y99. Other Maternal Exposures Affecting the Fetus	24.5	27.4	28.2	28.3	22.7	26.1	31.3	36.1	30.7	24.3	22.1	22.7
Diagnostic Grouping	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006	2005 to 2007	2006 to 2008	2007 to 2009	2008 to 2010	2009 to 2011	2010 to 2012	2011 to 2013
One or More Reportable Diagnosis	35.5	35.0	35.4	35.8	32.0	29.9	29.2	32.4	30.9	28.2	23.6	23.1

Notes:

Rates are per 1,000 Michigan Born Resident Live Births. Rates represent the infant mortality rate for children with a diagnosed birth defect. The rates include all deaths within the first year of life to children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

*: Figure does not meet standards of reliability or precision.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 18
Infant Deaths of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
A. Congenital Anomalies of the Central Nervous System	368	383	398	388	403	408	405	401	388	361	324	288	267	235
B. Congenital Anomalies of the Eye	72	74	81	82	88	89	89	86	77	71	61	53	48	40
C. Congenital Anomalies of the Ear, Face & Neck	43	49	54	49	48	54	50	49	50	49	47	37	38	30
D. Congenital Anomalies of the Heart & Circulatory System	901	905	906	919	920	911	890	878	887	851	805	756	734	699
E. Congenital Anomalies of the Respiratory System	323	327	345	369	375	385	379	383	358	327	304	261	237	214
F. Cleft Palate & Cleft Lip	70	65	66	68	73	73	78	79	74	75	67	67	66	56
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	214	227	241	251	276	279	280	272	271	254	214	197	177	151
H. Congenital Anomalies of the Genital and Urinary Systems	293	283	288	311	325	336	331	333	331	312	285	271	262	242
I. Congenital Anomalies of the Musculoskeletal System	367	363	357	362	371	380	367	369	367	352	330	296	281	251
J. Congenital Anomalies of the Integument	35	37	37	36	37	40	40	35	33	37	39	39	33	37
K. Chromosomal Anomalies	242	242	238	251	256	256	234	218	217	209	191	179	174	176
L. Other and Unspecified Congenital Anomalies	287	307	313	335	361	353	331	313	296	264	238	237	247	254

Table 18
Infant Deaths of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
M. Infectious Conditions Occurring in the Perinatal Period	63	77	79	89	92	85	85	75	75	75	71	74	67	63
N. Familial/Congenital Neoplasms	2	2	2	2	1	-	-	1	1	1	1	1	1	-
O. Endocrine/Metabolic Disorders	173	174	170	172	174	177	179	167	170	162	158	155	156	146
P. Diseases of the Blood & Blood Forming Organs	144	133	125	122	111	111	112	100	104	107	114	105	100	104
Q. Other Diseases of the Central and Peripheral Nervous System	245	239	231	229	222	212	200	206	190	179	158	143	121	91
R. Other Diseases of the Eye	195	199	200	201	213	221	205	210	211	195	165	139	112	74
S. Hearing Deficiency	50	51	62	69	74	91	86	84	76	72	64	52	50	42
T. Other Diseases of the Heart & Circulatory System	300	290	298	299	291	256	246	267	269	270	260	261	247	203
U. Other Diseases of the Gastrointestinal System	231	223	217	202	200	197	188	177	179	176	175	171	166	157
V. Other Diseases of the Genital and Urinary Systems	2	2	1	2	3	3	2	3	3	2	1	1	2	2
W. Other Fetal/Placental Anomalies	-	-	-	-	-	5	5	5	5	5	5	-	-	-
X. Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y. Maternal Exposures Affecting Fetus	25	22	20	25	26	24	23	25	29	31	32	36	44	51
One or More Reportable Diagnosis	2,225	2,224	2,199	2,194	2,198	2,189	2,105	2,025	2,000	1,927	1,809	1,702	1,632	1,619

Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects mortality rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details. Columns do not add to diagnostic group totals nor column totals due to cases with multiple diagnosed conditions that cross diagnostic groupings.

Conditions are reportable if identified within the first two years of a child's life. The mortality data in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 19
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
A. Congenital Anomalies of the Central Nervous System	368	383	398	388	403	408	405	401	388	361	324	288	267	235
A01. Anencephalus	46	43	53	51	54	55	46	43	39	40	33	33	34	44
A02. Spina Bifida w/o Anencephaly	24	27	25	24	22	25	23	20	21	20	19	14	13	11
A03. Hydrocephalus w/o Spina Bifida	115	121	119	119	124	126	131	131	134	126	113	95	82	68
A04. Encephalocele	15	15	13	13	12	15	14	15	18	15	15	11	12	9
A05. Microcephalus	85	85	98	96	102	98	103	111	97	90	84	78	66	48
A99. All Other CNS Anomalies	176	185	193	189	200	207	208	213	208	185	169	150	146	115
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
B. Congenital Anomalies of the Eye	72	74	81	82	88	89	89	86	77	71	61	53	48	40
B01. Anophthalmos/Microphthalmos	17	20	25	27	26	29	30	30	27	25	21	19	17	13
B02. Congenital Cataract	13	13	13	14	13	14	16	15	14	12	12	9	8	6
B03. Aniridia	-	-	-	-	-	1	1	1	1	1	1	-	-	1
B99. All Other Congenital Anomalies of the Eye	49	53	57	56	65	64	65	61	55	52	43	37	31	26
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
C. Congenital Anomalies of the Ear, Face & Neck	43	49	54	49	48	54	50	49	50	49	47	37	38	30
C01. Anotia/Microtia	2	3	3	4	4	4	3	3	4	4	5	6	6	5
C99. All Other Congenital Anomalies of the Ear, Face & Neck	41	47	52	47	46	52	49	48	48	46	44	33	34	26

