



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 April 30, 2014



LANSING, MICHIGAN
MARCH 2015

Table Of Contents

Overview		
Introduction	1
Data Quality Considerations	2
Table 1	Michigan Birth Defect Cases and Prevalence Rates Michigan Resident Children Born in Michigan Live Births during 2000-2012	3
Table 2-A	Birth Defects Cases by Time to Diagnosis and Birth Year Michigan Resident Cases, 1992-2012	4
Table 2-B	Average Birth Defects Cases by Time to Diagnosis Michigan Resident Cases, 1992-2012 ..	5
Table 3	Birth Defects Cases by Leading Diagnostic Groups and by Birth Year Interval Michigan Resident Children 1997-2013 Three Year Moving Total Prevalence	6
Childhood mortality Rates and Numbers		
Table 4-A	Deaths Among Children with Birth Defects by Time to Death and Birth Year, Michigan Birth Defects Registry, 1993-2012	9
Table 4-B	Deaths Among Children by Time to Death and Birth Year, Michigan Live Birth Registry, 1993-2012	10
Table 5-A	Mortality Rates Among Children with Birth Defects by Time to Death and Birth Year Michigan Birth Defects Registry Live Births during 1993-2012	11
Table 5-B	Mortality Rates Among Children with Birth Defects by Time to Death and Birth Year Michigan Live Birth Registry Live Births during 1993-2012	12
Table 6-A	Cumulative Deaths Among Children with Birth Defects by Time to Death and Birth Year Michigan Birth Defects Registry Live Births during 1993-2012	13
Table 6-B	Cumulative Deaths Among Children with Birth Defects by Time to Death and Birth Year Michigan Live Birth Registry Live Births during 1993-2012	14
Table 7-A	Cumulative Death Rates Among Children with Birth Defects by Time to Death and Birth Year Michigan Birth Defects Registry Live Births during 1993-2012	15
Table 7-B	Cumulative Death Rates Among Children with Birth Defects by Time to Death and Birth Year Michigan Live Birth Registry Live Births during 1993-2012	16
Figure 1	Cumulative Mortality Rates for Michigan Children with Reportable Conditions versus Deaths of All Children, 1993-2012	17
Birth Defects by Diagnostic Code Group and Birth Year		
Table 2	Total Birth Defects by Summary Diagnostic Code Group, 2010-2012 , Michigan Resident Children Born in Michigan Cases Diagnosed within One Year from Birth	18
Table 8	Birth Defects by Summary Diagnostic Code Group and Birth Year Michigan Resident Children Born in Michigan, 2000-2012	20
Table 9	Birth Defects by Detailed Diagnostic Code Group and Birth Year Michigan Resident Children Born in Michigan, 2000-2012	22
Figure 3	Three-year Birth Defect Mortality Rates by Summary Diagnostic Code Group, 2010-2012 , Michigan Resident Children Born in Michigan Cases Diagnosed within One Year from Birth	28
Table 10	Prevalence Rates by Summary Diagnostic Code Group and Birth Year, Michigan Resident Children Born in Michigan, 2000-2012	30
Table 11	Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year, Michigan Resident Children Born in Michigan During 2000-2012	32

Table of Contents (Continued)

Infant Mortality by Diagnostic Code Group and Birth Year		
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 2000-2012	38
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 2000-2012	40
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 2000-2012, Cases Diagnosed within One Year from Birth Three-year Infant Mortality Totals	46
Table 15	Infant Deaths of Michigan Children with Reported Birth Defects by Detailed Diagnostic Group and by Birth Year Cases Diagnosed within One Year from Birth Michigan Resident Children Born in Michigan During 2000-2012 Three-Year Mortality Totals	48
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 2000-2012, Cases Diagnosed within One Year from Birth Moving Three-year Mortality Rates	54
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 2000-2012, Cases Diagnosed within One Year from Birth Moving Three-year Mortality Rates	56
Table 18	Infant Deaths of Michigan Children with Reported Birth Defects by Summary Diagnostic Group and by Birth Year Cases Diagnosed within One Year from Birth Michigan Resident Children Born in Michigan During 1993-2012 Six-year Mortality Totals	62
Table 19	Infant Deaths of Michigan Children with Reported Birth Defects by Detailed Diagnostic Group and by Birth Year Cases Diagnosed within One Year from Birth Michigan Resident Children Born in Michigan During 1994-2012 Six-Year Mortality Totals	64
Table 20	Mortality Rates of Michigan Children with Reported Birth Defects by Summary Diagnostic Group and by Birth Year Cases Diagnosed within One Year from Birth Michigan Resident Children Born in Michigan During 1994-2012 Moving Six-year Mortality Rates	70
Table 21	Mortality Rates of Michigan Children with Reported Birth Defects by Detailed Diagnostic Group and by Birth Year Cases Diagnosed within One Year from Birth Michigan Resident Children Born in Michigan During 1994-2012 Moving Six-year Mortality Rates	72
Appendix A	Birth Defect Groups and ICD-9-CM Diagnosis Codes	78

Birth Defects Prevalence and Mortality Tables

Division for Vital Records & Health Statistics Michigan Department of Community Health

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 2012. Selected high points concerning these data are:

► Birth Defect Cases and Case Rates

In the years 2011 and 2012, there were 10,760 and 11,184 cases of birth defects reported for children under one year of age, respectively. The 2011-2012 average rate was about 960 cases per 10,000 resident live births. For the same children born during 2011, there were an additional 1,895 cases reported for children of two years of age. In other words, for infants born in 2011, there were 1,103.0 birth defects per 10,000 resident live births, an increase of 14% from 2010. Between 2002 to 2011, the ten-year average prevalence rate for two-year olds based upon reported cases was about 960 per 10,000 live births. (See Table 1.)

► Infant Death Rates

In 2012, infants born with a birth defect were 5 times more likely to die than other infants. The infant death rate for children born between 2011-2012 with a reportable birth defect was 25 per 1,000, but the overall infant death rate was 6.6 per 1,000 resident infants born in Michigan during the same period. Birth defect rates were higher between 2011 and 2012 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 2011 was 6.9 per 1,000. Children born during 2011 with a birth defect had a cumulative mortality rate of 26.7 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 1994 indicates death rates of 64.0 per 1,000 for children with birth defects and 12.6 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 2012 were musculoskeletal system defects (2,181 cases), heart and circulatory system defects (1,978 cases) and anomalies of the genital and urinary systems (1,367 cases). (See Table 8.) With regard to mortality, the number of deaths was highest in 2012 for children with heart and circulatory anomalies, followed by deaths to children with musculoskeletal system defects. Infant mortality rates were highest for the chromosomal anomalies (119.0 per 1,000 born with the defect) and for central nervous system anomalies (87.5 per 1,000), based upon mortality among the 2010-2012 birth cohorts. (See Table 20.)

Table 9 also describes detailed condition information.

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 April 30, 2014
Live Births during 2000 through 2012

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	2,725,427	204,108	748.9	247,150	906.8
2000	136,756	10,337	755.9	12,852	939.8
2001	133,968	10,777	804.4	13,252	989.2
2002	130,100	10,438	802.3	12,512	961.7
2003	132,148	10,254	775.9	12,163	920.4
2004	130,247	9,944	763.5	12,141	932.2
2005	128,087	11,174	872.4	13,180	1,029.0
2006	128,043	11,779	919.9	13,874	1,083.5
2007	125,681	9,923	789.5	11,958	951.5
2008	121,592	9,644	793.1	10,939	899.6
2009	117,611	7,657	651.0	9,244	786.0
2010	114,992	9,480	824.4	11,129	967.8
2011	114,735	10,760	937.8	12,655	1,103.0
2012	113,348	11,184	986.7	12,234	1,079.3

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Table 2-A
Birth Defects Cases by Time to Diagnosis and Birth Year
Michigan Resident Cases, 1992 - 2012

Year	Time to Diagnosis		
	All Cases	Under 1 Year	Between 1 & 2 Years
All Cases	225,350	200,245	25,105
2000-2009	113,664	100,225	13,439
1992-1999	77,795	69,470	8,325
2012	11,374	10,750	624
2011	11,867	10,445	1,422
2010	10,650	9,355	1,295
2009	8,859	7,577	1,282
2008	10,376	9,514	862
2007	11,188	9,729	1,459
2006	13,123	11,649	1,474
2005	12,427	11,078	1,349
2004	11,331	9,859	1,472
2003	10,996	9,801	1,195
2002	11,576	10,276	1,300
2001	12,166	10,567	1,599
2000	11,622	10,175	1,447
1999	10,426	9,031	1,395
1998	9,489	8,225	1,264
1997	9,167	8,202	965
1996	9,029	8,130	899
1995	9,024	8,014	1,010
1994	10,080	9,235	845
1993	10,261	9,415	846
1992	10,319	9,218	1,101

Table 2-B
Average Birth Defects Cases Per Year, by Time to Diagnosis and Birth Year
Michigan Resident Cases, 1992 - 2012

Year	Time to Diagnosis		
	All Cases	Under 1 Year	Between 1 & 2 Years
1992-2012	11,267.5	10,012.3	1,255.3
2000-2009	11,366.4	10,022.5	1,343.9
1992-1999	9,724.4	8,683.8	1,040.6

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Table 3
Birth Defects Cases by Leading Diagnostic Groups and by Birth Year Interval
Michigan Resident Children 1997 through 2012
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	6,939	7,091	7,402	7,663	7,858	8,053	8,254	8,615	8,437	8,171	7,260	6,722	6,290	6,449	5,719
Congenital Anomalies	6,121	6,193	6,485	6,777	7,037	7,311	7,554	7,895	7,675	7,400	6,523	6,035	5,639	5,769	5,120
Other Conditions	1,530	1,639	1,564	1,443	1,342	1,246	1,192	1,256	1,324	1,358	1,240	1,203	1,156	1,263	1,079
Musculoskeletal System	5,136	5,597	6,219	6,685	6,720	6,428	6,395	6,716	7,019	6,395	5,255	4,671	4,908	5,767	5,330
Congenital Anomalies	5,128	5,592	6,212	6,678	6,709	6,419	6,388	6,713	7,014	6,390	5,251	4,669	4,903	5,761	5,324
Other Conditions	10	7	9	8	13	11	9	3	5	5	6	5	9	9	8
Genital & Urinary Systems	4,636	5,217	5,658	5,830	5,605	5,568	5,693	5,860	5,764	5,237	4,327	3,672	3,701	3,981	3,680
Congenital Anomalies	4,585	5,166	5,609	5,782	5,558	5,521	5,644	5,811	5,715	5,201	4,300	3,648	3,668	3,947	3,651
Other Conditions	146	151	149	148	143	150	146	140	115	97	91	96	111	101	74
Gastrointestinal System	4,421	4,536	4,764	4,797	4,622	4,332	4,247	4,344	4,292	4,126	3,542	3,160	2,906	2,977	2,512
Congenital Anomalies	2,124	2,227	2,337	2,374	2,267	2,138	2,042	2,183	2,182	2,159	1,877	1,645	1,467	1,382	1,170
Other Conditions	2,552	2,585	2,698	2,694	2,606	2,445	2,458	2,438	2,385	2,244	1,893	1,728	1,610	1,775	1,466
Eye	2,843	3,016	3,145	3,088	3,026	2,998	3,023	2,993	2,917	2,733	2,442	2,139	1,963	1,818	1,384
Congenital Anomalies	949	1,065	1,112	1,141	1,144	1,129	1,107	1,028	969	902	861	804	796	754	621
Other Conditions	2,041	2,122	2,215	2,141	2,087	2,064	2,097	2,120	2,100	1,976	1,717	1,457	1,291	1,173	844
Central Nervous System	2,037	2,138	2,281	2,296	2,297	2,301	2,311	2,357	2,268	2,176	1,950	1,824	1,740	1,708	1,404
Congenital Anomalies	1,259	1,346	1,472	1,531	1,537	1,567	1,586	1,647	1,594	1,534	1,390	1,303	1,236	1,212	1,017
Other Conditions	1,046	1,085	1,123	1,083	1,045	1,016	1,015	1,042	1,002	921	780	697	695	670	520
Maternal Exposures	301	382	452	473	418	403	433	486	494	534	569	672	821	1,041	1,099
Integument Anomalies	876	865	918	925	916	1,052	1,362	2,328	2,358	3,089	2,979	3,333	3,033	2,610	2,853
Respiratory System Anomalies	1,111	1,320	1,569	1,757	1,974	2,043	2,173	2,457	2,641	2,370	1,673	1,255	1,227	1,353	1,129
Other Reportable Conditions	4,163	4,836	5,792	6,450	6,586	6,261	6,210	5,985	5,632	5,122	4,629	6,313	8,234	10,380	8,226
One or More Reportable Conditions	25,282	27,246	29,580	30,807	30,427	29,706	30,503	32,366	32,282	30,729	26,683	26,313	27,285	30,474	27,723

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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 April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	All Deaths	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	9,021	626	602	529	483	514	496	515	529	500	458	501	457	448	406	351	383	379	282	287	275
Under 1 Year	7,329	443	435	373	355	400	391	391	415	400	398	438	381	381	356	295	340	338	256	268	275
1 to 2 Years	502	43	35	29	25	24	24	38	32	34	19	28	36	21	17	25	18	19	16	19	---
2 to 3 Years	271	24	28	12	19	23	15	19	16	10	9	12	12	14	9	13	11	15	10	---	---
3 to 4 Years	149	15	9	10	9	13	7	13	12	6	7	3	9	9	6	4	10	7	---	---	---
4 to 5 Years	108	12	11	9	11	9	5	6	8	7	3	4	2	5	4	8	4	---	---	---	---
5 to 6 Years	93	3	2	8	9	4	7	7	13	6	4	1	6	8	9	6	---	---	---	---	---
6 to 7 Years	85	10	6	9	7	5	12	3	8	4	4	3	3	6	5	---	---	---	---	---	---
7 to 8 Years	81	9	7	13	4	9	6	5	4	4	5	4	7	4	---	---	---	---	---	---	---
8 to 9 Years	65	10	9	6	4	6	5	3	7	7	2	5	1	---	---	---	---	---	---	---	---
9 to 10 Years	46	3	7	8	6	1	2	7	4	3	2	3	---	---	---	---	---	---	---	---	---
10 to 11 Year	44	6	3	6	1	3	5	4	3	8	5	---	---	---	---	---	---	---	---	---	---
11 to 12 year	46	7	5	6	4	2	3	4	4	11	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	33	5	4	7	2	3	5	4	3	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	44	5	9	2	8	1	8	11	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	36	5	12	8	6	4	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	31	5	3	9	7	7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	29	8	10	5	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	29	13	7	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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014
Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

Table 4-B
Deaths Among Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	All Deaths	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	25,042	1,880	1,728	1,587	1,508	1,469	1,397	1,353	1,402	1,342	1,259	1,295	1,188	1,181	1,064	1,157	1,007	934	751	781	759
Under 1 Year	20,422	1,291	1,204	1,105	1,078	1,103	1,109	1,084	1,162	1,092	1,068	1,116	1,016	1,024	933	1,036	911	873	722	736	759
1 to 2 Years	1,053	86	79	64	61	62	56	74	52	64	47	58	67	47	46	52	37	37	19	45	---
2 to 3 Years	609	61	52	45	51	59	32	34	26	30	29	31	26	28	22	30	26	17	10	---	---
3 to 4 Years	437	41	30	39	33	36	25	26	26	22	30	22	22	23	20	13	22	7	---	---	---
4 to 5 Years	314	30	30	23	24	28	19	18	23	23	12	16	12	17	14	14	11	---	---	---	---
5 to 6 Years	288	34	19	21	29	17	20	16	25	21	12	10	14	20	18	12	---	---	---	---	---
6 to 7 Years	227	15	22	24	26	22	25	9	15	15	12	10	10	11	11	---	---	---	---	---	---
7 to 8 Years	191	26	14	19	14	20	12	12	11	15	13	11	13	11	---	---	---	---	---	---	---
8 to 9 Years	173	29	21	11	12	18	13	10	13	12	13	13	8	---	---	---	---	---	---	---	---
9 to 10 Years	144	15	14	24	14	10	13	13	12	13	8	8	---	---	---	---	---	---	---	---	---
10 to 11 Year	150	21	20	16	11	17	14	10	10	16	15	---	---	---	---	---	---	---	---	---	---
11 to 12 year	135	16	14	15	19	8	17	12	15	19	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	127	19	18	19	21	13	9	16	12	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	117	19	16	15	18	9	21	19	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	136	25	28	27	27	17	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	150	29	30	32	29	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	182	47	57	37	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	187	76	60	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health
 Reports Processed through April 30, 2014
 Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