Table 19
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
D. Congenital Anomalies of the Heart & Circulatory System	901	905	906	919	920	911	890	878	887	851	805	756	734	699
D01. Common Truncus	13	13	14	15	14	14	16	17	21	16	19	20	19	17
D02. Transposition of Great Vessels	57	56	57	54	57	51	48	55	54	53	52	49	47	38
D03. Tetralogy of Fallot	66	63	60	60	54	51	46	42	51	50	46	42	42	40
D04. Ventricular Septal Defect	202	195	203	208	215	201	189	190	196	181	163	154	149	127
D05. Atrial Septal Defect	250	262	278	295	299	313	313	330	349	327	317	307	309	276
D06. Endocardial Cushion Defect	64	61	57	60	65	66	63	64	70	66	60	51	45	41
D07. Pulmonary Valve Atresia & Stenosis	82	84	79	78	69	70	71	68	75	63	58	48	46	43
D08. Tricuspid Valve Atresia & Stenosis	26	26	24	23	19	15	11	10	14	12	13	15	13	12
D09. Ebstein's Anomaly	16	21	26	25	25	20	14	10	7	10	12	13	13	13
D10. Aortic Valve Stenosis	23	26	28	24	16	21	19	15	16	16	16	13	17	16
D11. Hypoplastic Left Heart Syndrome	104	111	111	108	100	92	85	82	86	91	86	81	82	86
D12. Patent Ductus Arteriosus	312	303	300	311	325	344	339	362	400	358	348	327	313	274
D13. Coarctation of Aorta	45	43	51	52	54	50	53	58	59	56	49	51	47	39
D14. Pulmonary Artery Anomalies	116	122	116	118	112	107	89	91	98	94	89	72	68	49
D99. All Other Congenital Anomalies of the Heart and Circulatory System	535	538	545	539	542	533	519	507	495	489	462	443	441	433
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
E. Congenital Anomalies of the Respiratory System	323	327	345	369	375	385	379	383	358	327	304	261	237	214
E01. Lung Agenesis/Hypoplasia	204	201	199	220	212	204	191	186	166	138	128	111	107	105
E02. Choanal Atresia	11	12	14	10	8	7	5	6	5	6	9	9	11	12
E99. All Other Congenital Anomalies of the Respiratory System	121	129	151	162	179	199	203	211	206	198	179	151	129	107
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
F. Cleft Palate & Cleft Lip	70	65	66	68	73	73	78	79	74	75	67	67	66	56
F01. Cleft Palate	24	25	26	30	29	30	32	29	27	28	28	29	27	24
F02. Cleft Lip w & w/o Cleft Palate	46	40	40	38	44	43	46	50	47	47	39	38	39	32

Table 19
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	214	227	241	251	276	279	280	272	271	254	214	197	177	151
G01. Esophageal Atresia/ Tracheoesophageal Fistula	25	26	26	27	32	31	29	27	29	23	18	18	18	17
G02. Rectal and Large Intestinal Atresia/Stenosis	26	21	20	25	28	31	31	32	35	32	25	20	22	21
G03. Pyloric Stenosis	15	18	18	18	18	16	15	11	11	8	9	8	8	7
G04. Hirshsprung's Disease (congenital megacolon)	4	6	7	9	10	9	11	9	9	8	8	10	8	9
G05. Biliary Atresia	11	10	8	8	10	13	14	14	12	14	11	9	8	7
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	157	170	183	188	206	209	207	206	203	192	163	149	129	104
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
H. Congenital Anomalies of the Genital and Urinary Systems	293	283	288	311	325	336	331	333	331	312	285	271	262	242
H01. Renal Agenesis/Hypoplasia	77	70	71	83	80	76	70	74	69	61	56	54	57	55
H02. Bladder Exstrophy	2	2	2	2	1	2	2	2	2	2	3	1	1	1
H03. Obstructive Genitourinary Defects	49	42	46	52	61	64	64	68	71	72	65	64	60	60
H04. Hypospadias & Epispadias	22	33	36	36	41	45	44	40	42	38	33	28	27	21
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	229	216	218	233	249	255	255	260	257	244	222	215	202	184

Table 19
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
I. Congenital Anomalies of the Musculoskeletal System	367	363	357	362	371	380	367	369	367	352	330	296	281	251
101. Upper Limb Reduction Deformities	12	14	13	11	15	15	13	11	12	14	10	11	11	8
102. Lower Limb Reduction Deformities	6	7	7	5	7	6	8	10	10	12	10	9	8	5
103. Gastroschisis/Omphalocele	34	34	34	35	32	35	40	42	44	43	49	48	49	44
103a. Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	---	---
103b. Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	---	---
103c. Other & Unspecified Abdominal Wall Anomalies	34	34	34	34	31	34	39	41	41	39	40	35	30	24
104. Congenital Hip Dislocation	18	19	21	16	16	14	15	13	10	11	12	11	8	6
105. Diaphragmatic Hernia	50	41	39	36	40	38	39	46	46	44	43	40	41	40
199. All Other Congenital Anomalies of the Musculoskeletal System	282	283	279	285	298	309	295	294	291	282	253	224	206	179
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
J. Congenital Anomalies of the Integument	35	37	37	36	37	40	40	35	33	37	39	39	33	37
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
K. Chromosomal Anomalies	242	242	238	251	256	256	234	218	217	209	191	179	174	176
K01. Trisomy 13	35	30	25	28	32	35	32	30	30	26	20	21	25	28
K02. Down Syndrome	68	72	76	84	91	93	83	72	73	69	62	52	48	52
K03. Trisomy 18	65	65	66	67	65	58	60	53	53	53	48	52	48	47
K99. All Other Chromosomal Anomalies	87	89	88	93	89	93	82	84	78	75	75	69	71	71
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
L. Other and Unspecified Congenital Anomalies	287	307	313	335	361	353	331	313	296	264	238	237	247	254

Table 19
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
M. Infectious Conditions Occurring in the Perinatal Period	63	77	79	89	92	85	85	75	75	75	71	74	67	63
M01. Syphilis	3	2	3	1	1	2	2	3	2	3	3	2	2	1
M02. Other Infections	60	75	76	88	91	83	83	72	73	72	68	72	65	62
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
N. Familial/Congenital Neoplasms	2	2	2	2	1	-	-	1	1	1	1	1	1	-
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
O. Endocrine/Metabolic Disorders	173	174	170	172	174	177	179	167	170	162	158	155	156	146
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
P. Diseases of the Blood & Blood Forming Organs	144	133	125	122	111	111	112	100	104	107	114	105	100	104
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
Q. Other Diseases of the Central and Peripheral Nervous System	245	239	231	229	222	212	200	206	190	179	158	143	121	91
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
R. Other Diseases of the Eye	195	199	200	201	213	221	205	210	211	195	165	139	112	74
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
S. Hearing Deficiency	50	51	62	69	74	91	86	84	76	72	64	52	50	42
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
T. Other Diseases of the Heart & Circulatory System	300	290	298	299	291	256	246	267	269	270	260	261	247	203

Table 19
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
U. Other Diseases of the Gastrointestinal System	231	223	217	202	200	197	188	177	179	176	175	171	166	157
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
V. Other Diseases of the Genital and Urinary Systems	2	2	1	2	3	3	2	3	3	2	1	1	2	2
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
W. Other Fetal/Placental Anomalies	-	-	-	-	-	5	5	5	5	5	5	-	-	-
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
X. Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
Y. Maternal Exposures Affecting Fetus	25	22	20	25	26	24	23	25	29	31	32	36	44	51
Y01. Fetal Alcohol Syndrome	9	7	5	5	6	3	3	3	2	1	-	-	-	1
Y99. Other Maternal Exposures Affecting the Fetus	16	15	15	20	20	21	20	22	27	30	32	36	44	50
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
One or More Reportable Diagnosis	2,225	2,224	2,199	2,194	2,198	2,189	2,105	2,025	2,000	1,927	1,809	1,702	1,632	1,619

Notes:

Frequencies include all children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. This enables the calculation of birth defects prevalence rates. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Columns do not add to diagnostic group totals nor column totals due to cases with multiple diagnosed conditions that cross diagnostic groupings.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 20
Mortality Rates of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
A. Congenital Anomalies of the Central Nervous System	146.3	146.2	142.2	134.1	132.0	130.1	126.3	126.1	124.0	118.0	110.5	102.4	99.6	90.7
B. Congenital Anomalies of the Eye	39.3	38.1	38.7	37.1	39.3	39.5	40.8	40.6	37.9	37.0	33.7	30.5	28.8	24.5
C. Congenital Anomalies of the Ear, Face & Neck	36.7	41.3	42.8	38.5	37.1	39.4	37.3	38.3	40.5	41.9	41.2	34.9	36.9	28.9
D. Congenital Anomalies of the Heart & Circulatory System	73.4	71.6	70.0	69.3	66.5	63.4	59.4	58.2	58.9	57.9	57.4	56.4	57.3	56.9
E. Congenital Anomalies of the Respiratory System	142.3	127.3	119.9	111.5	103.3	97.4	85.1	81.3	78.2	77.7	76.2	70.4	74.1	77.5
F. Cleft Palate & Cleft Lip	54.4	49.8	50.6	52.6	57.1	58.4	61.1	63.5	60.5	62.3	57.5	59.3	62.3	55.8
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	50.4	51.3	53.6	56.1	61.9	63.4	63.3	63.4	64.6	61.1	53.7	51.2	49.1	44.1
H. Congenital Anomalies of the Genital and Urinary Systems	31.1	28.7	27.7	28.9	29.1	29.3	29.0	29.4	30.2	30.2	29.6	29.5	29.9	28.6
I. Congenital Anomalies of the Musculoskeletal System	35.1	32.8	30.3	29.5	29.5	29.2	27.4	27.5	28.7	29.2	28.0	25.9	24.8	22.2
J. Congenital Anomalies of the Integument	18.9	20.5	20.8	20.4	18.9	17.6	12.4	10.3	7.4	6.9	6.8	6.3	5.8	5.5
K. Chromosomal Anomalies	157.3	151.8	148.3	151.8	150.1	149.6	135.3	128.2	127.4	124.0	114.8	109.5	108.8	113.9
L. Other and Unspecified Congenital Anomalies	135.5	115.7	102.0	96.7	95.6	88.9	86.9	91.4	98.4	106.5	64.2	48.3	38.4	31.4