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 April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	All Deaths	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	9,021	626	602	529	483	514	496	515	529	500	458	501	457	448	406	351	383	379	282	287	275
Under 1 Year	7,329	443	435	373	355	400	391	391	415	400	398	438	381	381	356	295	340	338	256	268	275
1 to 2 Years	502	43	35	29	25	24	24	38	32	34	19	28	36	21	17	25	18	19	16	19	---
2 to 3 Years	271	24	28	12	19	23	15	19	16	10	9	12	12	14	9	13	11	15	10	---	---
3 to 4 Years	149	15	9	10	9	13	7	13	12	6	7	3	9	9	6	4	10	7	---	---	---
4 to 5 Years	108	12	11	9	11	9	5	6	8	7	3	4	2	5	4	8	4	---	---	---	---
5 to 6 Years	93	3	2	8	9	4	7	7	13	6	4	1	6	8	9	6	---	---	---	---	---
6 to 7 Years	85	10	6	9	7	5	12	3	8	4	4	3	3	6	5	---	---	---	---	---	---
7 to 8 Years	81	9	7	13	4	9	6	5	4	4	5	4	7	4	---	---	---	---	---	---	---
8 to 9 Years	65	10	9	6	4	6	5	3	7	7	2	5	1	---	---	---	---	---	---	---	---
9 to 10 Years	46	3	7	8	6	1	2	7	4	3	2	3	---	---	---	---	---	---	---	---	---
10 to 11 Year	44	6	3	6	1	3	5	4	3	8	5	---	---	---	---	---	---	---	---	---	---
11 to 12 year	46	7	5	6	4	2	3	4	4	11	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	33	5	4	7	2	3	5	4	3	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	44	5	9	2	8	1	8	11	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	36	5	12	8	6	4	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	31	5	3	9	7	7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	29	8	10	5	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	29	13	7	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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014
Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

Table 4-B
Deaths Among Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	All Deaths	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	25,042	1,880	1,728	1,587	1,508	1,469	1,397	1,353	1,402	1,342	1,259	1,295	1,188	1,181	1,064	1,157	1,007	934	751	781	759
Under 1 Year	20,422	1,291	1,204	1,105	1,078	1,103	1,109	1,084	1,162	1,092	1,068	1,116	1,016	1,024	933	1,036	911	873	722	736	759
1 to 2 Years	1,053	86	79	64	61	62	56	74	52	64	47	58	67	47	46	52	37	37	19	45	---
2 to 3 Years	609	61	52	45	51	59	32	34	26	30	29	31	26	28	22	30	26	17	10	---	---
3 to 4 Years	437	41	30	39	33	36	25	26	26	22	30	22	22	23	20	13	22	7	---	---	---
4 to 5 Years	314	30	30	23	24	28	19	18	23	23	12	16	12	17	14	14	11	---	---	---	---
5 to 6 Years	288	34	19	21	29	17	20	16	25	21	12	10	14	20	18	12	---	---	---	---	---
6 to 7 Years	227	15	22	24	26	22	25	9	15	15	12	10	10	11	11	---	---	---	---	---	---
7 to 8 Years	191	26	14	19	14	20	12	12	11	15	13	11	13	11	---	---	---	---	---	---	---
8 to 9 Years	173	29	21	11	12	18	13	10	13	12	13	13	8	---	---	---	---	---	---	---	---
9 to 10 Years	144	15	14	24	14	10	13	13	12	13	8	8	---	---	---	---	---	---	---	---	---
10 to 11 Year	150	21	20	16	11	17	14	10	10	16	15	---	---	---	---	---	---	---	---	---	---
11 to 12 year	135	16	14	15	19	8	17	12	15	19	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	127	19	18	19	21	13	9	16	12	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	117	19	16	15	18	9	21	19	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	136	25	28	27	27	17	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	150	29	30	32	29	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	182	47	57	37	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	187	76	60	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health
 Reports Processed through April 30, 2014
 Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

Table 5-A
Mortality Rates Among at Risk Children with Birth Defects by Time to Death and Birth Year
Michigan Birth Defects Registry
All Cases Reported and Processed by April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	Mortality Rate	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	46.3	65.2	64.1	64.6	58.6	61.8	59.0	55.8	51.2	46.4	43.9	48.9	46.0	40.1	34.5	35.4	39.7	49.5	29.7	26.7	24.6
Under 1 Year	37.6	46.1	46.3	45.5	43.0	48.1	46.5	42.3	40.1	37.1	38.1	42.7	38.3	34.1	30.2	29.7	35.3	44.1	27.0	24.9	24.6
1 to 2 Years	2.6	4.5	3.7	3.5	3.0	2.9	2.9	4.1	3.1	3.2	1.8	2.7	3.6	1.9	1.4	2.5	1.9	2.5	1.7	1.8	---
2 to 3 Years	1.4	2.5	3.0	1.5	2.3	2.8	1.8	2.1	1.5	0.9	0.9	1.2	1.2	1.3	0.8	1.3	1.1	2.0	1.1	---	---
3 to 4 Years	0.8	1.6	1.0	1.2	1.1	1.6	0.8	1.4	1.2	0.6	0.7	*	0.9	0.8	0.5	*	1.0	0.9	---	---	---
4 to 5 Years	0.6	1.2	1.2	1.1	1.3	1.1	*	0.6	0.8	0.6	*	*	*	*	*	0.8	*	---	---	---	---
5 to 6 Years	0.5	*	*	1.0	1.1	*	0.8	0.8	1.3	0.6	*	*	0.6	0.7	0.8	0.6	---	---	---	---	---
6 to 7 Years	0.4	1.0	0.6	1.1	0.8	*	1.4	*	0.8	*	*	*	*	0.5	*	---	---	---	---	---	---
7 to 8 Years	0.4	0.9	0.7	1.6	*	1.1	0.7	*	*	*	*	*	0.7	*	---	---	---	---	---	---	---
8 to 9 Years	0.3	1.0	1.0	0.7	*	0.7	*	*	0.7	0.6	*	*	*	---	---	---	---	---	---	---	---
9 to 10 Years	0.2	*	0.7	1.0	0.7	*	*	0.8	*	*	*	*	---	---	---	---	---	---	---	---	---
10 to 11 Year	0.2	0.6	*	0.7	*	*	*	*	*	0.7	*	---	---	---	---	---	---	---	---	---	---
11 to 12 year	0.2	0.7	*	0.7	*	*	*	*	*	1.0	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	0.2	*	*	0.9	*	*	*	*	*	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	0.2	*	1.0	*	1.0	*	1.0	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	0.2	*	1.3	1.0	0.7	*	*	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	0.2	*	*	1.1	0.8	0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	0.1	0.8	1.1	*	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	0.1	1.4	0.7	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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014
Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

Table 5-B
Mortality Rates Among at Risk Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	Mortality Rate	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	9.9	13.5	12.6	11.9	11.4	11.1	10.6	10.2	10.4	10.2	9.8	10.0	9.3	9.4	8.4	9.3	8.4	8.1	6.6	6.9	6.8
Under 1 Year	8.0	9.3	8.8	8.3	8.2	8.3	8.4	8.2	8.6	8.3	8.3	8.6	7.9	8.1	7.4	8.4	7.6	7.5	6.4	6.5	6.8
1 to 2 Years	0.4	0.6	0.6	0.5	0.5	0.5	0.4	0.6	0.4	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.4	---
2 to 3 Years	0.2	0.4	0.4	0.3	0.4	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	---	---
3 to 4 Years	0.2	0.3	0.2	0.3	0.2	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	---	---	---
4 to 5 Years	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---
5 to 6 Years	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	---	---	---	---	---
6 to 7 Years	0.1	0.1	0.2	0.2	0.2	0.2	0.2	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	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---
8 to 9 Years	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---	---
9 to 10 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	---	---	---	---	---	---	---	---	---
10 to 11 Year	0.1	0.2	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	0.1	0.2	0.2	0.2	0.2	0.1	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	0.1	0.2	0.2	0.2	0.2	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	0.1	0.3	0.4	0.3	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	0.1	0.5	0.4	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014
Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

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 April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	All Years	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	9,021	626	602	529	483	514	496	515	529	500	458	501	457	448	406	351	383	379	282	287	275
Under 1 Year	7,329	443	435	373	355	400	391	391	415	400	398	438	381	381	356	295	340	338	256	268	275
1 to 2 Years	7,831	486	470	402	380	424	415	429	447	434	417	466	417	402	373	320	358	357	272	287	---
2 to 3 Years	8,102	510	498	414	399	447	430	448	463	444	426	478	429	416	382	333	369	372	282	---	---
3 to 4 Years	8,251	525	507	424	408	460	437	461	475	450	433	481	438	425	388	337	379	379	---	---	---
4 to 5 Years	8,359	537	518	433	419	469	442	467	483	457	436	485	440	430	392	345	383	---	---	---	---
5 to 6 Years	8,452	540	520	441	428	473	449	474	496	463	440	486	446	438	401	351	---	---	---	---	---
6 to 7 Years	8,537	550	526	450	435	478	461	477	504	467	444	489	449	444	406	---	---	---	---	---	---
7 to 8 Years	8,618	559	533	463	439	487	467	482	508	471	449	493	456	448	---	---	---	---	---	---	---
8 to 9 Years	8,683	569	542	469	443	493	472	485	515	478	451	498	457	---	---	---	---	---	---	---	---
9 to 10 Years	8,729	572	549	477	449	494	474	492	519	481	453	501	---	---	---	---	---	---	---	---	---
10 to 11 Year	8,773	578	552	483	450	497	479	496	522	489	458	---	---	---	---	---	---	---	---	---	---
11 to 12 year	8,819	585	557	489	454	499	482	500	526	500	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	8,852	590	561	496	456	502	487	504	529	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	8,896	595	570	498	464	503	495	515	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	8,932	600	582	506	470	507	496	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	8,963	605	585	515	477	514	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	8,992	613	595	520	483	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	9,021	626	602	529	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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. Triple dashes (---) indicate category not applicable.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health
 Reports Processed through April 30, 2014
 Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

Table 6-B
Cumulative Deaths Among Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by April 30, 2014
Live Births during 1993 through 2012

Time to Death	Birth Year																				
	All Years	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	25,042	1,880	1,728	1,587	1,508	1,469	1,397	1,353	1,402	1,342	1,259	1,295	1,188	1,181	1,064	1,157	1,007	934	751	781	759
Under 1 Year	20,422	1,291	1,204	1,105	1,078	1,103	1,109	1,084	1,162	1,092	1,068	1,116	1,016	1,024	933	1,036	911	873	722	736	759
1 to 2 Years	21,475	1,377	1,283	1,169	1,139	1,165	1,165	1,158	1,214	1,156	1,115	1,174	1,083	1,071	979	1,088	948	910	741	781	---
2 to 3 Years	22,084	1,438	1,335	1,214	1,190	1,224	1,197	1,192	1,240	1,186	1,144	1,205	1,109	1,099	1,001	1,118	974	927	751	---	---
3 to 4 Years	22,521	1,479	1,365	1,253	1,223	1,260	1,222	1,218	1,266	1,208	1,174	1,227	1,131	1,122	1,021	1,131	996	934	---	---	---
4 to 5 Years	22,835	1,509	1,395	1,276	1,247	1,288	1,241	1,236	1,289	1,231	1,186	1,243	1,143	1,139	1,035	1,145	1,007	---	---	---	---
5 to 6 Years	23,123	1,543	1,414	1,297	1,276	1,305	1,261	1,252	1,314	1,252	1,198	1,253	1,157	1,159	1,053	1,157	---	---	---	---	---
6 to 7 Years	23,350	1,558	1,436	1,321	1,302	1,327	1,286	1,261	1,329	1,267	1,210	1,263	1,167	1,170	1,064	---	---	---	---	---	---
7 to 8 Years	23,541	1,584	1,450	1,340	1,316	1,347	1,298	1,273	1,340	1,282	1,223	1,274	1,180	1,181	---	---	---	---	---	---	---
8 to 9 Years	23,714	1,613	1,471	1,351	1,328	1,365	1,311	1,283	1,353	1,294	1,236	1,287	1,188	---	---	---	---	---	---	---	---
9 to 10 Years	23,858	1,628	1,485	1,375	1,342	1,375	1,324	1,296	1,365	1,307	1,244	1,295	---	---	---	---	---	---	---	---	---
10 to 11 Year	24,008	1,649	1,505	1,391	1,353	1,392	1,338	1,306	1,375	1,323	1,259	---	---	---	---	---	---	---	---	---	---
11 to 12 year	24,143	1,665	1,519	1,406	1,372	1,400	1,355	1,318	1,390	1,342	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	24,270	1,684	1,537	1,425	1,393	1,413	1,364	1,334	1,402	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	24,387	1,703	1,553	1,440	1,411	1,422	1,385	1,353	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	24,523	1,728	1,581	1,467	1,438	1,439	1,397	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	24,673	1,757	1,611	1,499	1,467	1,469	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	24,855	1,804	1,668	1,536	1,508	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	25,042	1,880	1,728	1,587	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health
 Reports Processed through April 30, 2014
 Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

**Table 7-A
Cumulative Mortality Rates Among at Risk Children with
Birth Defects by Time to Death and Birth Year
Michigan Birth Defects Registry
All Cases Reported and Processed by April 30, 2014
Live Births during 1993 through 2012**

Time to Death	Adjusted Cumulative Rate	Birth Year																			
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	51.8	65.0	64.0	64.6	58.6	61.8	59.0	55.8	51.2	46.4	43.9	48.9	46.0	40.1	34.5	35.4	39.7	49.5	29.7	26.7	24.6
Under 1 Year	37.6	46.1	46.3	45.5	43.0	48.1	46.5	42.3	40.1	37.1	38.1	42.7	38.3	34.1	30.2	29.7	35.3	44.1	27.0	24.9	24.6
1 to 2 Years	40.4	50.6	50.1	49.1	46.1	50.9	49.4	46.4	43.2	40.3	40.0	45.4	41.9	36.0	31.7	32.2	37.1	46.6	28.7	26.7	---
2 to 3 Years	41.9	53.1	53.0	50.5	48.4	53.7	51.2	48.5	44.8	41.2	40.8	46.6	43.1	37.2	32.4	33.6	38.3	48.6	29.7	---	---
3 to 4 Years	42.8	54.7	54.0	51.8	49.5	55.3	52.0	49.9	46.0	41.8	41.5	46.9	44.0	38.0	32.9	34.0	39.3	49.5	---	---	---
4 to 5 Years	43.5	55.9	55.2	52.8	50.8	56.3	52.6	50.6	46.7	42.4	41.8	47.3	44.2	38.5	33.3	34.8	39.7	---	---	---	---
5 to 6 Years	44.2	56.2	55.4	53.8	51.9	56.8	53.4	51.3	48.0	43.0	42.2	47.4	44.9	39.2	34.0	35.4	---	---	---	---	---
6 to 7 Years	44.8	57.3	56.0	54.9	52.7	57.4	54.9	51.6	48.8	43.3	42.5	47.7	45.2	39.7	34.5	---	---	---	---	---	---
7 to 8 Years	45.5	58.2	56.8	56.5	53.2	58.5	55.6	52.2	49.1	43.7	43.0	48.1	45.9	40.1	---	---	---	---	---	---	---
8 to 9 Years	46.0	59.2	57.7	57.2	53.7	59.2	56.2	52.5	49.8	44.4	43.2	48.6	46.0	---	---	---	---	---	---	---	---
9 to 10 Years	46.5	59.6	58.5	58.2	54.4	59.4	56.4	53.3	50.2	44.6	43.4	48.9	---	---	---	---	---	---	---	---	---
10 to 11 Year	46.9	60.2	58.8	59.0	54.6	59.7	57.0	53.7	50.5	45.4	43.9	---	---	---	---	---	---	---	---	---	---
11 to 12 year	47.5	60.9	59.3	59.7	55.1	60.0	57.4	54.1	50.9	46.4	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	48.0	61.4	59.8	60.5	55.3	60.3	58.0	54.6	51.2	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	48.7	62.0	60.7	60.8	56.3	60.4	58.9	55.8	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	49.4	62.5	62.0	61.8	57.0	60.9	59.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	50.1	63.0	62.3	62.9	57.8	61.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	50.9	63.8	63.4	63.5	58.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	52.0	65.2	64.1	64.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014
Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

Table 7-B
Cumulative Mortality Rates Among at Risk Michigan Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by April 30, 2014
Live Births during 1993 through 2012