Table 20
Mortality Rates of Michigan Children with Reported Birth Defects
by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
Infectious Conditions														
M. Occurring in the Perinatal Period	29.7	29.0	25.7	25.7	24.4	24.1	27.3	30.1	35.9	47.9	62.9	62.9	59.8	57.9
N. Familial/Congenital Neoplasms	*	*	*	*	*	–	–	*	*	*	*	*	*	–
O. Endocrine/Metabolic Disorders	80.8	74.9	68.8	65.6	64.7	64.6	64.8	61.2	61.5	59.3	55.9	54.9	53.4	48.4
P. Diseases of the Blood & Blood Forming Organs	114.4	106.3	94.6	87.2	76.6	72.2	70.6	62.0	63.4	66.3	67.9	61.2	56.2	55.4
Q. Other Diseases of the Central and Peripheral Nervous System	117.3	112.8	107.4	106.4	101.7	98.7	93.5	98.7	93.4	91.7	86.1	80.1	72.7	58.1
R. Other Diseases of the Eye	48.0	48.0	47.7	47.6	49.6	51.8	48.3	49.6	50.9	49.6	45.1	40.8	35.9	26.8
S. Hearing Deficiency	41.9	30.8	28.8	27.9	27.2	30.4	28.0	29.1	27.9	27.2	23.3	16.7	14.1	10.3
T. Other Diseases of the Heart & Circulatory System	102.6	99.9	100.7	100.7	103.9	97.6	95.2	103.5	104.8	106.8	101.2	102.2	96.1	81.9
U. Other Diseases of the Gastrointestinal System	44.2	42.3	41.6	39.1	39.1	38.4	37.4	36.7	38.0	40.0	41.7	43.2	42.9	41.7
V. Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W. Other Fetal/Placental Anomalies	–	–	–	–	–	*	*	*	*	*	*	–	–	–
X. Other Musculoskeletal System Diseases	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Y. Maternal Exposures Affecting Fetus	36.8	30.1	25.7	31.1	30.3	26.4	25.2	27.5	29.7	29.2	27.3	26.0	26.2	25.3
One or More Reportable Diagnosis	43.0	41.1	39.2	38.0	37.0	35.7	33.5	32.5	32.5	32.2	30.3	28.7	27.7	26.6

Notes:

Rates are Per 1,000 Michigan Born Resident Live Births. Rates represent the infant mortality rate for children with a diagnosed birth defect. The rates include all deaths within the first year of life to children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

*****: Figure does not meet standards of reliability or precision.

Conditions are reportable if identified within the first two years of a child's life. The mortality data in this table represent cases diagnosed within the first year of life.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Table 21
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
A. Congenital Anomalies of the Central Nervous System	146.3	146.2	142.2	134.1	132.0	130.1	126.3	126.1	124.0	118.0	110.5	102.4	99.6	90.7
A01. Anencephalus	676.5	682.5	726.0	645.6	613.6	647.1	597.4	565.8	506.5	533.3	507.7	492.5	507.5	571.4
A02. Spina Bifida w/o Anencephaly	74.8	84.1	79.9	77.7	69.0	75.5	65.2	58.3	58.0	56.8	55.6	42.9	43.0	41.2
A03. Hydrocephalus w/o Spina Bifida	152.9	154.9	147.8	149.5	150.7	155.6	164.8	170.1	177.0	171.2	163.5	148.4	137.8	127.1
A04. Encephalocele	205.5	220.6	191.2	180.6	151.9	164.8	159.1	168.5	206.9	180.7	205.5	183.3	193.5	155.2
A05. Microcephalus	152.6	146.0	152.2	139.9	139.0	129.5	132.1	140.0	131.4	126.1	119.7	114.2	104.1	76.9
A99. All Other CNS Anomalies	149.8	148.2	140.2	129.7	127.8	125.5	120.4	123.4	120.1	109.2	104.3	95.8	95.3	77.4
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
B. Congenital Anomalies of the Eye	39.3	38.1	38.7	37.1	39.3	39.5	40.8	40.6	37.9	37.0	33.7	30.5	28.8	24.5
B01. Anophthalmos/Microphthalmos	126.9	143.9	160.3	165.6	166.7	181.3	186.3	194.8	197.1	206.6	189.2	181.0	184.8	162.5
B02. Congenital Cataract	67.7	67.7	66.0	67.3	61.3	64.8	81.2	78.5	76.5	75.0	76.9	60.8	55.6	46.9
B03. Aniridia	-	-	-	-	-	*	*	*	*	*	*	-	-	*
B99. All Other Congenital Anomalies of the Eye	30.3	30.6	30.5	28.2	32.0	31.3	32.8	31.8	29.8	29.6	26.0	23.4	20.4	17.2
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
C. Congenital Anomalies of the Ear, Face & Neck	36.7	41.3	42.8	38.5	37.1	39.4	37.3	38.3	40.5	41.9	41.2	34.9	36.9	28.9
C01. Anotia/Microtia	*	*	*	*	*	*	*	*	*	*	*	66.7	68.2	*
C99. All Other Congenital Anomalies of the Ear, Face & Neck	36.1	40.8	42.5	38.0	36.6	38.9	37.3	38.5	39.9	40.4	39.7	32.2	34.4	25.9

Table 21
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
D. Congenital Anomalies of the Heart & Circulatory System	73.4	71.6	70.0	69.3	66.5	63.4	59.4	58.2	58.9	57.9	57.4	56.4	57.3	56.9
D01. Common Truncus	139.8	123.8	134.6	142.9	141.4	138.6	148.1	166.7	189.2	173.9	191.9	202.0	195.9	180.9
D02. Transposition of Great Vessels	155.7	150.1	149.2	145.6	156.6	129.4	120.3	135.5	134.3	129.6	125.3	127.6	126.7	107.6
D03. Tetralogy of Fallot	149.7	142.2	136.1	134.2	126.5	121.7	109.8	101.7	120.9	128.2	113.9	103.2	106.9	106.1
D04. Ventricular Septal Defect	63.7	60.7	62.3	63.4	65.9	60.6	56.5	56.9	58.9	56.6	53.0	52.5	51.9	46.7
D05. Atrial Septal Defect	57.3	57.2	57.5	57.6	54.1	52.2	48.3	49.3	50.8	47.5	47.3	46.5	47.1	42.6
D06. Endocardial Cushion Defect	164.5	150.2	138.0	139.2	145.7	147.0	135.5	140.7	156.6	159.8	151.9	131.1	120.0	115.8
D07. Pulmonary Valve Atresia & Stenosis	93.3	90.8	86.7	83.6	75.5	75.8	75.1	73.0	80.4	74.0	68.9	61.9	62.7	65.3
D08. Tricuspid Valve Atresia & Stenosis	262.6	226.1	190.5	182.5	157.0	118.1	90.9	90.1	130.8	125.0	125.0	154.6	127.5	129.0
D09. Ebstein's Anomaly	164.9	151.1	154.8	146.2	147.9	125.0	102.9	104.2	98.6	166.7	203.4	236.4	228.1	228.1
D10. Aortic Valve Stenosis	119.8	134.0	137.9	112.7	73.1	100.5	96.4	75.0	81.2	87.9	97.0	82.3	110.4	112.7
D11. Hypoplastic Left Heart Syndrome	361.1	361.6	348.0	337.5	304.9	269.8	247.8	249.2	267.1	281.7	281.0	283.2	276.1	296.6
D12. Patent Ductus Arteriosus	85.4	82.9	82.9	82.5	81.5	81.6	74.9	78.7	85.3	79.1	79.9	77.6	78.7	75.1
D13. Coarctation of Aorta	97.6	92.7	107.4	105.9	110.9	105.0	108.6	114.2	115.7	117.4	105.8	112.6	105.6	93.3
D14. Pulmonary Artery Anomalies	87.8	84.8	75.1	73.9	69.0	64.0	51.6	54.1	60.0	59.5	58.2	53.5	64.2	59.3
D99. All Other Congenital Anomalies of the Heart and Circulatory System	97.6	96.2	96.4	95.0	90.8	87.2	81.0	78.0	77.2	79.5	81.0	82.6	89.8	95.2
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
E. Congenital Anomalies of the Respiratory System	142.3	127.3	119.9	111.5	103.3	97.4	85.1	81.3	78.2	77.7	76.2	70.4	74.1	77.5
E01. Lung Agenesis/Hypoplasia	436.8	417.9	399.6	376.1	347.5	333.3	317.3	315.3	286.2	270.1	253.5	230.3	229.1	235.4
E02. Choanal Atresia	91.7	90.9	99.3	71.9	58.8	50.4	*	48.0	*	52.2	76.3	79.6	94.8	96.0
E99. All Other Congenital Anomalies of the Respiratory System	67.1	62.0	63.3	58.9	58.6	58.7	51.8	50.3	50.6	52.8	50.7	46.3	46.8	45.9
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
F. Cleft Palate & Cleft Lip	54.4	49.8	50.6	52.6	57.1	58.4	61.1	63.5	60.5	62.3	57.5	59.3	62.3	55.8
F01. Cleft Palate	50.6	53.0	55.7	65.1	64.6	68.2	70.3	65.2	60.9	62.5	66.4	74.4	76.5	72.3
F02. Cleft Lip w & w/o Cleft Palate	56.7	48.1	47.7	45.6	53.0	53.2	56.0	62.5	60.3	62.3	52.5	51.4	55.2	47.6