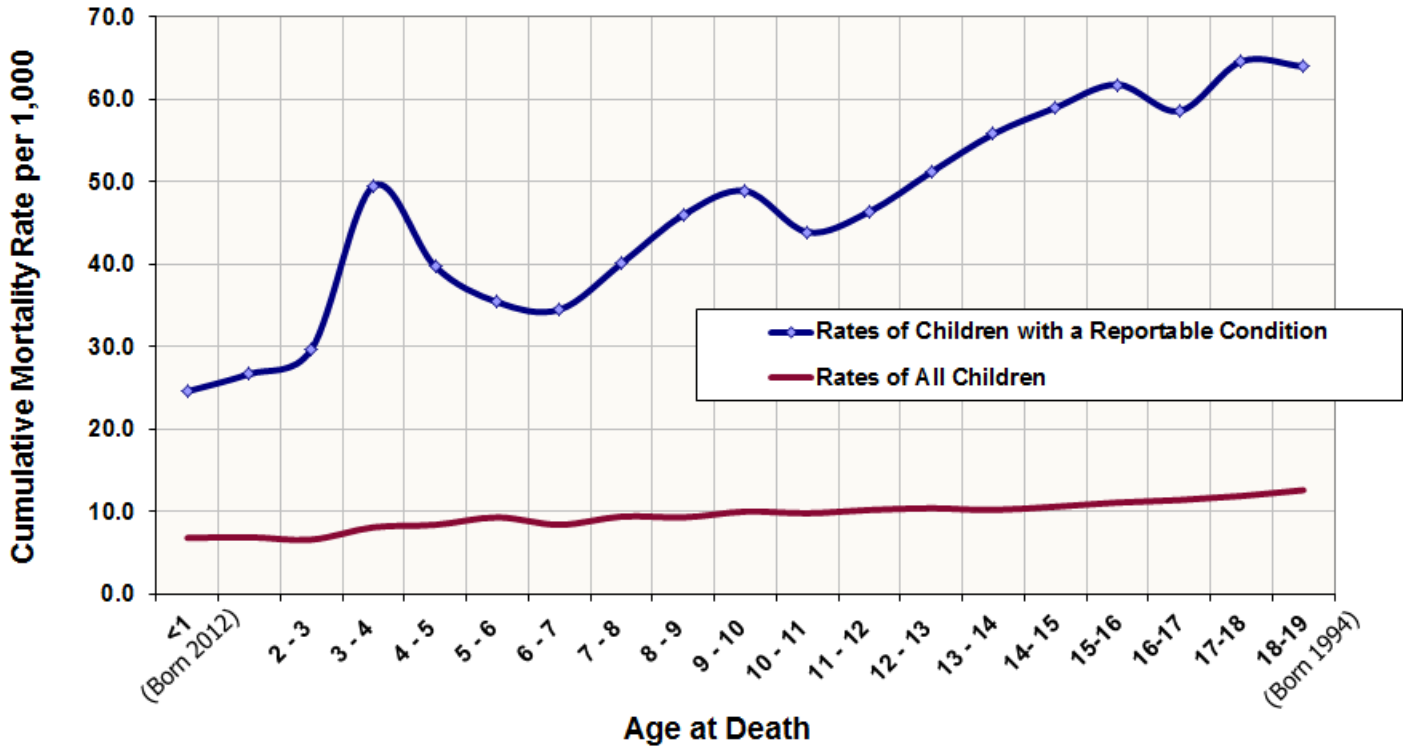
Time to Death	Adjusted Cumulative Rate	Birth Year																			
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All Ages	11.3	13.5	12.6	11.9	11.4	11.1	10.6	10.2	10.4	10.2	9.8	10.0	9.3	9.4	8.4	9.3	8.4	8.1	6.6	6.9	6.8
Under 1 Year	8.0	9.3	8.8	8.3	8.2	8.3	8.4	8.2	8.6	8.3	8.3	8.6	7.9	8.1	7.4	8.4	7.6	7.5	6.4	6.5	6.8
1 to 2 Years	8.5	9.9	9.4	8.8	8.6	8.8	8.8	8.8	9.0	8.8	8.7	9.1	8.4	8.5	7.8	8.8	7.9	7.8	6.5	6.9	---
2 to 3 Years	8.7	10.3	9.8	9.1	9.0	9.2	9.0	9.0	9.2	9.0	8.9	9.3	8.6	8.7	7.9	9.0	8.2	8.0	6.6	---	---
3 to 4 Years	8.9	10.6	10.0	9.4	9.3	9.5	9.2	9.2	9.4	9.2	9.2	9.5	8.8	8.9	8.1	9.1	8.3	8.1	---	---	---
4 to 5 Years	9.1	10.8	10.2	9.6	9.4	9.7	9.4	9.3	9.6	9.3	9.3	9.6	8.9	9.0	8.2	9.3	8.4	---	---	---	---
5 to 6 Years	9.2	11.1	10.3	9.7	9.7	9.9	9.5	9.5	9.8	9.5	9.4	9.7	9.0	9.2	8.3	9.3	---	---	---	---	---
6 to 7 Years	9.4	11.2	10.5	9.9	9.9	10.0	9.7	9.5	9.9	9.6	9.4	9.8	9.1	9.3	8.4	---	---	---	---	---	---
7 to 8 Years	9.5	11.4	10.6	10.1	10.0	10.2	9.8	9.6	9.9	9.7	9.5	9.8	9.2	9.4	---	---	---	---	---	---	---
8 to 9 Years	9.6	11.6	10.8	10.1	10.1	10.3	9.9	9.7	10.0	9.8	9.6	9.9	9.3	---	---	---	---	---	---	---	---
9 to 10 Years	9.7	11.7	10.9	10.3	10.2	10.4	10.0	9.8	10.1	9.9	9.7	10.0	---	---	---	---	---	---	---	---	---
10 to 11 Year	9.8	11.9	11.0	10.4	10.2	10.5	10.1	9.9	10.2	10.0	9.8	---	---	---	---	---	---	---	---	---	---
11 to 12 year	9.9	12.0	11.1	10.5	10.4	10.6	10.2	10.0	10.3	10.2	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	10.0	12.1	11.2	10.7	10.5	10.7	10.3	10.1	10.4	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	10.1	12.2	11.4	10.8	10.7	10.7	10.5	10.2	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	10.3	12.4	11.6	11.0	10.9	10.9	10.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15 to 16 year	10.5	12.6	11.8	11.2	11.1	11.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16 to 17 year	10.9	13.0	12.2	11.5	11.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 to 18 year	11.3	13.5	12.6	11.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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. Triple dashes (---) indicate category not applicable.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014
Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

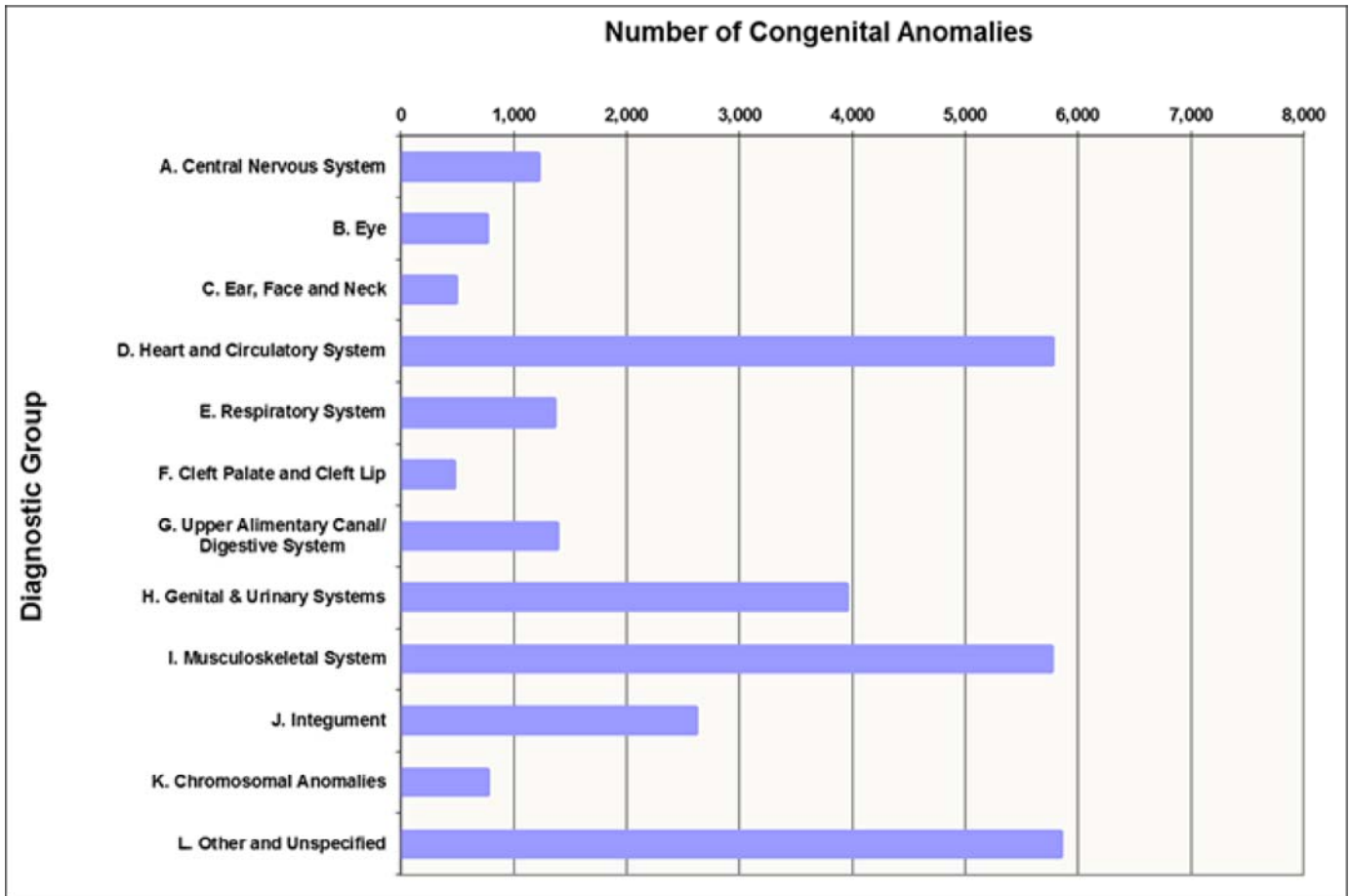
**Figure 1. Crude Cumulative Mortality Rates,
Michigan Children with a Reportable Condition versus All Children
Michigan Births between 1994-2012**



Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014
Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

Figure 2-A
Total Congenital Anomalies by Summary Diagnostic Code Group, 2010-2012,
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.

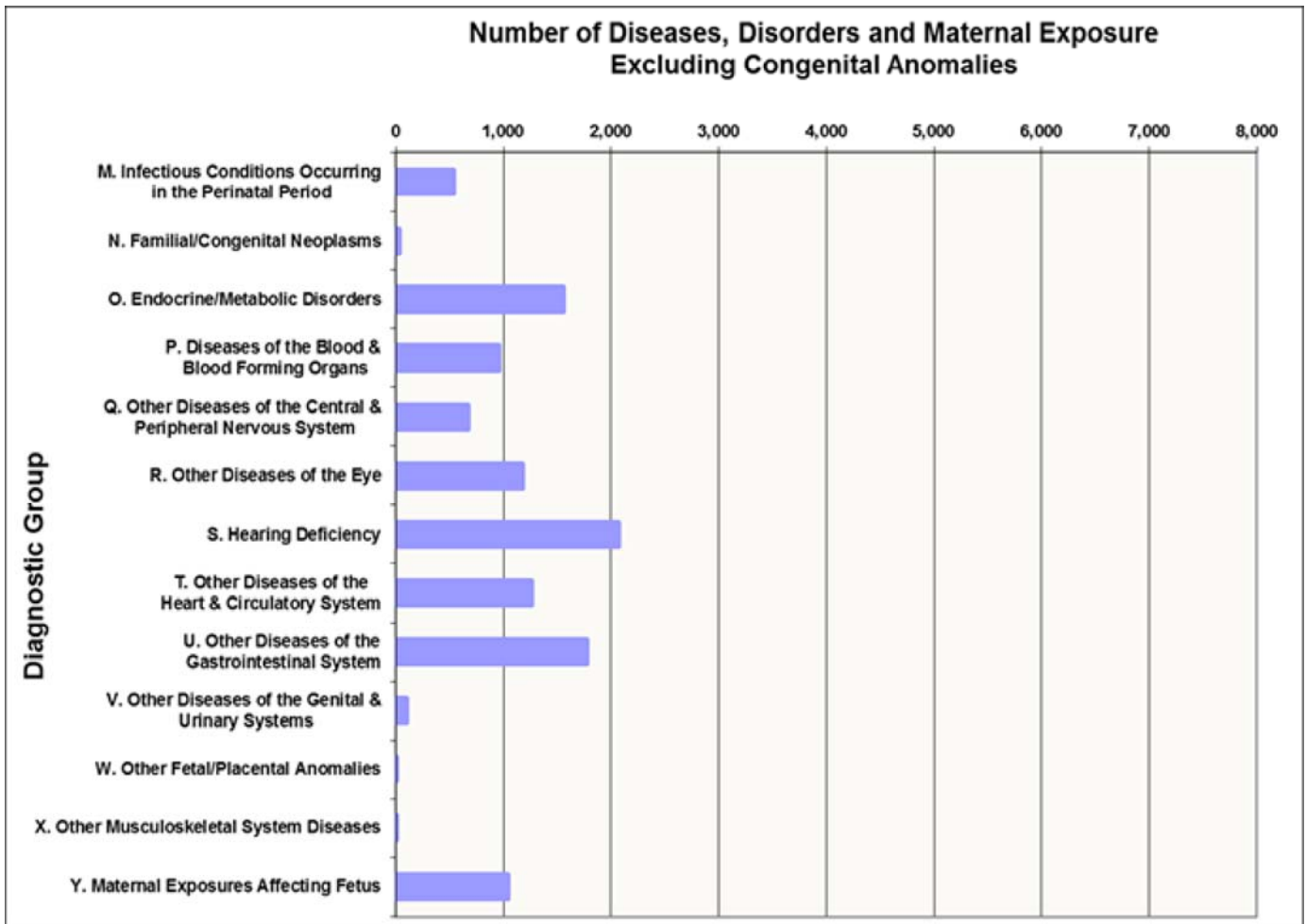
Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Figure 2-B
Total Diseases, Disorders and Maternal Exposures by
Summary Diagnostic Code Group, 2010-2012,
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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Table 8
Birth Defects by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
A Congenital Anomalies of the Central Nervous System	6,281	495	517	519	501	547	3,702	538	562	494	478	418	407	411	394
B Congenital Anomalies of the Eye	4,165	378	377	386	381	362	2,281	364	302	303	297	261	246	289	219
C Congenital Anomalies of the Ear, Face and Neck	2,559	221	235	242	210	201	1,450	254	194	171	199	149	162	173	148
D Congenital Anomalies of the Heart and Circulatory System	29,348	2,124	2,279	2,374	2,384	2,553	17,634	2,617	2,725	2,333	2,342	1,848	1,845	1,946	1,978
E Congenital Anomalies of the Respiratory System	7,994	537	609	611	754	678	4,805	741	1,038	862	470	341	444	442	467
F Cleft Palate and Cleft Lip	2,514	200	228	203	217	192	1,474	200	223	197	182	206	160	162	144
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	8,483	774	823	777	667	694	4,748	681	808	693	658	526	461	480	441
H Congenital Anomalies of the Genital and Urinary Systems	21,662	2,046	1,882	1,854	1,822	1,845	12,213	1,977	1,989	1,749	1,463	1,088	1,097	1,483	1,367
I Congenital Anomalies of the Musculoskeletal System	26,540	2,106	2,272	2,300	2,137	1,982	15,743	2,269	2,462	2,283	1,645	1,323	1,701	1,879	2,181
J Congenital Anomalies of the Integument	9,140	307	310	308	298	446	7,471	618	1,264	476	1,349	1,154	830	1,049	731
K Chromosomal Anomalies	3,603	284	292	282	285	289	2,171	293	300	266	286	261	266	260	239
L Other and Unspecified Congenital Anomalies	11,028	627	756	645	707	634	7,659	598	467	366	220	168	1,895	1,880	2,065

Table 8
Birth Defects by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
M Infectious Conditions Occurring in the Perinatal Period	2,577	218	224	241	220	199	1,475	159	189	135	264	189	197	207	135
N Familial/Congenital Neoplasms	171	19	16	15	15	10	96	16	16	15	14	5	8	12	10
O Endocrine/Metabolic Disorders	6,444	531	511	512	452	414	4,024	515	545	447	542	416	516	501	542
P Diseases of the Blood & Blood Forming Organs	3,596	247	229	264	263	246	2,347	321	298	250	294	230	315	334	305
Q Other Diseases of the Central and Peripheral Nervous System	3,907	370	360	353	332	331	2,161	352	359	291	271	218	208	269	193
R Other Diseases of the Eye	7,828	731	707	703	677	684	4,326	736	700	664	612	441	404	446	323
S Hearing Deficiency	6,668	397	571	620	464	408	4,208	498	456	384	418	381	505	819	747
T Other Diseases of the Heart & Circulatory System	5,629	528	451	464	427	355	3,404	410	491	423	444	373	386	397	480
U Other Diseases of the Gastrointestinal System	9,614	902	950	842	814	789	5,317	855	794	736	714	443	571	596	608
V Other Diseases of the Genital and Urinary Systems	530	55	46	47	50	53	279	43	44	28	25	38	33	40	28
W Other Fetal/Placental Anomalies	118	-	-	2	2	2	112	107	2	1	-	-	1	1	-
X Other Musculoskeletal System Diseases	33	2	3	3	7	1	17	1	1	3	1	2	2	5	2
Y Maternal Exposures Affecting Fetus	2,679	165	158	150	110	143	1,953	180	163	151	220	198	254	369	418
One or More Reportable Diagnosis	130,058	10,108	10,494	10,205	9,728	9,773	79,750	11,002	11,591	9,689	9,449	7,545	9,319	10,421	10,734