Table 21
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	50.4	51.3	53.6	56.1	61.9	63.4	63.3	63.4	64.6	61.1	53.7	51.2	49.1	44.1
G01. Esophageal Atresia/ Tracheoesophageal Fistula	94.0	100.0	100.0	105.1	121.7	119.2	111.1	105.9	121.3	111.1	95.2	104.0	111.1	119.7
G02. Rectal and Large Intestinal Atresia/Stenosis	66.7	54.4	51.9	63.8	72.2	80.3	80.1	84.2	94.9	90.1	72.0	58.0	69.6	67.1
G03. Pyloric Stenosis	10.2	11.4	11.3	11.6	12.0	11.2	10.7	8.4	8.6	6.2	7.2	6.6	7.0	6.5
G04. Hirshsprung's Disease (congenital megacolon)	*	22.0	26.0	33.1	37.6	35.3	44.2	38.6	39.8	38.3	37.2	45.2	37.0	42.1
G05. Biliary Atresia	100.0	96.2	87.9	87.0	108.7	149.4	168.7	177.2	142.9	170.7	144.7	109.8	93.0	80.5
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	75.8	79.9	83.9	85.0	91.5	91.3	89.0	88.9	89.2	84.7	75.5	72.1	66.8	56.8
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
H. Congenital Anomalies of the Genital and Urinary Systems	31.1	28.7	27.7	28.9	29.1	29.3	29.0	29.4	30.2	30.2	29.6	29.5	29.9	28.6
H01. Renal Agenesis/Hypoplasia	165.6	148.6	148.5	171.5	168.1	162.7	163.6	172.1	161.2	152.5	144.7	146.3	154.5	151.5
H02. Bladder Exstrophy	*	*	*	*	*	*	*	*	*	*	*	*	*	*
H03. Obstructive Genitourinary Defects	35.8	29.3	30.6	32.9	36.4	36.1	35.2	37.3	39.4	42.4	40.7	41.5	38.9	39.9
H04. Hypospadias & Epispadias	12.2	15.5	15.2	15.0	17.0	18.1	18.5	17.1	17.7	16.3	14.4	12.4	11.8	9.3
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	29.0	26.7	26.0	26.5	27.0	26.7	26.6	27.2	28.1	28.6	28.5	29.3	29.3	28.1

Table 21
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 – 759)

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
I. Congenital Anomalies of the Musculoskeletal System	35.1	32.8	30.3	29.5	29.5	29.2	27.4	27.5	28.7	29.2	28.0	25.9	24.8	22.2
101. Upper Limb Reduction Deformities	55.8	65.4	60.5	51.9	73.2	75.8	70.3	59.1	64.2	78.2	54.9	59.1	60.8	47.6
102. Lower Limb Reduction Deformities	46.5	53.0	51.9	*	47.3	38.5	49.4	64.9	68.5	82.8	72.5	71.4	66.1	*
103. Gastroschisis/Omphalocele	97.1	97.1	105.6	103.2	88.9	91.4	94.1	95.7	94.0	91.5	99.6	96.8	100.0	87.5
103a. Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	---	---
103b. Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	---	---
103c. Other & Unspecified Abdominal Wall Anomalies	97.4	97.7	106.3	101.2	86.8	89.2	92.2	93.6	88.2	85.5	96.9	98.9	104.5	96.0
104. Congenital Hip Dislocation	16.5	17.1	18.5	14.2	14.5	13.3	14.7	14.4	11.9	13.5	15.3	13.8	10.8	8.4
105. Diaphragmatic Hernia	205.8	168.7	166.0	146.3	155.0	152.0	148.3	175.6	172.9	167.9	168.6	156.9	178.3	186.9
199. All Other Congenital Anomalies of the Musculoskeletal System	31.4	29.4	27.0	26.3	26.6	26.4	24.4	24.1	25.1	25.9	23.8	21.8	20.2	17.6
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
J. Congenital Anomalies of the Integument	18.9	20.5	20.8	20.4	18.9	17.6	12.4	10.3	7.4	6.9	6.8	6.3	5.8	5.5
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
K. Chromosomal Anomalies	157.3	151.8	148.3	151.8	150.1	149.6	135.3	128.2	127.4	124.0	114.8	109.5	108.8	113.9
K01. Trisomy 13	564.5	517.2	480.8	528.3	615.4	614.0	627.5	638.3	652.2	650.0	588.2	677.4	694.4	700.0
K02. Down Syndrome	80.3	81.0	82.3	90.7	94.5	94.6	81.3	72.6	75.3	71.8	65.0	56.5	54.3	60.7
K03. Trisomy 18	637.3	619.0	605.5	531.7	515.9	500.0	495.9	460.9	449.2	500.0	480.0	520.0	500.0	489.6
K99. All Other Chromosomal Anomalies	148.0	145.4	145.5	144.2	135.3	142.9	131.8	133.8	122.6	117.4	117.7	106.6	106.9	111.3
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
L. Other and Unspecified Congenital Anomalies	135.5	115.7	102.0	96.7	95.6	88.9	86.9	91.4	98.4	106.5	64.2	48.3	38.4	31.4

Table 21
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
M. Infectious Conditions Occurring in the Perinatal Period	29.7	29.0	25.7	25.7	24.4	24.1	27.3	30.1	35.9	47.9	62.9	62.9	59.8	57.9
M01. Syphilis	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M02. Other Infections	100.0	107.6	89.6	92.1	85.3	75.7	74.4	67.5	67.7	68.2	64.2	64.5	61.0	60.6
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
N. Familial/Congenital Neoplasms	*	*	*	*	*	-	-	*	*	*	*	*	*	-
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
O. Endocrine/Metabolic Disorders	80.8	74.9	68.8	65.6	64.7	64.6	64.8	61.2	61.5	59.3	55.9	54.9	53.4	48.4
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
P. Diseases of the Blood & Blood Forming Organs	114.4	106.3	94.6	87.2	76.6	72.2	70.6	62.0	63.4	66.3	67.9	61.2	56.2	55.4
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
Q. Other Diseases of the Central and Peripheral Nervous System	117.3	112.8	107.4	106.4	101.7	98.7	93.5	98.7	93.4	91.7	86.1	80.1	72.7	58.1
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
R. Other Diseases of the Eye	48.0	48.0	47.7	47.6	49.6	51.8	48.3	49.6	50.9	49.6	45.1	40.8	35.9	26.8
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
S. Hearing Deficiency	41.9	30.8	28.8	27.9	27.2	30.4	28.0	29.1	27.9	27.2	23.3	16.7	14.1	10.3
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
T. Other Diseases of the Heart & Circulatory System	102.6	99.9	100.7	100.7	103.9	97.6	95.2	103.5	104.8	106.8	101.2	102.2	96.1	81.9

Table 21
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1995–2013,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
U. Other Diseases of the Gastrointestinal System	44.2	42.3	41.6	39.1	39.1	38.4	37.4	36.7	38.0	40.0	41.7	43.2	42.9	41.7
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
V. Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
W. Other Fetal/Placental Anomalies	-	-	-	-	-	*	*	*	*	*	*	-	-	-
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
X. Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
Y. Maternal Exposures Affecting Fetus	36.8	30.1	25.7	31.1	30.3	26.4	25.2	27.5	29.7	29.2	27.3	26.0	26.2	25.3
Y01. Fetal Alcohol Syndrome	50.8	44.6	*	*	44.1	*	*	*	*	*	-	-	-	*
Y99. Other Maternal Exposures Affecting the Fetus	31.4	25.9	23.4	29.7	27.3	26.3	24.8	27.0	30.0	30.2	28.8	27.0	26.8	25.3
Diagnostic Grouping	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006	2002 to 2007	2003 to 2008	2004 to 2009	2005 to 2010	2006 to 2011	2007 to 2012	2008 to 2013
One or More Reportable Diagnosis	43.0	41.1	39.2	38.0	37.0	35.7	33.5	32.5	32.5	32.2	30.3	28.7	27.7	26.6

Notes:

Rates are per 1,000 Michigan Born Resident Live Births. Rates represent the infant mortality rate for children with a diagnosed birth defect. The rates include all deaths within the first year of life to children reported with a birth defect who were born in Michigan and whose mother was a resident at the time of birth. Birth defect statistics sometimes reflect trends related to data reporting or new testing. See Data Quality Considerations for further details.

Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

*: Figure does not meet standards of reliability or precision.

Diagnoses are coded using the 9th revision to the International Classification of Diseases - ICD 9 CM. Diagnostic Code Groupings used for congenital anomaly codes are as used by the Centers for Disease Control. (See Birth Defect Groups and ICD-9-CM Diagnosis Codes for the codes used to categorize birth defects.)

Appendix A

The Michigan Birth Defects registry uses the 9th revision to the International Classification of Diseases (ICD-9-CM) to code diagnosis. Diagnostic Code Groupings used for congenital anomaly codes were established by the [Centers for Disease Control](#).

Birth Defect Groups and ICD-9-CM Diagnosis Codes

Congenital Anomalies (740 – 759)