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
A Congenital Anomalies of the Central Nervous System	6,281	495	517	519	501	547	3,702	538	562	494	478	418	407	411	394
A01 Anencephalus	185	21	7	15	18	20	104	12	14	8	18	15	10	15	12
A02 Spina Bifida w/o Anencephaly	711	49	72	44	52	63	431	62	65	59	63	40	52	47	43
A03 Hydrocephalus w/o Spina Bifida	1,485	136	151	131	119	132	816	125	123	127	119	97	82	73	70
A04 Encephalocele	161	16	11	13	14	14	93	22	13	12	11	9	5	8	13
A05 Microcephalus	1,506	124	117	137	119	127	882	130	143	132	87	94	109	106	81
A99. All Other CNS Anomalies	3,391	228	255	266	280	299	2,063	298	304	258	275	235	215	235	243
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
B Congenital Anomalies of the Eye	4,165	378	377	386	381	362	2,281	364	302	303	297	261	246	289	219
B01 Anophthalmos/Microphthalmos	272	21	31	33	28	24	135	25	21	21	18	10	14	18	8
B02 Congenital Cataract	368	39	33	38	37	30	191	38	20	23	30	14	27	25	14
B03 Aniridia	44	4	3	2	5	6	24	5	2	4	3	-	4	3	3
B99. All Other Congenital Anomalies of the Eye	3,793	348	343	344	343	330	2,085	329	284	274	265	247	219	259	208
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
C Congenital Anomalies of the Ear, Face and Neck	2,559	221	235	242	210	201	1,450	254	194	171	199	149	162	173	148
C01 Anotia/Microtia	209	22	20	20	21	18	108	12	14	14	15	12	16	15	10
C99. All Other Congenital Anomalies of the Ear, Face and Neck	2,493	215	232	233	208	194	1,411	251	192	164	191	145	156	168	144

**Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)**

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
D Congenital Anomalies of the Heart and Circulatory System	29,348	2,124	2,279	2,374	2,384	2,553	17,634	2,617	2,725	2,333	2,342	1,848	1,845	1,946	1,978
D01 Common Truncus	216	11	21	13	25	15	131	17	18	15	21	7	21	18	14
D02 Transposition of Great Vessels	824	68	58	66	56	59	517	85	73	65	61	63	67	49	54
D03 Tetralogy of Fallot	870	74	68	70	80	55	523	67	74	60	78	46	71	69	58
D04 Ventricular Septal Defect	6,654	540	531	557	538	545	3,943	589	569	519	542	380	416	444	484
D05 Atrial Septal Defect	13,515	814	861	967	983	1,114	8,776	1,239	1,285	1,043	1,140	915	900	1,103	1,151
D06 Endocardial Cushion Defect	890	65	75	76	88	74	512	70	79	64	67	52	60	63	57
D07 Pulmonary Valve Atresia and Stenosis	1,765	142	163	133	171	128	1,028	177	165	143	133	84	116	100	110
D08 Tricuspid Valve Atresia and Stenosis	237	17	28	26	22	10	134	22	11	19	22	11	18	15	16
D09 Ebstein's Anomaly	223	35	46	37	18	10	77	12	11	6	12	7	9	8	12
D10 Aortic Valve Stenosis	379	42	27	31	35	35	209	34	30	31	27	20	19	25	23
D11 Hypoplastic Left Heart Syndrome	670	46	68	56	55	51	394	60	46	50	49	56	33	43	57
D12 Patent Ductus Arteriosus	8,650	559	650	660	753	747	5,281	823	871	681	742	507	531	646	480
D13 Coarctation of Aorta	1,014	82	68	87	87	77	613	79	95	87	87	52	62	68	83
D14 Pulmonary Artery Anomalies	2,995	252	294	297	278	246	1,628	301	305	248	246	208	192	114	14
D99. All Other Congenital Anomalies of the Heart and Circulatory System	12,096	894	928	1,027	1,048	1,203	6,996	1,036	1,199	1,005	945	747	733	672	659
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
E Congenital Anomalies of the Respiratory System	7,994	537	609	611	754	678	4,805	741	1,038	862	470	341	444	442	467
E01 Lung Agenesis/Hypoplasia	1,108	85	74	85	152	113	599	94	75	61	73	69	104	70	53
E02 Choanal Atresia	262	20	28	29	18	20	147	23	18	16	17	17	21	17	18
E99. All Other Congenital Anomalies of the Respiratory System	7,056	459	539	540	622	579	4,317	666	979	809	413	284	356	385	425
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
F Cleft Palate and Cleft Lip	2,514	200	228	203	217	192	1,474	200	223	197	182	206	160	162	144
F01 Cleft Palate	882	72	85	72	70	65	518	74	82	77	69	87	45	44	40
F02 Cleft Lip w and w/o Cleft Palate	1,632	128	143	131	147	127	956	126	141	120	113	119	115	118	104

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	8,483	774	823	777	667	694	4,748	681	808	693	658	526	461	480	441
G01 Esophageal Atresia/ Tracheoesophageal Fistula	442	34	46	44	46	46	226	43	35	39	28	13	26	24	18
G02 Rectal and Large Intestinal Atresia/Stenosis	758	74	60	65	60	64	435	61	74	53	53	43	56	55	40
G03 Pyloric Stenosis	2,701	253	307	260	207	202	1,472	195	234	200	226	165	127	155	170
G04 Hirshsprung's Disease (congenital megacolon)	492	43	50	42	41	41	275	35	37	34	34	23	45	41	26
G05 Biliary Atresia	181	16	15	10	16	18	106	12	12	11	15	13	12	17	14
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	4,492	408	390	407	355	379	2,553	385	458	396	345	299	227	233	210
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
H Congenital Anomalies of the Genital and Urinary Systems	21,662	2,046	1,882	1,854	1,822	1,845	12,213	1,977	1,989	1,749	1,463	1,088	1,097	1,483	1,367
H01 Renal Agenesis/Hypoplasia	886	99	74	84	78	63	488	69	59	76	79	49	53	50	53
H02 Bladder Exstrophy	46	3	10	6	5	2	20	6	4	1	3	3	2	1	-
H03 Obstructive Genitourinary Defects	3,478	263	287	292	299	297	2,040	324	307	276	266	159	179	255	274
H04 Hypospadias & Epispadias	4,944	452	391	401	389	372	2,939	471	334	354	418	310	325	426	301
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	17,801	1,699	1,586	1,542	1,536	1,582	9,856	1,639	1,735	1,491	1,098	810	830	1,131	1,122

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
I Congenital Anomalies of the Musculoskeletal System	26,540	2,106	2,272	2,300	2,137	1,982	15,743	2,269	2,462	2,283	1,645	1,323	1,701	1,879	2,181
I01 Upper Limb Reduction Deformities	404	42	34	37	36	26	229	25	27	33	38	27	32	28	19
I02 Lower Limb Reduction Deformities	317	23	29	26	25	27	187	31	31	21	19	25	20	19	21
I03 Gastroschisis/Omphalocele	986	63	75	52	73	77	646	81	94	83	71	66	94	79	78
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	20	17	22
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	53	51	36
I03c Other and Unspecified Abdominal Wall Anomalies	806	63	74	52	72	77	468	81	94	83	67	55	42	19	27
I04 Congenital Hip Dislocation	1,940	198	215	206	170	148	1,003	118	162	99	141	139	114	129	101
I05 Diaphragmatic Hernia	511	39	43	33	48	46	302	37	52	40	37	38	39	36	23
I99. All Other Congenital Anomalies of the Musculoskeletal System	23,872	1,844	2,008	2,088	1,918	1,777	14,237	2,082	2,234	2,113	1,462	1,137	1,500	1,694	2,015
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
J Congenital Anomalies of the Integument	9,140	307	310	308	298	446	7,471	618	1,264	476	1,349	1,154	830	1,049	731
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
K Chromosomal Anomalies	3,603	284	292	282	285	289	2,171	293	300	266	286	261	266	260	239
K01 Trisomy 13	140	15	10	10	14	12	79	17	8	10	10	7	6	11	10
K02 Down Syndrome	2,032	146	173	174	144	174	1,221	174	183	144	153	129	163	141	134
K03 Trisomy 18	227	14	21	20	28	16	128	15	18	15	22	17	10	16	15
K99. All Other Chromosomal Anomalies	1,399	128	104	99	118	98	852	106	97	112	109	117	98	114	99
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
L Other and Unspecified Congenital Anomalies	11,028	627	756	645	707	634	7,659	598	467	366	220	168	1,895	1,880	2,065

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
M Infectious Conditions Occurring in the Perinatal Period	2,577	218	224	241	220	199	1,475	159	189	135	264	189	197	207	135
M01 Syphilis	227	24	33	19	32	5	114	14	13	5	28	26	9	7	12
M02 Other Infections	2,352	194	191	222	188	194	1,363	145	176	130	236	164	188	200	124
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
N Familial/Congenital Neoplasms	171	19	16	15	15	10	96	16	16	15	14	5	8	12	10
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
O Endocrine/Metabolic Disorders	6,444	531	511	512	452	414	4,024	515	545	447	542	416	516	501	542
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
P Diseases of the Blood & Blood Forming Organs	3,596	247	229	264	263	246	2,347	321	298	250	294	230	315	334	305
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
Q Other Diseases of the Central and Peripheral Nervous System	3,907	370	360	353	332	331	2,161	352	359	291	271	218	208	269	193
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
R Other Diseases of the Eye	7,828	731	707	703	677	684	4,326	736	700	664	612	441	404	446	323
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
S Hearing Deficiency	6,668	397	571	620	464	408	4,208	498	456	384	418	381	505	819	747
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
T Other Diseases of the Heart & Circulatory System	5,629	528	451	464	427	355	3,404	410	491	423	444	373	386	397	480

**Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)**

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
U Other Diseases of the Gastrointestinal System	9,614	902	950	842	814	789	5,317	855	794	736	714	443	571	596	608
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
V Other Diseases of the Genital and Urinary Systems	530	55	46	47	50	53	279	43	44	28	25	38	33	40	28
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
W Other Fetal/Placental Anomalies	118	-	-	2	2	2	112	107	2	1	-	-	1	1	-
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
X Other Musculoskeletal System Diseases	33	2	3	3	7	1	17	1	1	3	1	2	2	5	2
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
Y Maternal Exposures Affecting Fetus	2,679	165	158	150	110	143	1,953	180	163	151	220	198	254	369	418
Y01 Fetal Alcohol Syndrome	179	26	23	21	13	17	79	17	20	10	5	5	10	6	6
Y99. Other Maternal Exposures Affecting the Fetus	2,511	139	136	131	97	127	1,881	165	143	142	216	193	245	365	412
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
One or More Reportable Diagnosis	130,058	10,108	10,494	10,205	9,728	9,773	79,750	11,002	11,591	9,689	9,449	7,545	9,319	10,421	10,734

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

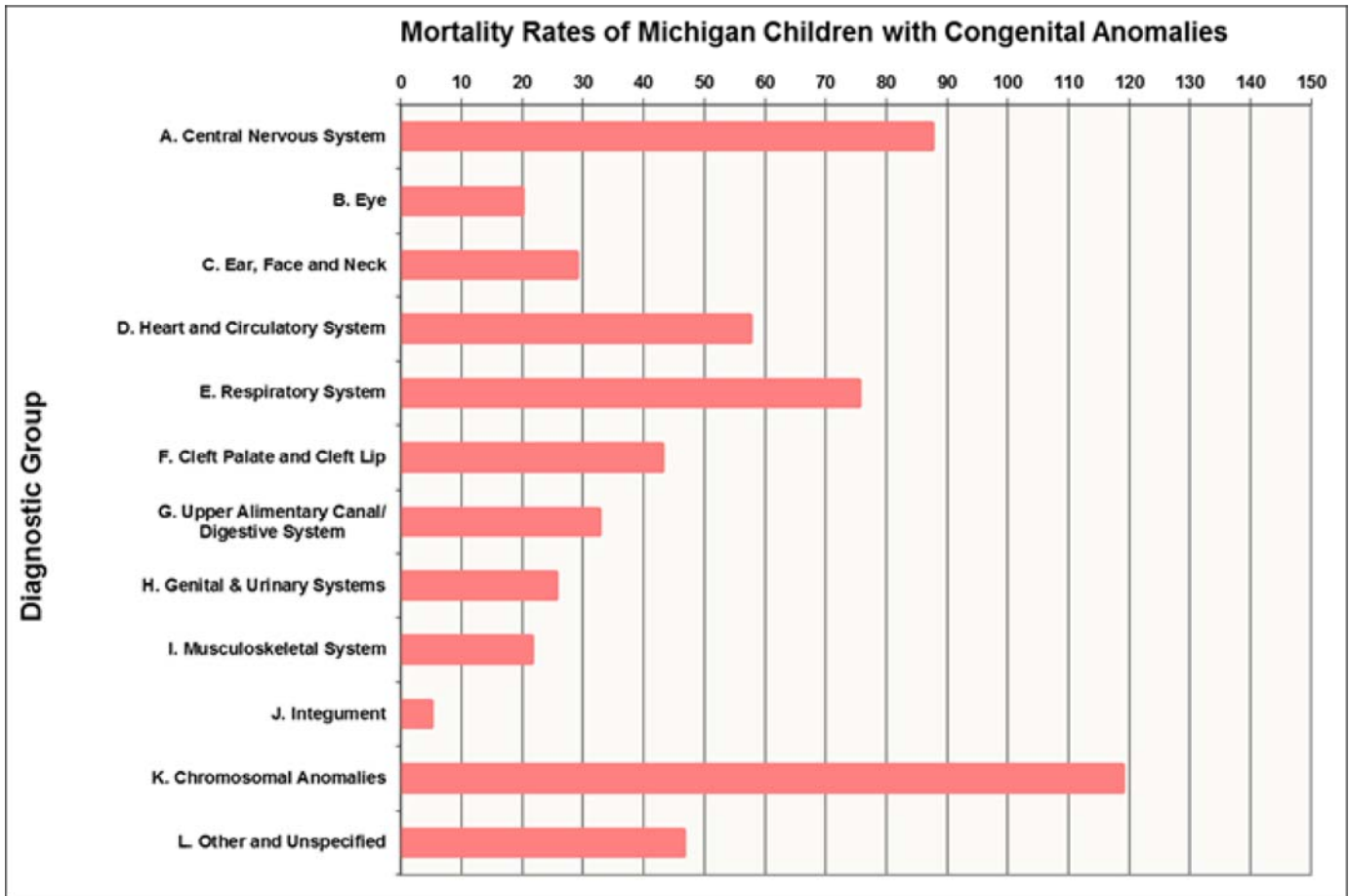
Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Figure 3-A
Total Congenital Anomalies by Summary Diagnostic Code Group, 2010-2012,
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.

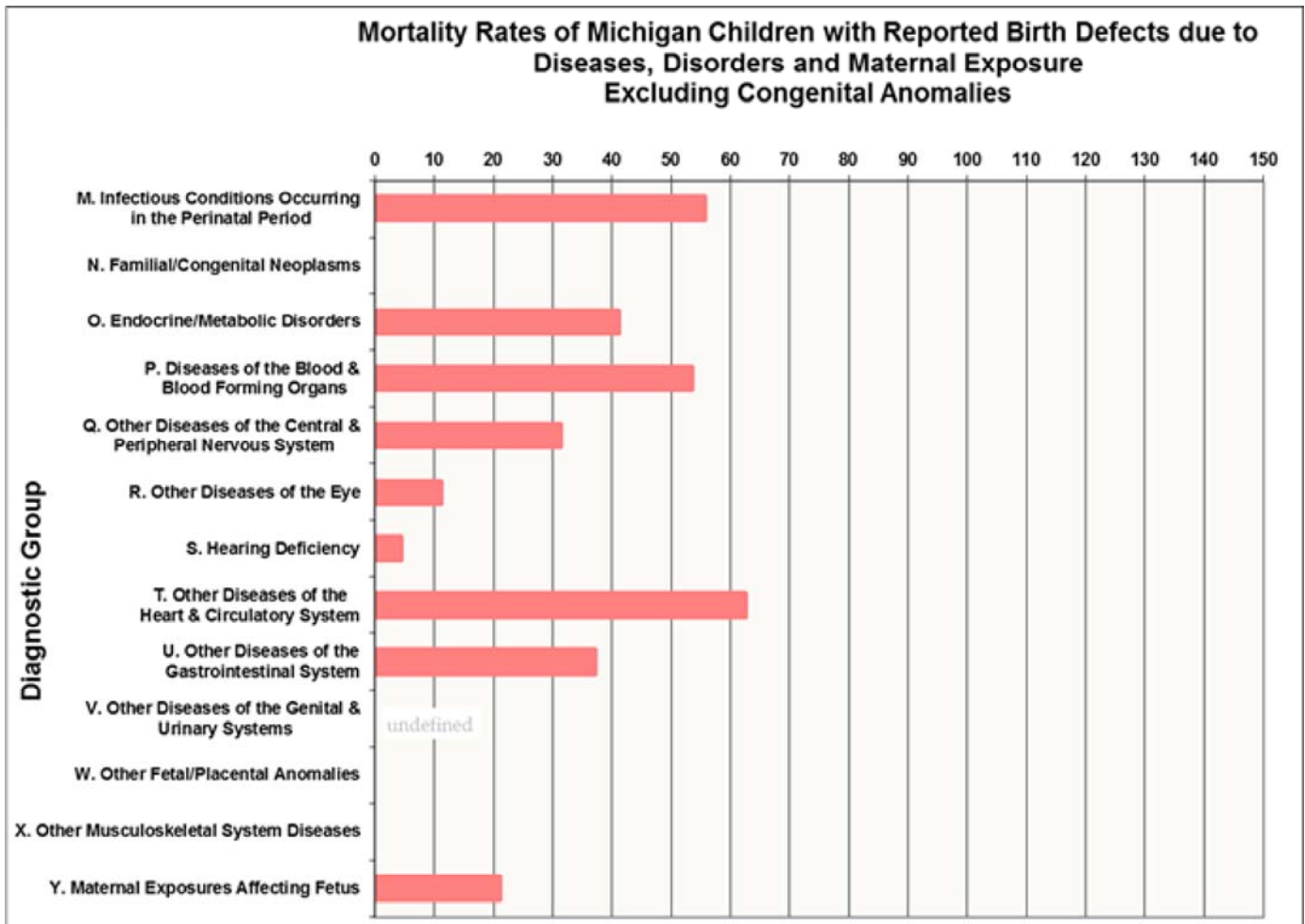
Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Figure 3-B
Total Diseases, Disorders and Maternal Exposures by
Summary Diagnostic Code Group, 2010-2012,
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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Table 10
Birth Defect Prevalence Rates by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
A Congenital Anomalies of the Central Nervous System	39.2	36.7	39.2	40.5	38.7	42.6	39.0	42.6	44.5	39.9	40.0	36.1	35.9	36.4	35.2
B Congenital Anomalies of the Eye	26.0	28.1	28.6	30.1	29.4	28.2	24.0	28.8	23.9	24.5	24.9	22.5	21.7	25.6	19.6
C Congenital Anomalies of the Ear, Face and Neck	16.0	16.4	17.8	18.9	16.2	15.7	15.3	20.1	15.4	13.8	16.7	12.9	14.3	15.3	13.2
D Congenital Anomalies of the Heart and Circulatory System	183.2	157.7	172.9	185.3	184.1	199.0	185.7	207.3	215.9	188.5	196.2	159.4	162.8	172.5	176.7
E Congenital Anomalies of the Respiratory System	49.9	39.9	46.2	47.7	58.2	52.9	50.6	58.7	82.3	69.7	39.4	29.4	39.2	39.2	41.7
F Cleft Palate and Cleft Lip	15.7	14.8	17.3	15.8	16.8	15.0	15.5	15.8	17.7	15.9	15.2	17.8	14.1	14.4	12.9
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	53.0	57.5	62.4	60.7	51.5	54.1	50.0	53.9	64.0	56.0	55.1	45.4	40.7	42.6	39.4
H Congenital Anomalies of the Genital and Urinary Systems	135.2	151.9	142.7	144.7	140.7	143.8	128.6	156.6	157.6	141.3	122.6	93.9	96.8	131.5	122.1
I Congenital Anomalies of the Musculoskeletal System	165.7	156.3	172.3	179.6	165.0	154.5	165.8	179.7	195.1	184.5	137.8	114.1	150.1	166.6	194.9
J Congenital Anomalies of the Integument	57.1	22.8	23.5	24.0	23.0	34.8	78.7	49.0	100.2	38.5	113.0	99.5	73.3	93.0	65.3
K Chromosomal Anomalies	22.5	21.1	22.1	22.0	22.0	22.5	22.9	23.2	23.8	21.5	24.0	22.5	23.5	23.0	21.4
L Other and Unspecified Congenital Anomalies	68.8	46.5	57.3	50.4	54.6	49.4	80.7	47.4	37.0	29.6	18.4	14.5	167.3	166.7	184.5

Table 10
Birth Defect Prevalence Rates by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
M Infectious Conditions Occurring in the Perinatal Period	16.1	16.2	17.0	18.8	17.0	15.5	15.5	12.6	15.0	10.9	22.1	16.3	17.4	18.4	12.1
N Familial/Congenital Neoplasms	1.1	1.4	1.2	1.2	1.2	0.8	1.0	1.3	1.3	1.2	1.2	*	0.7	1.1	0.9
O Endocrine/Metabolic Disorders	40.2	39.4	38.8	40.0	34.9	32.3	42.4	40.8	43.2	36.1	45.4	35.9	45.5	44.4	48.4
P Diseases of the Blood & Blood Forming Organs	22.4	18.3	17.4	20.6	20.3	19.2	24.7	25.4	23.6	20.2	24.6	19.8	27.8	29.6	27.3
Q Other Diseases of the Central and Peripheral Nervous System	24.4	27.5	27.3	27.6	25.6	25.8	22.8	27.9	28.4	23.5	22.7	18.8	18.4	23.8	17.2
R Other Diseases of the Eye	48.9	54.3	53.6	54.9	52.3	53.3	45.6	58.3	55.5	53.7	51.3	38.0	35.7	39.5	28.9
S Hearing Deficiency	41.6	29.5	43.3	48.4	35.8	31.8	44.3	39.4	36.1	31.0	35.0	32.9	44.6	72.6	66.7
T Other Diseases of the Heart & Circulatory System	35.1	39.2	34.2	36.2	33.0	27.7	35.9	32.5	38.9	34.2	37.2	32.2	34.1	35.2	42.9
U Other Diseases of the Gastrointestinal System	60.0	67.0	72.1	65.7	62.9	61.5	56.0	67.7	62.9	59.5	59.8	38.2	50.4	52.8	54.3
V Other Diseases of the Genital and Urinary Systems	3.3	4.1	3.5	3.7	3.9	4.1	2.9	3.4	3.5	2.3	2.1	3.3	2.9	3.5	2.5
W Other Fetal/Placental Anomalies	0.7	-	-	*	*	*	1.2	8.5	*	*	-	-	*	*	-
X Other Musculoskeletal System Diseases	0.2	*	*	*	0.5	*	0.2	*	*	*	*	*	*	*	*
Y Maternal Exposures Affecting Fetus	16.7	12.2	12.0	11.7	8.5	11.1	20.6	14.3	12.9	12.2	18.4	17.1	22.4	32.7	37.3
One or More Reportable Diagnosis	811.9	750.3	795.9	796.7	751.3	761.9	839.9	871.5	918.5	782.9	791.6	650.8	822.5	923.9	959.1

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
A Congenital Anomalies of the Central Nervous System	39.2	36.7	39.2	40.5	38.7	42.6	39.0	42.6	44.5	39.9	40.0	36.1	35.9	36.4	35.2
A01 Anencephalus	1.2	1.6	0.5	1.2	1.4	1.6	1.1	1.0	1.1	0.6	1.5	1.3	0.9	1.3	1.1
A02 Spina Bifida w/o Anencephaly	4.4	3.6	5.5	3.4	4.0	4.9	4.5	4.9	5.2	4.8	5.3	3.5	4.6	4.2	3.8
A03 Hydrocephalus w/o Spina Bifida	9.3	10.1	11.5	10.2	9.2	10.3	8.6	9.9	9.7	10.3	10.0	8.4	7.2	6.5	6.3
A04 Encephalocele	1.0	1.2	0.8	1.0	1.1	1.1	1.0	1.7	1.0	1.0	0.9	0.8	*	0.7	1.2
A05 Microcephalus	9.4	9.2	8.9	10.7	9.2	9.9	9.3	10.3	11.3	10.7	7.3	8.1	9.6	9.4	7.2
A99. All Other CNS Anomalies	21.2	16.9	19.3	20.8	21.6	23.3	21.7	23.6	24.1	20.8	23.0	20.3	19.0	20.8	21.7
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
B Congenital Anomalies of the Eye	26.0	28.1	28.6	30.1	29.4	28.2	24.0	28.8	23.9	24.5	24.9	22.5	21.7	25.6	19.6
B01 Anophthalmos/Microphthalmos	1.7	1.6	2.4	2.6	2.2	1.9	1.4	2.0	1.7	1.7	1.5	0.9	1.2	1.6	0.7
B02 Congenital Cataract	2.3	2.9	2.5	3.0	2.9	2.3	2.0	3.0	1.6	1.9	2.5	1.2	2.4	2.2	1.3
B03 Aniridia	0.3	*	*	*	*	0.5	0.3	*	*	*	*	-	*	*	*
B99. All Other Congenital Anomalies of the Eye	23.7	25.8	26.0	26.9	26.5	25.7	22.0	26.1	22.5	22.1	22.2	21.3	19.3	23.0	18.6
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
C Congenital Anomalies of the Ear, Face and Neck	16.0	16.4	17.8	18.9	16.2	15.7	15.3	20.1	15.4	13.8	16.7	12.9	14.3	15.3	13.2
C01 Aotia/Microtia	1.3	1.6	1.5	1.6	1.6	1.4	1.1	1.0	1.1	1.1	1.3	1.0	1.4	1.3	0.9
C99. All Other Congenital Anomalies of the Ear, Face and Neck	15.6	16.0	17.6	18.2	16.1	15.1	14.9	19.9	15.2	13.3	16.0	12.5	13.8	14.9	12.9

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
D Congenital Anomalies of the Heart and Circulatory System	183.2	157.7	172.9	185.3	184.1	199.0	185.7	207.3	215.9	188.5	196.2	159.4	162.8	172.5	176.7
D01 Common Truncus	1.3	0.8	1.6	1.0	1.9	1.2	1.4	1.3	1.4	1.2	1.8	0.6	1.9	1.6	1.3
D02 Transposition of Great Vessels	5.1	5.0	4.4	5.2	4.3	4.6	5.4	6.7	5.8	5.3	5.1	5.4	5.9	4.3	4.8
D03 Tetralogy of Fallot	5.4	5.5	5.2	5.5	6.2	4.3	5.5	5.3	5.9	4.8	6.5	4.0	6.3	6.1	5.2
D04 Ventricular Septal Defect	41.5	40.1	40.3	43.5	41.6	42.5	41.5	46.7	45.1	41.9	45.4	32.8	36.7	39.4	43.2
D05 Atrial Septal Defect	84.4	60.4	65.3	75.5	75.9	86.8	92.4	98.1	101.8	84.3	95.5	78.9	79.4	97.8	102.8
D06 Endocardial Cushion Defect	5.6	4.8	5.7	5.9	6.8	5.8	5.4	5.5	6.3	5.2	5.6	4.5	5.3	5.6	5.1
D07 Pulmonary Valve Atresia and Stenosis	11.0	10.5	12.4	10.4	13.2	10.0	10.8	14.0	13.1	11.6	11.1	7.2	10.2	8.9	9.8
D08 Tricuspid Valve Atresia and Stenosis	1.5	1.3	2.1	2.0	1.7	0.8	1.4	1.7	0.9	1.5	1.8	0.9	1.6	1.3	1.4
D09 Ebstein's Anomaly	1.4	2.6	3.5	2.9	1.4	0.8	0.8	1.0	0.9	0.5	1.0	0.6	0.8	0.7	1.1
D10 Aortic Valve Stenosis	2.4	3.1	2.0	2.4	2.7	2.7	2.2	2.7	2.4	2.5	2.3	1.7	1.7	2.2	2.1
D11 Hypoplastic Left Heart Syndrome	4.2	3.4	5.2	4.4	4.2	4.0	4.1	4.8	3.6	4.0	4.1	4.8	2.9	3.8	5.1
D12 Patent Ductus Arteriosus	54.0	41.5	49.3	51.5	58.2	58.2	55.6	65.2	69.0	55.0	62.2	43.7	46.9	57.3	42.9
D13 Coarctation of Aorta	6.3	6.1	5.2	6.8	6.7	6.0	6.5	6.3	7.5	7.0	7.3	4.5	5.5	6.0	7.4
D14 Pulmonary Artery Anomalies	18.7	18.7	22.3	23.2	21.5	19.2	17.1	23.8	24.2	20.0	20.6	17.9	16.9	10.1	1.3
D99. All Other Congenital Anomalies of the Heart and Circulatory System	75.5	66.4	70.4	80.2	80.9	93.8	73.7	82.1	95.0	81.2	79.2	64.4	64.7	59.6	58.9
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
E Congenital Anomalies of the Respiratory System	49.9	39.9	46.2	47.7	58.2	52.9	50.6	58.7	82.3	69.7	39.4	29.4	39.2	39.2	41.7
E01 Lung Agenesis/Hypoplasia	6.9	6.3	5.6	6.6	11.7	8.8	6.3	7.4	5.9	4.9	6.1	6.0	9.2	6.2	4.7
E02 Choanal Atresia	1.6	1.5	2.1	2.3	1.4	1.6	1.5	1.8	1.4	1.3	1.4	1.5	1.9	1.5	1.6
E99. All Other Congenital Anomalies of the Respiratory System	44.0	34.1	40.9	42.2	48.0	45.1	45.5	52.8	77.6	65.4	34.6	24.5	31.4	34.1	38.0
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
F Cleft Palate and Cleft Lip	15.7	14.8	17.3	15.8	16.8	15.0	15.5	15.8	17.7	15.9	15.2	17.8	14.1	14.4	12.9
F01 Cleft Palate	5.5	5.3	6.4	5.6	5.4	5.1	5.5	5.9	6.5	6.2	5.8	7.5	4.0	3.9	3.6
F02 Cleft Lip w and w/o Cleft Palate	10.2	9.5	10.8	10.2	11.4	9.9	10.1	10.0	11.2	9.7	9.5	10.3	10.2	10.5	9.3

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	53.0	57.5	62.4	60.7	51.5	54.1	50.0	53.9	64.0	56.0	55.1	45.4	40.7	42.6	39.4
G01 Esophageal Atresia/ Tracheoesophageal Fistula	2.8	2.5	3.5	3.4	3.6	3.6	2.4	3.4	2.8	3.2	2.3	1.1	2.3	2.1	1.6
G02 Rectal and Large Intestinal Atresia/Stenosis	4.7	5.5	4.6	5.1	4.6	5.0	4.6	4.8	5.9	4.3	4.4	3.7	4.9	4.9	3.6
G03 Pyloric Stenosis	16.9	18.8	23.3	20.3	16.0	15.7	15.5	15.4	18.5	16.2	18.9	14.2	11.2	13.7	15.2
G04 Hirshsprung's Disease (congenital megacolon)	3.1	3.2	3.8	3.3	3.2	3.2	2.9	2.8	2.9	2.7	2.8	2.0	4.0	3.6	2.3
G05 Biliary Atresia	1.1	1.2	1.1	0.8	1.2	1.4	1.1	1.0	1.0	0.9	1.3	1.1	1.1	1.5	1.3
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	28.0	30.3	29.6	31.8	27.4	29.5	26.9	30.5	36.3	32.0	28.9	25.8	20.0	20.7	18.8
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
H Congenital Anomalies of the Genital and Urinary Systems	135.2	151.9	142.7	144.7	140.7	143.8	128.6	156.6	157.6	141.3	122.6	93.9	96.8	131.5	122.1
H01 Renal Agenesis/Hypoplasia	5.5	7.3	5.6	6.6	6.0	4.9	5.1	5.5	4.7	6.1	6.6	4.2	4.7	4.4	4.7
H02 Bladder Exstrophy	0.3	*	0.8	0.5	*	*	0.2	0.5	*	*	*	*	*	*	-
H03 Obstructive Genitourinary Defects	21.7	19.5	21.8	22.8	23.1	23.2	21.5	25.7	24.3	22.3	22.3	13.7	15.8	22.6	24.5
H04 Hypospadias & Epispadias	30.9	33.6	29.7	31.3	30.0	29.0	31.0	37.3	26.5	28.6	35.0	26.7	28.7	37.8	26.9
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	111.1	126.1	120.3	120.4	118.6	123.3	103.8	129.8	137.5	120.5	92.0	69.9	73.3	100.3	100.3

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
I Congenital Anomalies of the Musculoskeletal System	165.7	156.3	172.3	179.6	165.0	154.5	165.8	179.7	195.1	184.5	137.8	114.1	150.1	166.6	194.9
I01 Upper Limb Reduction Deformities	2.5	3.1	2.6	2.9	2.8	2.0	2.4	2.0	2.1	2.7	3.2	2.3	2.8	2.5	1.7
I02 Lower Limb Reduction Deformities	2.0	1.7	2.2	2.0	1.9	2.1	2.0	2.5	2.5	1.7	1.6	2.2	1.8	1.7	1.9
I03 Gastroschisis/Omphalocele	6.2	4.7	5.7	4.1	5.6	6.0	6.8	6.4	7.4	6.7	5.9	5.7	8.3	7.0	7.0
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	1.8	1.5	2.0
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	4.7	4.5	3.2
I03c Other and Unspecified Abdominal Wall Anomalies	5.0	4.7	5.6	4.1	5.6	6.0	4.9	6.4	7.4	6.7	5.6	4.7	3.7	1.7	2.4
I04 Congenital Hip Dislocation	12.1	14.7	16.3	16.1	13.1	11.5	10.6	9.3	12.8	8.0	11.8	12.0	10.1	11.4	9.0
I05 Diaphragmatic Hernia	3.2	2.9	3.3	2.6	3.7	3.6	3.2	2.9	4.1	3.2	3.1	3.3	3.4	3.2	2.1
I99. All Other Congenital Anomalies of the Musculoskeletal System	149.0	136.9	152.3	163.0	148.1	138.5	149.9	164.9	177.0	170.7	122.5	98.1	132.4	150.2	180.0
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
J Congenital Anomalies of the Integument	57.1	22.8	23.5	24.0	23.0	34.8	78.7	49.0	100.2	38.5	113.0	99.5	73.3	93.0	65.3
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
K Chromosomal Anomalies	22.5	21.1	22.1	22.0	22.0	22.5	22.9	23.2	23.8	21.5	24.0	22.5	23.5	23.0	21.4
K01 Trisomy 13	0.9	1.1	0.8	0.8	1.1	0.9	0.8	1.3	0.6	0.8	0.8	0.6	0.5	1.0	0.9
K02 Down Syndrome	12.7	10.8	13.1	13.6	11.1	13.6	12.9	13.8	14.5	11.6	12.8	11.1	14.4	12.5	12.0
K03 Trisomy 18	1.4	1.0	1.6	1.6	2.2	1.2	1.3	1.2	1.4	1.2	1.8	1.5	0.9	1.4	1.3
K99. All Other Chromosomal Anomalies	8.7	9.5	7.9	7.7	9.1	7.6	9.0	8.4	7.7	9.1	9.1	10.1	8.6	10.1	8.8
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
L Other and Unspecified Congenital Anomalies	68.8	46.5	57.3	50.4	54.6	49.4	80.7	47.4	37.0	29.6	18.4	14.5	167.3	166.7	184.5