Diagnostic Grouping and Description	ICD-9-CM Code
A. Congenital Anomalies of the Central Nervous System	740-742
A01. Anencephalus	740.0, 740.1
A02. Spina Bifida w/o Anencephaly	741.0, 741.9, w/o 740.0 or 740.1
A03. Hydrocephalus w/o Spina Bifida	742.3 w/o 741.0 or 741.9
A04. Encephalocele	742.0
A05. Microcephalus	742.1
B. Congenital Anomalies of the Eye	743
B01. Anophthalmos/Microphthalmos	743.00-743.06, 743.10-743.12
B02. Congenital Cataract	743.30 - 743.34
B03. Aniridia	743.45
C. Congenital Anomalies of the Ear, Face and Neck	744
C01. Anotia/Microtia	744.01, 744.23
D. Congenital Anomalies of the Heart and Circulatory System	745-747
D01. Common Truncus	745.0
D02. Transposition of Great Vessels	745.10, 745.11, 745.12, 745.19
D03. Tetralogy of Fallot	745.2
D04. Ventricular Septal Defect	745.4
D05. Atrial Septal Defect	745.5
D06. Endocardial Cushion Defect	745.60, 745.61, 745.69
D07. Pulmonary Valve Atresia and Stenosis	746.01, 746.02
D08. Tricuspid Valve Atresia and Stenosis	746.1
D09. Ebstein's Anomaly	746.2
D10. Aortic Valve Stenosis	746.3
D11. Hypoplastic Left Heart Syndrome	746.7
D12. Patent Ductus Arteriosus	747.0
D13. Coarctation of Aorta	747.10
D14. Pulmonary Artery Anomalies	747.3
E. Congenital Anomalies of the Respiratory System	748
E01. Lung Agenesis/Hypoplasia	748.5
E02. Choanal Atresia	748.0

**Birth Defect Groups and ICD-9-CM Diagnosis Codes
(Continued)**

Congenital Anomalies (740 – 759)

Diagnostic Grouping and Description	ICD-9-CM Code
F. Cleft Palate and Cleft Lip	749
F01. Cleft Palate	749.00 - 749.04 w/o Cleft Lip 749.1 or 749.2
F02. Cleft Lip w and w/o Cleft Palate	749.1, 749.2
G. Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	750-751
G01. Esophageal Atresia/ Tracheoesophageal Fistula	750.3
G02. Rectal and Large Intestinal Atresia/Stenosis	751.2
G03. Pyloric Stenosis	750.5
G04. Hirshsprung's Disease (congenital megacolon)	751.3
G05. Biliary Atresia	751.61
H. Congenital Anomalies of the Genital and Urinary Systems	752 - 753
H01. Renal Agenesis/Hypoplasia	753.0
H02. Bladder Exstrophy	753.5
H03. Obstructive Genitourinary Defects	753.20-753.29, 753.6
H04. Hypospadias & Epispadias	752.61, 752.62
I. Congenital Anomalies of the Musculoskeletal System	754 - 756
I01. Upper Limb Reduction Deformities	755.20 - 755.29
I02. Lower Limb Reduction Deformities	755.30 - 755.39
I03. Gastroschisis/Omphalocele	756.7
I03(a) Omphalocele	756.72
I03(b) Gastroschisis	756.73
I03(c) Other and Unspecified Abdominal Wall Anomalies	756.79
I04. Congenital Hip Dislocation	754.30, 754.31, 754.35
I05. Diaphragmatic Hernia	756.6
J. Congenital Anomalies of the Integument	757
K. Chromosomal Anomalies	758
K01. Trisomy 13	758.1
K02. Down Syndrome	758.0
K03. Trisomy 18	758.2
L. Other and Unspecified Congenital Anomalies	759

**Birth Defect Groups and ICD-9-CM Diagnosis Codes
(Continued)**

Other Reportable Conditions

Diagnostic Grouping and Description	ICD-9-CM Code
M. Infectious Conditions Occurring in the Perinatal Period	090.0 - 090.9, 771.0 - 771.2
M01. Syphilis	090.0-090.9
M02. Other Infections	771.0 - 771.2
N. Familial/Congenital Neoplasms	237.70 - 237.73, 237.79
O. Endocrine/Metabolic Disorders	243, 252.1, 253.2, 253.8, 255.2, 255.8, 257.8, 259.4, 270.0 - 273.9, 275.3, 275.09, 277.0 - 277.9, 279.11, 279.2
P. Diseases of the Blood & Blood Forming Organs	282.0 - 282.9, 284.0, 286.0 - 286.9, 287.3
Q. Other Diseases of the Central and Peripheral Nervous System	330.1, 331.7, 331.89, 331.9, 334.1, 334.2, 335.0, 337.9, 343.0 - 343.9, 345.6, 348.0, 352.6, 356.0 - 356.9, 358.0 - 359.9
R. Other Diseases of the Eye	362.60 - 362.66, 363.20, 369.00 - 369.9, 377.16, 378.0 - 378.9, 379.50 - 379.59
S. Hearing Deficiency	389.00-389.08, 389.10-389.14, 389.18, 389.2, 389.8, 389.9, 744.00-744.05, 744.09
T. Other Diseases of the Heart & Circulatory System	425.0 - 425.4, 426.0, 426.10 - 427.42, 427.81 - 427.9, 434.0 - 434.9, 453.0
U. Other Diseases of the Gastrointestinal System	520.0 - 520.9, 524.00 - 524.19, 537.1, 550.00 - 550.93, 553.00 - 553.9, 560.2, 560.9, 565.1, 569.2, 569.81
V. Other Diseases of the Genital and Urinary Systems	593.3, 593.5, 593.82, 596.1, 596.2, 598.9, 599.1, 599.6, 619.0 - 619.9
W. Other Fetal/Placental Anomalies	653.7, 658.8
X. Other Musculoskeletal System Diseases	733.3
Y. Maternal Exposures Affecting Fetus	760
Y01. Fetal Alcohol Syndrome	760.71