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
M Infectious Conditions Occurring in the Perinatal Period	16.1	16.2	17.0	18.8	17.0	15.5	15.5	12.6	15.0	10.9	22.1	16.3	17.4	18.4	12.1
M01 Syphilis	1.4	1.8	2.5	1.5	2.5	*	1.2	1.1	1.0	*	2.3	2.2	0.8	0.6	1.1
M02 Other Infections	14.7	14.4	14.5	17.3	14.5	15.1	14.4	11.5	13.9	10.5	19.8	14.1	16.6	17.7	11.1
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
N Familial/Congenital Neoplasms	1.1	1.4	1.2	1.2	1.2	0.8	1.0	1.3	1.3	1.2	1.2	*	0.7	1.1	0.9
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
O Endocrine/Metabolic Disorders	40.2	39.4	38.8	40.0	34.9	32.3	42.4	40.8	43.2	36.1	45.4	35.9	45.5	44.4	48.4
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
P Diseases of the Blood & Blood Forming Organs	22.4	18.3	17.4	20.6	20.3	19.2	24.7	25.4	23.6	20.2	24.6	19.8	27.8	29.6	27.3
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
Q Other Diseases of the Central and Peripheral Nervous System	24.4	27.5	27.3	27.6	25.6	25.8	22.8	27.9	28.4	23.5	22.7	18.8	18.4	23.8	17.2
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
R Other Diseases of the Eye	48.9	54.3	53.6	54.9	52.3	53.3	45.6	58.3	55.5	53.7	51.3	38.0	35.7	39.5	28.9
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
S Hearing Deficiency	41.6	29.5	43.3	48.4	35.8	31.8	44.3	39.4	36.1	31.0	35.0	32.9	44.6	72.6	66.7
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
T Other Diseases of the Heart & Circulatory System	35.1	39.2	34.2	36.2	33.0	27.7	35.9	32.5	38.9	34.2	37.2	32.2	34.1	35.2	42.9

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
U Other Diseases of the Gastrointestinal System	60.0	67.0	72.1	65.7	62.9	61.5	56.0	67.7	62.9	59.5	59.8	38.2	50.4	52.8	54.3
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
V Other Diseases of the Genital and Urinary Systems	3.3	4.1	3.5	3.7	3.9	4.1	2.9	3.4	3.5	2.3	2.1	3.3	2.9	3.5	2.5
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
W Other Fetal/Placental Anomalies	0.7	-	-	*	*	*	1.2	8.5	*	*	-	-	*	*	-
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
X Other Musculoskeletal System Diseases	0.2	*	*	*	0.5	*	0.2	*	*	*	*	*	*	*	*
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
Y Maternal Exposures Affecting Fetus	16.7	12.2	12.0	11.7	8.5	11.1	20.6	14.3	12.9	12.2	18.4	17.1	22.4	32.7	37.3
Y01 Fetal Alcohol Syndrome	1.1	1.9	1.7	1.6	1.0	1.3	0.8	1.3	1.6	0.8	*	*	0.9	0.5	0.5
Y99. Other Maternal Exposures Affecting the Fetus	15.7	10.3	10.3	10.2	7.5	9.9	19.8	13.1	11.3	11.5	18.1	16.6	21.6	32.4	36.8
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
One or More Reportable Diagnosis	811.9	750.3	795.9	796.7	751.3	761.9	839.9	871.5	918.5	782.9	791.6	650.8	822.5	923.9	959.1

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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 2000-2012,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
A Congenital Anomalies of the Central Nervous System	692	44	62	60	73	72	381	66	64	51	53	41	42	28	36
B Congenital Anomalies of the Eye	100	6	11	15	8	13	47	8	7	6	8	3	5	4	6
C Congenital Anomalies of the Ear, Face and Neck	103	7	10	8	11	11	56	14	2	8	12	6	7	3	4
D Congenital Anomalies of the Heart and Circulatory System	2,029	167	182	177	211	163	1,129	176	157	138	176	150	110	107	115
E Congenital Anomalies of the Respiratory System	762	81	58	77	89	75	382	75	69	59	46	31	36	31	35
F Cleft Palate and Cleft Lip	156	7	11	16	19	19	84	12	14	12	12	14	5	7	8
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	358	26	35	33	36	43	185	33	28	28	31	20	16	17	12
H Congenital Anomalies of the Genital and Urinary Systems	677	50	53	69	77	61	367	58	44	53	64	47	28	41	32
I Congenital Anomalies of the Musculoskeletal System	762	67	65	60	81	74	415	75	62	55	57	42	50	33	41
J Congenital Anomalies of the Integument	73	6	9	6	4	5	43	7	8	4	5	6	5	6	2
K Chromosomal Anomalies	548	58	45	43	63	46	293	57	31	30	47	37	27	34	30
L Other and Unspecified Congenital Anomalies	791	61	60	58	77	74	461	44	48	41	30	26	74	90	108

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 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
M Infectious Conditions Occurring in the Perinatal Period	225	22	26	24	22	14	117	14	19	11	21	22	8	14	8
N Familial/Congenital Neoplasms	3	1	1	-	-	-	1	-	-	1	-	-	-	-	-
O Endocrine/Metabolic Disorders	285	25	29	27	29	21	154	14	26	11	22	17	14	21	29
P Diseases of the Blood & Blood Forming Organs	211	20	14	13	15	9	140	22	21	11	17	18	20	15	16
Q Other Diseases of the Central and Peripheral Nervous System	128	12	10	11	11	9	75	13	12	14	6	9	5	6	10
R Other Diseases of the Eye	221	19	27	20	25	23	107	21	20	20	26	7	5	3	5
S Hearing Deficiency	64	3	5	7	12	6	31	6	4	5	3	4	3	3	3
T Other Diseases of the Heart & Circulatory System	447	55	30	35	34	32	261	32	47	36	29	38	20	28	31
U Other Diseases of the Gastrointestinal System	374	27	32	39	40	27	209	31	28	18	36	30	26	22	18
V Other Diseases of the Genital and Urinary Systems	8	-	-	1	1	1	5	1	-	-	1	-	-	2	1
W Other Fetal/Placental Anomalies	7	-	-	-	-	-	7	7	-	-	-	-	-	-	-
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	82	5	4	5	9	5	54	3	8	3	10	8	4	8	10
One or More Reportable Diagnosis	4,580	416	400	400	440	382	2,542	393	373	297	340	338	256	269	276

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

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 2000-2012,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
A Congenital Anomalies of the Central Nervous System	692	44	62	60	73	72	381	66	64	51	53	41	42	28	36
A01 Anencephalus	159	20	7	15	14	18	85	11	12	7	15	12	9	9	10
A02 Spina Bifida w/o Anencephaly	38	2	7	1	4	5	19	5	3	3	2	2	3	1	-
A03 Hydrocephalus w/o Spina Bifida	193	8	24	16	19	21	105	24	20	13	13	12	11	5	7
A04 Encephalocele	28	2	2	1	4	3	16	6	3	1	2	1	-	1	2
A05 Microcephalus	109	4	5	16	13	9	62	9	12	11	6	8	6	6	4
A99. All Other CNS Anomalies	309	15	30	24	39	30	171	30	28	31	19	13	19	12	19
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
B Congenital Anomalies of the Eye	100	6	11	15	8	13	47	8	7	6	8	3	5	4	6
B01 Anophthalmos/Microphthalmos	31	2	5	5	-	4	15	3	1	4	3	-	1	2	1
B02 Congenital Cataract	15	-	2	2	2	-	9	2	1	1	2	-	1	1	1
B03 Aniridia	1	-	-	-	-	-	1	1	-	-	-	-	-	-	-
B99. All Other Congenital Anomalies of the Eye	68	4	7	8	6	11	32	5	7	3	5	3	3	1	5
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
C Congenital Anomalies of the Ear, Face and Neck	103	7	10	8	11	11	56	14	2	8	12	6	7	3	4
C01 Anotia/Microtia	11	1	1	-	2	1	6	-	-	1	2	-	2	1	-
C99. All Other Congenital Anomalies of the Ear, Face and Neck	93	6	10	8	9	10	50	14	2	7	10	6	5	2	4

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 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
D Congenital Anomalies of the Heart and Circulatory System	2,029	167	182	177	211	163	1,129	176	157	138	176	150	110	107	115
D01 Common Truncus	34	2	4	1	3	2	22	2	2	3	6	-	4	3	2
D02 Transposition of Great Vessels	114	10	4	11	9	9	71	10	12	12	7	9	10	4	7
D03 Tetralogy of Fallot	83	13	6	4	8	8	44	5	5	5	11	5	3	3	7
D04 Ventricular Septal Defect	385	40	30	34	40	40	201	28	28	25	46	20	20	16	18
D05 Atrial Septal Defect	719	47	55	53	77	53	434	65	54	61	81	49	42	43	39
D06 Endocardial Cushion Defect	108	11	10	5	12	10	60	13	7	10	9	11	6	2	2
D07 Pulmonary Valve Atresia and Stenosis	114	12	12	7	12	6	65	10	10	6	17	4	5	4	9
D08 Tricuspid Valve Atresia and Stenosis	26	6	2	3	2	-	13	1	2	1	5	1	-	3	-
D09 Ebstein's Anomaly	37	8	5	7	-	1	16	1	3	2	1	3	2	2	2
D10 Aortic Valve Stenosis	35	2	5	-	1	2	25	4	4	2	4	2	1	4	4
D11 Hypoplastic Left Heart Syndrome	221	19	23	18	17	10	134	16	19	14	17	30	8	14	16
D12 Patent Ductus Arteriosus	777	59	52	49	92	64	461	79	69	62	89	42	38	49	33
D13 Coarctation of Aorta	121	9	5	9	10	11	77	12	17	13	7	6	4	11	7
D14 Pulmonary Artery Anomalies	168	20	19	10	20	10	89	15	7	15	18	19	10	3	2
D99. All Other Congenital Anomalies of the Heart and Circulatory System	1,222	90	107	113	118	102	692	100	90	74	104	95	76	79	74
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
E Congenital Anomalies of the Respiratory System	762	81	58	77	89	75	382	75	69	59	46	31	36	31	35
E01 Lung Agenesis/Hypoplasia	441	56	37	42	58	41	207	49	29	26	23	14	26	21	19
E02 Choanal Atresia	17	1	2	1	-	-	13	1	1	1	2	1	3	1	3
E99. All Other Congenital Anomalies of the Respiratory System	345	28	21	39	37	37	183	30	41	34	25	17	10	10	16
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
F Cleft Palate and Cleft Lip	156	7	11	16	19	19	84	12	14	12	12	14	5	7	8
F01 Cleft Palate	53	3	4	8	7	6	25	2	3	4	5	8	2	1	-
F02 Cleft Lip w and w/o Cleft Palate	103	4	7	8	12	13	59	10	11	8	7	6	3	6	8

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 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	358	26	35	33	36	43	185	33	28	28	31	20	16	17	12
G01 Esophageal Atresia/ Tracheoesophageal Fistula	52	3	6	4	7	8	24	5	2	6	4	2	1	2	2
G02 Rectal and Large Intestinal Atresia/Stenosis	54	2	4	3	5	10	30	7	4	4	4	2	2	2	5
G03 Pyloric Stenosis	18	5	3	1	3	1	5	1	1	-	-	1	1	-	1
G04 Hirshsprung's Disease (congenital megacolon)	13	1	4	1	1	-	6	-	2	-	1	-	-	2	1
G05 Biliary Atresia	12	1	1	2	-	1	7	1	1	1	1	3	-	-	-
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	253	17	22	26	25	32	131	24	20	19	25	13	15	11	4
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
H Congenital Anomalies of the Genital and Urinary Systems	677	50	53	69	77	61	367	58	44	53	64	47	28	41	32
H01 Renal Agenesis/Hypoplasia	178	17	10	20	21	13	97	12	9	17	17	14	9	7	12
H02 Bladder Exstrophy	4	-	-	-	-	-	4	2	-	-	-	1	1	-	-
H03 Obstructive Genitourinary Defects	125	9	3	12	17	12	72	12	10	8	15	12	2	8	5
H04 Hypospadias & Epispadias	73	4	10	8	5	11	35	7	2	8	7	3	2	2	4
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	506	34	40	52	57	48	275	46	36	41	46	30	21	36	19

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 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
I Congenital Anomalies of the Musculoskeletal System	762	67	65	60	81	74	415	75	62	55	57	42	50	33	41
I01 Upper Limb Reduction Deformities	27	2	2	1	3	4	15	2	3	1	3	-	1	4	1
I02 Lower Limb Reduction Deformities	14	-	1	2	-	3	8	2	2	-	-	2	-	1	1
I03 Gastroschisis/Omphalocele	110	5	8	5	13	6	73	12	8	8	8	9	10	7	11
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	4	2	7
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	4	3	2
I03c Other and Unspecified Abdominal Wall Anomalies	91	5	8	5	12	6	55	12	8	8	6	8	6	3	4
I04 Congenital Hip Dislocation	11	2	2	1	-	1	5	2	-	1	-	-	2	-	-
I05 Diaphragmatic Hernia	138	12	10	11	19	10	76	10	9	9	11	10	9	8	10
I99. All Other Congenital Anomalies of the Musculoskeletal System	540	49	46	48	51	63	283	55	46	41	40	27	32	20	22
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
J Congenital Anomalies of the Integument	73	6	9	6	4	5	43	7	8	4	5	6	5	6	2
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
K Chromosomal Anomalies	548	58	45	43	63	46	293	57	31	30	47	37	27	34	30
K01 Trisomy 13	104	13	7	7	11	10	56	13	4	5	8	6	3	8	9
K02 Down Syndrome	146	15	18	14	17	14	68	15	6	10	16	7	6	6	2
K03 Trisomy 18	154	11	16	11	19	10	87	11	13	7	15	13	7	12	9
K99. All Other Chromosomal Anomalies	196	24	9	15	27	13	108	24	9	10	9	12	13	16	15
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
L Other and Unspecified Congenital Anomalies	791	61	60	58	77	74	461	44	48	41	30	26	74	90	108

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 2000-2012,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
M Infectious Conditions Occurring in the Perinatal Period	225	22	26	24	22	14	117	14	19	11	21	22	8	14	8
M01 Syphilis	5	-	-	1	1	-	3	1	-	-	1	1	-	-	-
M02 Other Infections	220	22	26	23	21	14	114	13	19	11	20	21	8	14	8
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
N Familial/Congenital Neoplasms	3	1	1	-	-	-	1	-	-	1	-	-	-	-	-
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
O Endocrine/Metabolic Disorders	285	25	29	27	29	21	154	14	26	11	22	17	14	21	29
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
P Diseases of the Blood & Blood Forming Organs	211	20	14	13	15	9	140	22	21	11	17	18	20	15	16
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
Q Other Diseases of the Central and Peripheral Nervous System	128	12	10	11	11	9	75	13	12	14	6	9	5	6	10
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
R Other Diseases of the Eye	221	19	27	20	25	23	107	21	20	20	26	7	5	3	5
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
S Hearing Deficiency	64	3	5	7	12	6	31	6	4	5	3	4	3	3	3
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
T Other Diseases of the Heart & Circulatory System	447	55	30	35	34	32	261	32	47	36	29	38	20	28	31

**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 2000-2012,
 Cases Diagnosed within One Year from Birth
 (Continued)**

Other Reportable Conditions

Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
U Other Diseases of the Gastrointestinal System	374	27	32	39	40	27	209	31	28	18	36	30	26	22	18
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
V Other Diseases of the Genital and Urinary Systems	8	-	-	1	1	1	5	1	-	-	1	-	-	2	1
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
W Other Fetal/Placental Anomalies	7	-	-	-	-	-	7	7	-	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
Y Maternal Exposures Affecting Fetus	82	5	4	5	9	5	54	3	8	3	10	8	4	8	10
Y01 Fetal Alcohol Syndrome	3	-	-	1	1	1	-	-	-	-	-	-	-	-	-
Y99. Other Maternal Exposures Affecting the Fetus	79	5	4	4	8	4	54	3	8	3	10	8	4	8	10
Diagnostic Grouping	2000 to 2012	2000	2001	2002	2003	2004	2005 to 2012	2005	2006	2007	2008	2009	2010	2011	2012
One or More Reportable Diagnosis	4,580	416	400	400	440	382	2,542	393	373	297	340	338	256	269	276

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Mortality data includes all linked deaths identified through death year 2012.

Last Updated on January 13, 2015

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 2000-2012,
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
A Congenital Anomalies of the Central Nervous System	166	195	205	211	202	181	168	145	136	111	106
B Congenital Anomalies of the Eye	32	34	36	29	28	21	21	17	16	12	15
C Congenital Anomalies of the Ear, Face and Neck	25	29	30	36	27	24	22	26	25	16	14
D Congenital Anomalies of the Heart and Circulatory System	526	570	551	550	496	471	471	464	436	367	332
E Congenital Anomalies of the Respiratory System	216	224	241	239	219	203	174	136	113	98	102
F Cleft Palate and Cleft Lip	34	46	54	50	45	38	38	38	31	26	20
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	94	104	112	112	104	89	87	79	67	53	45
H Congenital Anomalies of the Genital and Urinary Systems	172	199	207	196	163	155	161	164	139	116	101
I Congenital Anomalies of the Musculoskeletal System	192	206	215	230	211	192	174	154	149	125	124
J Congenital Anomalies of the Integument	21	19	15	16	20	19	17	15	16	17	13
K Chromosomal Anomalies	146	151	152	166	134	118	108	114	111	98	91
L Other and Unspecified Congenital Anomalies	179	195	209	195	166	133	119	97	130	190	272

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 2000-2012,
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
M Infectious Conditions Occurring in the Perinatal Period	72	72	60	50	47	44	51	54	51	44	30
N Familial/Congenital Neoplasms	2	1	-	-	-	1	1	1	-	-	-
O Endocrine/Metabolic Disorders	81	85	77	64	61	51	59	50	53	52	64
P Diseases of the Blood & Blood Forming Organs	47	42	37	46	52	54	49	46	55	53	51
Q Other Diseases of the Central and Peripheral Nervous System	33	32	31	33	34	39	32	29	20	20	21
R Other Diseases of the Eye	66	72	68	69	64	61	66	53	38	15	13
S Hearing Deficiency	15	24	25	24	16	15	12	12	10	10	9
T Other Diseases of the Heart & Circulatory System	120	99	101	98	111	115	112	103	87	86	79
U Other Diseases of the Gastrointestinal System	98	111	106	98	86	77	82	84	92	78	66
V Other Diseases of the Genital and Urinary Systems	1	2	3	3	2	1	1	1	1	2	3
W Other Fetal/Placental Anomalies	-	-	-	7	7	7	-	-	-	-	-
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	14	18	19	17	16	14	21	21	22	20	22
One or More Reportable Diagnosis	1,216	1,240	1,222	1,215	1,148	1,063	1,010	975	934	863	801

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

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 2000-2012,
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
A Congenital Anomalies of the Central Nervous System	166	195	205	211	202	181	168	145	136	111	106
A01 Anencephalus	42	36	47	43	41	30	34	34	36	30	28
A02 Spina Bifida w/o Anencephaly	10	12	10	14	13	11	8	7	7	6	4
A03 Hydrocephalus w/o Spina Bifida	48	59	56	64	65	57	46	38	36	28	23
A04 Encephalocele	5	7	8	13	12	10	6	4	3	2	3
A05 Microcephalus	25	34	38	31	30	32	29	25	20	20	16
A99. All Other CNS Anomalies	69	93	93	99	88	89	78	63	51	44	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
B Congenital Anomalies of the Eye	32	34	36	29	28	21	21	17	16	12	15
B01 Anophthalmos/Microphthalmos	12	10	9	7	8	8	8	7	4	3	4
B02 Congenital Cataract	4	6	4	4	3	4	4	3	3	2	3
B03 Aniridia	-	-	-	1	1	1	-	-	-	-	-
B99. All Other Congenital Anomalies of the Eye	19	21	25	22	23	15	15	11	11	7	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
C Congenital Anomalies of the Ear, Face and Neck	25	29	30	36	27	24	22	26	25	16	14
C01 Anotia/Microtia	2	3	3	3	1	1	3	3	4	3	3
C99. All Other Congenital Anomalies of the Ear, Face and Neck	24	27	27	33	26	23	19	23	21	13	11

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 2000-2012,
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
D Congenital Anomalies of the Heart and Circulatory System	526	570	551	550	496	471	471	464	436	367	332
D01 Common Truncus	7	8	6	7	6	7	11	9	10	7	9
D02 Transposition of Great Vessels	25	24	29	28	31	34	31	28	26	23	21
D03 Tetralogy of Fallot	23	18	20	21	18	15	21	21	19	11	13
D04 Ventricular Septal Defect	104	104	114	108	96	81	99	91	86	56	54
D05 Atrial Septal Defect	155	185	183	195	172	180	196	191	172	134	124
D06 Endocardial Cushion Defect	26	27	27	35	30	30	26	30	26	19	10
D07 Pulmonary Valve Atresia and Stenosis	31	31	25	28	26	26	33	27	26	13	18
D08 Tricuspid Valve Atresia and Stenosis	11	7	5	3	3	4	8	7	6	4	3
D09 Ebstein's Anomaly	20	12	8	2	5	6	6	6	6	7	6
D10 Aortic Valve Stenosis	7	6	3	7	10	10	10	8	7	7	9
D11 Hypoplastic Left Heart Syndrome	60	58	45	43	45	49	50	61	55	52	38
D12 Patent Ductus Arteriosus	160	193	205	235	212	210	220	193	169	129	120
D13 Coarctation of Aorta	23	24	30	33	40	42	37	26	17	21	22
D14 Pulmonary Artery Anomalies	49	49	40	45	32	37	40	52	47	32	15
D99. All Other Congenital Anomalies of the Heart and Circulatory System	310	338	333	320	292	264	268	273	275	250	229
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
E Congenital Anomalies of the Respiratory System	216	224	241	239	219	203	174	136	113	98	102
E01 Lung Agenesis/Hypoplasia	135	137	141	148	119	104	78	63	63	61	66
E02 Choanal Atresia	4	3	1	1	2	3	4	4	6	5	7
E99. All Other Congenital Anomalies of the Respiratory System	88	97	113	104	108	105	100	76	52	37	36
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
F Cleft Palate and Cleft Lip	34	46	54	50	45	38	38	38	31	26	20
F01 Cleft Palate	15	19	21	15	11	9	12	17	15	11	3
F02 Cleft Lip w and w/o Cleft Palate	19	27	33	35	34	29	26	21	16	15	17

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 2000-2012,
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
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	94	104	112	112	104	89	87	79	67	53	45
G01 Esophageal Atresia/ Tracheoesophageal Fistula	13	17	19	20	15	13	12	12	7	5	5
G02 Rectal and Large Intestinal Atresia/Stenosis	9	12	18	22	21	15	12	10	8	6	9
G03 Pyloric Stenosis	9	7	5	5	3	2	1	1	2	2	2
G04 Hirshsprung's Disease (congenital megacolon)	6	6	2	1	2	2	3	1	1	2	3
G05 Biliary Atresia	4	3	3	2	3	3	3	5	4	3	-
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	65	73	83	81	76	63	64	57	53	39	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
H Congenital Anomalies of the Genital and Urinary Systems	172	199	207	196	163	155	161	164	139	116	101
H01 Renal Agenesis/Hypoplasia	47	51	54	46	34	38	43	48	40	30	28
H02 Bladder Exstrophy	-	-	-	2	2	2	-	1	2	2	1
H03 Obstructive Genitourinary Defects	24	32	41	41	34	30	33	35	29	22	15
H04 Hypospadias & Epispadias	22	23	24	23	20	17	17	18	12	7	8
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	126	149	157	151	130	123	123	117	97	87	76

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 2000-2012,
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
I Congenital Anomalies of the Musculoskeletal System	192	206	215	230	211	192	174	154	149	125	124
I01 Upper Limb Reduction Deformities	5	6	8	9	9	6	7	4	4	5	6
I02 Lower Limb Reduction Deformities	3	3	5	5	7	4	2	2	2	3	2
I03 Gastroschisis/Omphalocele	18	26	24	31	26	28	24	25	27	26	28
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	13
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	9
I03c Other and Unspecified Abdominal Wall Anomalies	18	25	23	30	26	28	22	22	20	17	13
I04 Congenital Hip Dislocation	5	3	2	3	3	3	1	1	2	2	2
I05 Diaphragmatic Hernia	33	40	40	39	29	28	29	30	30	27	27
I99. All Other Congenital Anomalies of the Musculoskeletal System	143	145	162	169	164	142	127	108	99	79	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
J Congenital Anomalies of the Integument	21	19	15	16	20	19	17	15	16	17	13
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
K Chromosomal Anomalies	146	151	152	166	134	118	108	114	111	98	91
K01 Trisomy 13	27	25	28	34	27	22	17	19	17	17	20
K02 Down Syndrome	47	49	45	46	35	31	32	33	29	19	14
K03 Trisomy 18	38	46	40	40	34	31	35	35	35	32	28
K99. All Other Chromosomal Anomalies	48	51	55	64	46	43	28	31	34	41	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
L Other and Unspecified Congenital Anomalies	179	195	209	195	166	133	119	97	130	190	272

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 2000-2012,
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
M Infectious Conditions Occurring in the Perinatal Period	72	72	60	50	47	44	51	54	51	44	30
M01 Syphilis	1	2	2	2	1	1	1	2	2	1	-
M02 Other Infections	71	70	58	48	46	43	50	52	49	43	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
N Familial/Congenital Neoplasms	2	1	-	-	-	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
O Endocrine/Metabolic Disorders	81	85	77	64	61	51	59	50	53	52	64
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
P Diseases of the Blood & Blood Forming Organs	47	42	37	46	52	54	49	46	55	53	51
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
Q Other Diseases of the Central and Peripheral Nervous System	33	32	31	33	34	39	32	29	20	20	21
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
R Other Diseases of the Eye	66	72	68	69	64	61	66	53	38	15	13
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
S Hearing Deficiency	15	24	25	24	16	15	12	12	10	10	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
T Other Diseases of the Heart & Circulatory System	120	99	101	98	111	115	112	103	87	86	79

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 2000-2012,
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
U Other Diseases of the Gastrointestinal System	98	111	106	98	86	77	82	84	92	78	66
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
V Other Diseases of the Genital and Urinary Systems	1	2	3	3	2	1	1	1	1	2	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
W Other Fetal/Placental Anomalies	-	-	-	7	7	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
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
Y Maternal Exposures Affecting Fetus	14	18	19	17	16	14	21	21	22	20	22
Y01 Fetal Alcohol Syndrome	1	2	3	2	1	-	-	-	-	-	-
Y99. Other Maternal Exposures Affecting the Fetus	13	16	16	15	15	14	21	21	22	20	22
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
One or More Reportable Diagnosis	1,216	1,240	1,222	1,215	1,148	1,063	1,010	975	934	863	801

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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 2000-2012,
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
A Congenital Anomalies of the Central Nervous System	108.4	126.9	130.8	133.0	122.6	113.6	109.5	104.3	104.4	89.8	87.5
B Congenital Anomalies of the Eye	28.0	29.7	31.9	26.2	27.2	21.7	23.3	19.7	19.9	15.1	19.9
C Congenital Anomalies of the Ear, Face and Neck	35.8	42.2	45.9	54.1	41.6	38.8	39.0	50.1	49.0	33.1	29.0
D Congenital Anomalies of the Heart and Circulatory System	77.6	81.0	75.4	72.8	62.8	61.4	63.6	71.1	72.2	65.1	57.5
E Congenital Anomalies of the Respiratory System	122.9	113.5	118.0	110.0	89.1	76.9	73.4	81.3	90.0	79.9	75.4
F Cleft Palate and Cleft Lip	53.9	71.0	88.2	82.1	73.2	61.3	63.1	65.0	56.6	49.2	42.9
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	39.6	45.9	52.4	54.8	47.6	40.8	40.3	42.1	40.7	36.1	32.6
H Congenital Anomalies of the Genital and Urinary Systems	29.7	35.8	37.5	34.7	28.1	27.1	31.0	38.1	38.1	31.6	25.6
I Congenital Anomalies of the Musculoskeletal System	28.8	30.7	33.5	36.0	31.4	27.4	27.2	29.3	31.9	25.5	21.5
J Congenital Anomalies of the Integument	22.7	20.7	14.3	11.7	8.6	8.1	5.5	5.0	4.8	5.6	5.0
K Chromosomal Anomalies	170.2	175.8	177.6	191.5	151.9	137.4	126.8	140.2	136.5	124.5	119.0
L Other and Unspecified Congenital Anomalies	88.3	92.5	105.2	100.6	97.7	92.9	113.0	128.6	56.9	48.2	46.6

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 2000-2012,
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
M Infectious Conditions Occurring in the Perinatal Period	105.4	105.1	90.9	86.5	85.9	91.1	86.7	91.8	78.5	74.2	55.7
N Familial/Congenital Neoplasms	*	*	-	-	-	*	*	*	-	-	-
O Endocrine/Metabolic Disorders	52.1	57.6	55.9	46.3	41.4	33.8	38.5	35.6	36.0	36.3	41.1
P Diseases of the Blood & Blood Forming Organs	63.5	55.6	47.9	55.4	60.1	62.1	58.2	59.4	65.6	60.3	53.5
Q Other Diseases of the Central and Peripheral Nervous System	30.5	30.6	30.5	32.5	32.6	38.9	34.7	37.2	28.7	28.8	31.3
R Other Diseases of the Eye	30.8	34.5	32.9	32.9	30.2	29.0	33.4	30.9	26.1	11.6	11.1
S Hearing Deficiency	9.4	14.5	16.8	17.5	11.7	11.2	9.5	10.1	7.7	5.9	4.3
T Other Diseases of the Heart & Circulatory System	83.2	73.8	81.1	82.2	88.4	86.9	82.5	83.1	72.3	74.4	62.5
U Other Diseases of the Gastrointestinal System	36.4	42.6	43.4	39.9	35.3	32.3	36.5	44.4	53.2	48.4	37.2
V Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	*	*	*
W Other Fetal/Placental Anomalies	-	-	-	63.1	63.1	63.6	-	-	-	-	-
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	29.6	43.1	47.1	39.3	32.9	28.3	39.3	36.9	32.7	24.4	21.1
One or More Reportable Diagnosis	39.5	40.8	41.1	39.8	35.5	32.9	32.9	36.5	35.5	31.6	26.3

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

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 2000-2012,
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
A Congenital Anomalies of the Central Nervous System	108.4	126.9	130.8	133.0	122.6	113.6	109.5	104.3	104.4	89.8	87.5
A01 Anencephalus	976.7	900.0	886.8	860.0	891.3	882.4	850.0	829.3	837.2	750.0	756.8
A02 Spina Bifida w/o Anencephaly	60.6	71.4	62.9	79.1	68.4	59.1	42.8	43.2	45.2	43.2	*
A03 Hydrocephalus w/o Spina Bifida	114.8	147.1	146.6	170.2	171.1	152.0	124.7	110.8	120.8	111.1	102.2
A04 Encephalocele	*	184.2	195.1	260.0	244.9	212.8	166.7	*	*	*	*
A05 Microcephalus	66.1	91.2	99.2	82.4	75.0	79.0	80.1	79.9	69.0	64.7	54.1
A99. All Other CNS Anomalies	92.1	116.1	110.1	112.9	97.7	103.5	93.2	82.0	70.3	64.2	72.2
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
B Congenital Anomalies of the Eye	28.0	29.7	31.9	26.2	27.2	21.7	23.3	19.7	19.9	15.1	19.9
B01 Anophthalmos/Microphthalmos	141.2	108.7	105.9	90.9	114.3	119.4	133.3	142.9	*	*	*
B02 Congenital Cataract	*	55.6	*	*	*	*	*	*	*	*	*
B03 Aniridia	-	-	-	*	*	*	-	-	-	-	-
B99. All Other Congenital Anomalies of the Eye	18.4	20.4	24.6	22.0	24.4	16.9	18.2	14.0	15.0	9.7	13.1
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
C Congenital Anomalies of the Ear, Face and Neck	35.8	42.2	45.9	54.1	41.6	38.8	39.0	50.1	49.0	33.1	29.0
C01 Anotia/Microtia	*	*	*	*	*	*	*	*	*	*	*
C99. All Other Congenital Anomalies of the Ear, Face and Neck	35.3	40.1	42.5	50.5	40.8	37.9	34.7	46.0	42.7	27.7	23.5

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 2000-2012,
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
D Congenital Anomalies of the Heart and Circulatory System	77.6	81.0	75.4	72.8	62.8	61.4	63.6	71.1	72.2	65.1	57.5
D01 Common Truncus	155.6	135.6	113.2	122.8	120.0	140.0	203.7	209.3	204.1	152.2	169.8
D02 Transposition of Great Vessels	130.2	133.3	160.2	140.0	142.9	152.5	155.8	148.1	136.1	128.5	123.5
D03 Tetralogy of Fallot	108.5	82.6	97.6	104.0	91.8	74.6	99.1	114.1	97.4	59.1	65.7
D04 Ventricular Septal Defect	63.9	64.0	69.5	64.6	56.4	48.3	60.7	63.2	64.3	45.2	40.2
D05 Atrial Septal Defect	58.7	65.8	59.7	58.5	47.3	50.5	56.5	61.7	58.2	45.9	39.3
D06 Endocardial Cushion Defect	120.4	113.0	113.4	150.9	134.5	140.8	123.8	163.9	145.3	108.6	55.6
D07 Pulmonary Valve Atresia and Stenosis	70.8	66.4	57.9	58.8	55.3	53.6	74.8	75.0	78.1	43.3	55.2
D08 Tricuspid Valve Atresia and Stenosis	154.9	92.1	*	*	*	*	153.8	134.6	117.6	*	*
D09 Ebstein's Anomaly	169.5	118.8	123.1	*	*	206.9	206.9	240.0	214.3	291.7	206.9
D10 Aortic Valve Stenosis	70.0	64.5	*	67.3	101.0	105.3	113.6	102.6	106.1	109.4	134.3
D11 Hypoplastic Left Heart Syndrome	352.9	324.0	277.8	259.0	286.6	314.1	344.8	393.5	398.6	393.9	285.7
D12 Patent Ductus Arteriosus	85.6	93.6	94.9	101.2	86.8	88.4	95.9	100.0	94.9	76.6	72.4
D13 Coarctation of Aorta	97.0	99.2	119.5	135.8	159.4	160.9	137.5	115.0	84.6	115.4	103.3
D14 Pulmonary Artery Anomalies	58.1	56.4	48.7	54.5	37.6	43.3	50.1	74.1	72.8	62.3	46.9
D99. All Other Congenital Anomalies of the Heart and Circulatory System	108.8	112.6	101.6	97.4	84.9	81.5	85.1	101.2	113.4	116.2	110.9
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
E Congenital Anomalies of the Respiratory System	122.9	113.5	118.0	110.0	89.1	76.9	73.4	81.3	90.0	79.9	75.4
E01 Lung Agenesis/Hypoplasia	553.3	440.5	402.9	412.3	422.0	452.2	373.2	310.3	256.1	251.0	290.7
E02 Choanal Atresia	*	*	*	*	*	*	*	*	109.1	*	125.0
E99. All Other Congenital Anomalies of the Respiratory System	57.2	57.0	64.9	55.7	48.6	42.8	45.4	50.5	49.4	36.1	30.9
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
F Cleft Palate and Cleft Lip	53.9	71.0	88.2	82.1	73.2	61.3	63.1	65.0	56.6	49.2	42.9
F01 Cleft Palate	65.5	83.7	101.4	71.8	49.8	38.6	52.6	73.0	74.6	62.5	*
F02 Cleft Lip w and w/o Cleft Palate	47.3	64.1	81.5	87.5	86.3	74.9	69.5	59.7	46.1	42.6	50.4

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 2000-2012,
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
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	39.6	45.9	52.4	54.8	47.6	40.8	40.3	42.1	40.7	36.1	32.6
G01 Esophageal Atresia/ Tracheoesophageal Fistula	104.8	125.0	139.7	148.1	121.0	111.1	117.6	150.0	104.5	*	*
G02 Rectal and Large Intestinal Atresia/Stenosis	45.2	64.9	95.2	118.9	105.5	79.8	66.7	67.1	52.6	39.0	59.6
G03 Pyloric Stenosis	11.0	9.0	*	*	*	*	*	*	*	*	*
G04 Hirshsprung's Disease (congenital megacolon)	44.4	45.1	*	*	*	*	*	*	*	*	*
G05 Biliary Atresia	*	*	*	*	*	*	*	*	*	*	-
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	53.9	63.4	72.7	72.4	62.2	50.8	53.4	54.8	60.8	51.4	44.8
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
H Congenital Anomalies of the Genital and Urinary Systems	29.7	35.8	37.5	34.7	28.1	27.1	31.0	38.1	38.1	31.6	25.6
H01 Renal Agenesis/Hypoplasia	182.9	216.1	240.0	219.0	178.0	186.3	200.9	235.3	221.0	197.4	179.5
H02 Bladder Exstrophy	-	-	-	*	*	*	-	*	*	*	*
H03 Obstructive Genitourinary Defects	28.5	36.4	46.2	44.6	36.6	33.1	38.9	49.9	48.0	37.1	21.2
H04 Hypospadias & Epispadias	17.7	19.5	20.7	18.7	17.0	14.7	15.4	16.6	11.4	6.6	7.6
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	26.1	31.9	33.7	31.7	26.2	25.3	28.4	34.4	35.4	31.4	24.7

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 2000-2012,
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
I Congenital Anomalies of the Musculoskeletal System	28.8	30.7	33.5	36.0	31.4	27.4	27.2	29.3	31.9	25.5	21.5
I01 Upper Limb Reduction Deformities	*	56.1	80.8	103.4	115.4	70.6	71.4	*	*	*	75.9
I02 Lower Limb Reduction Deformities	*	*	*	*	78.7	*	*	*	*	*	*
I03 Gastroschisis/Omphalocele	94.7	130.0	118.8	134.2	103.2	108.5	96.8	113.6	116.9	108.8	111.6
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	220.3
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	64.3
I03c Other and Unspecified Abdominal Wall Anomalies	95.2	126.3	114.4	130.4	103.2	108.5	90.2	107.3	122.0	146.6	147.7
I04 Congenital Hip Dislocation	*	*	*	*	*	*	*	*	*	*	*
I05 Diaphragmatic Hernia	287.0	322.6	315.0	297.7	214.8	217.1	224.8	260.9	263.2	238.9	275.5
I99. All Other Congenital Anomalies of the Musculoskeletal System	24.1	24.1	28.0	29.3	26.9	22.1	21.9	22.9	24.2	18.2	14.2
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
J Congenital Anomalies of the Integument	22.7	20.7	14.3	11.7	8.6	8.1	5.5	5.0	4.8	5.6	5.0
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
K Chromosomal Anomalies	170.2	175.8	177.6	191.5	151.9	137.4	126.8	140.2	136.5	124.5	119.0
K01 Trisomy 13	771.4	735.3	777.8	790.7	729.7	628.6	607.1	703.7	739.1	708.3	740.7
K02 Down Syndrome	95.3	99.8	91.5	93.5	65.9	61.9	66.7	77.5	65.2	43.9	32.0
K03 Trisomy 18	690.9	666.7	625.0	678.0	693.9	645.8	636.4	648.1	714.3	744.2	682.9
K99. All Other Chromosomal Anomalies	145.0	158.9	174.6	198.8	152.8	136.5	88.1	91.7	104.9	124.6	141.5
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
L Other and Unspecified Congenital Anomalies	88.3	92.5	105.2	100.6	97.7	92.9	113.0	128.6	56.9	48.2	46.6

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 2000-2012,
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
M Infectious Conditions Occurring in the Perinatal Period	105.4	105.1	90.9	86.5	85.9	91.1	86.7	91.8	78.5	74.2	55.7
M01 Syphilis	*	*	*	*	*	*	*	*	*	*	-
M02 Other Infections	117.0	116.5	96.0	91.1	89.3	95.3	92.3	98.1	83.3	77.9	58.6
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
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
O Endocrine/Metabolic Disorders	52.1	57.6	55.9	46.3	41.4	33.8	38.5	35.6	36.0	36.3	41.1
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
P Diseases of the Blood & Blood Forming Organs	63.5	55.6	47.9	55.4	60.1	62.1	58.2	59.4	65.6	60.3	53.5
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
Q Other Diseases of the Central and Peripheral Nervous System	30.5	30.6	30.5	32.5	32.6	38.9	34.7	37.2	28.7	28.8	31.3
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
R Other Diseases of the Eye	30.8	34.5	32.9	32.9	30.2	29.0	33.4	30.9	26.1	11.6	11.1
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
S Hearing Deficiency	9.4	14.5	16.8	17.5	11.7	11.2	9.5	10.1	7.7	5.9	4.3
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
T Other Diseases of the Heart & Circulatory System	83.2	73.8	81.1	82.2	88.4	86.9	82.5	83.1	72.3	74.4	62.5

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 2000-2012,
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
U Other Diseases of the Gastrointestinal System	36.4	42.6	43.4	39.9	35.3	32.3	36.5	44.4	53.2	48.4	37.2
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
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
W Other Fetal/Placental Anomalies	-	-	-	63.1	63.1	63.6	-	-	-	-	-
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
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
Y Maternal Exposures Affecting Fetus	29.6	43.1	47.1	39.3	32.9	28.3	39.3	36.9	32.7	24.4	21.1
Y01 Fetal Alcohol Syndrome	*	*	*	*	*	-	-	-	-	-	-
Y99. Other Maternal Exposures Affecting the Fetus	32.0	44.0	45.1	38.6	34.5	31.1	41.9	38.1	33.6	24.9	21.5
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
One or More Reportable Diagnosis	39.5	40.8	41.1	39.8	35.5	32.9	32.9	36.5	35.5	31.6	26.3

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
A Congenital Anomalies of the Central Nervous System	327	308	325	343	356	372	377	397	386	379	347	317	279	251
B Congenital Anomalies of the Eye	48	44	44	54	55	60	61	62	57	50	45	37	33	32
C Congenital Anomalies of the Ear, Face and Neck	51	48	53	56	52	52	61	56	54	58	53	49	38	40
D Congenital Anomalies of the Heart and Circulatory System	1,029	1,018	1,037	1,051	1,078	1,067	1,076	1,066	1,022	1,021	960	907	838	796
E Congenital Anomalies of the Respiratory System	414	420	416	436	470	468	455	443	444	413	355	316	272	238
F Cleft Palate and Cleft Lip	72	63	62	67	75	83	84	91	92	88	83	69	64	58
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	180	179	184	189	196	200	206	208	201	199	183	156	140	124
H Congenital Anomalies of the Genital and Urinary Systems	307	311	313	332	357	366	368	362	362	357	327	294	277	265
I Congenital Anomalies of the Musculoskeletal System	380	376	375	368	386	410	422	417	407	404	365	341	299	278
J Congenital Anomalies of the Integument	28	29	31	31	32	35	37	39	34	33	35	35	34	28
K Chromosomal Anomalies	251	271	284	282	306	310	312	285	270	274	248	229	206	205
L Other and Unspecified Congenital Anomalies	265	286	314	327	361	383	374	361	342	314	263	263	309	369

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1994 to 1999	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
M Infectious Conditions Occurring in the Perinatal Period	59	69	88	104	115	120	122	119	104	101	101	95	95	84
N Familial/Congenital Neoplasms	8	6	6	3	2	2	2	1	1	1	1	1	1	1
O Endocrine/Metabolic Disorders	131	130	141	143	146	150	145	146	128	123	111	104	111	114
P Diseases of the Blood & Blood Forming Organs	115	115	111	107	105	96	93	94	91	95	98	109	102	97
Q Other Diseases of the Central and Peripheral Nervous System	84	79	78	79	75	64	66	66	70	65	63	59	52	50
R Other Diseases of the Eye	96	101	111	117	127	129	135	136	129	135	117	99	81	66
S Hearing Deficiency	8	10	12	19	30	34	39	40	40	36	28	25	22	21
T Other Diseases of the Heart & Circulatory System	243	238	233	237	239	236	218	210	216	210	214	202	198	182
U Other Diseases of the Gastrointestinal System	215	202	203	212	210	200	196	197	183	180	170	169	160	150
V Other Diseases of the Genital and Urinary Systems	4	2	2	2	3	4	4	4	4	4	3	2	3	4
W Other Fetal/Placental Anomalies	-	-	-	-	-	-	7	7	7	7	7	7	-	-
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	29	27	27	26	34	37	31	34	33	38	37	36	41	43
One or More Reportable Diagnosis	2,348	2,329	2,356	2,401	2,440	2,429	2,431	2,388	2,285	2,225	2,123	1,997	1,873	1,776

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
A Congenital Anomalies of the Central Nervous System	327	308	325	343	356	372	377	397	386	379	347	317	279	251
A01 Anencephalus	66	72	66	76	80	86	85	77	77	77	75	66	64	62
A02 Spina Bifida w/o Anencephaly	33	29	31	29	26	25	24	25	21	22	20	18	14	11
A03 Hydrocephalus w/o Spina Bifida	93	87	97	98	105	107	112	124	113	110	103	93	74	61
A04 Encephalocele	20	16	16	14	16	14	18	19	18	19	16	13	8	7
A05 Microcephalus	48	40	40	51	53	58	56	64	70	60	55	52	49	41
A99. All Other CNS Anomalies	123	113	126	136	146	159	168	181	182	177	151	140	122	113
Diagnostic Grouping	1994 to 1999	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
B Congenital Anomalies of the Eye	48	44	44	54	55	60	61	62	57	50	45	37	33	32
B01 Anophthalmos/Microphthalmos	12	12	14	18	18	18	19	18	17	15	15	12	11	11
B02 Congenital Cataract	5	4	5	5	7	7	8	9	8	8	6	7	6	6
B03 Aniridia	-	-	-	-	-	-	1	1	1	1	1	1	-	-
B99. All Other Congenital Anomalies of the Eye	33	30	30	34	33	40	41	44	40	37	34	26	22	20
Diagnostic Grouping	1994 to 1999	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
C Congenital Anomalies of the Ear, Face and Neck	51	48	53	56	52	52	61	56	54	58	53	49	38	40
C01 Anotia/Microtia	1	2	3	3	5	5	5	4	4	6	4	5	6	6
C99. All Other Congenital Anomalies of the Ear, Face and Neck	50	46	51	54	48	48	57	53	50	52	49	44	32	34

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
D Congenital Anomalies of the Heart and Circulatory System	1,029	1,018	1,037	1,051	1,078	1,067	1,076	1,066	1,022	1,021	960	907	838	796
D01 Common Truncus	18	15	18	17	14	14	14	14	13	18	15	17	18	18
D02 Transposition of Great Vessels	64	64	62	63	57	55	53	55	63	59	59	60	54	49
D03 Tetralogy of Fallot	57	57	53	50	52	49	44	36	35	42	39	34	32	34
D04 Ventricular Septal Defect	207	211	211	212	215	223	212	200	195	207	187	167	155	145
D05 Atrial Septal Defect	270	273	294	306	321	327	350	357	363	391	363	352	330	315
D06 Endocardial Cushion Defect	67	62	62	56	54	58	61	57	57	61	60	56	45	40
D07 Pulmonary Valve Atresia and Stenosis	62	65	73	73	72	64	59	57	51	61	53	52	46	45
D08 Tricuspid Valve Atresia and Stenosis	18	20	19	19	16	14	14	10	9	11	10	10	12	10
D09 Ebstein's Anomaly	5	13	18	25	25	25	22	17	14	8	11	12	13	12
D10 Aortic Valve Stenosis	24	23	26	25	19	14	14	16	13	17	18	17	17	17
D11 Hypoplastic Left Heart Syndrome	132	132	137	136	125	112	103	103	94	93	106	104	102	99
D12 Patent Ductus Arteriosus	367	349	340	335	350	368	395	405	415	455	405	379	349	313
D13 Coarctation of Aorta	63	62	56	61	58	60	56	64	72	70	66	59	58	48
D14 Pulmonary Artery Anomalies	87	90	102	96	100	96	94	81	77	85	84	84	72	67
D99. All Other Congenital Anomalies of the Heart and Circulatory System	617	601	615	622	632	631	630	630	597	588	565	539	518	502
Diagnostic Grouping	1994 to 1999	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
E Congenital Anomalies of the Respiratory System	414	420	416	436	470	468	455	443	444	413	355	316	272	238
E01 Lung Agenesis/Hypoplasia	298	309	303	297	319	299	283	256	245	226	182	167	139	129
E02 Choanal Atresia	9	9	11	12	7	5	5	5	4	5	6	9	9	11
E99. All Other Congenital Anomalies of the Respiratory System	121	118	120	149	165	186	192	205	218	204	184	157	137	112
Diagnostic Grouping	1994 to 1999	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
F Cleft Palate and Cleft Lip	72	63	62	67	75	83	84	91	92	88	83	69	64	58
F01 Cleft Palate	30	26	24	27	32	32	30	30	30	27	28	24	23	20
F02 Cleft Lip w and w/o Cleft Palate	42	37	38	40	43	51	54	61	62	61	55	45	41	38

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	180	179	184	189	196	200	206	208	201	199	183	156	140	124
G01 Esophageal Atresia/ Tracheoesophageal Fistula	27	27	28	28	29	33	33	32	32	32	27	20	17	17
G02 Rectal and Large Intestinal Atresia/Stenosis	39	35	30	28	28	30	31	33	33	34	31	23	18	19
G03 Pyloric Stenosis	5	9	12	12	14	14	14	10	7	6	4	4	3	3
G04 Hirshsprung's Disease (congenital megacolon)	8	5	8	8	9	8	7	8	4	4	3	3	5	4
G05 Biliary Atresia	8	8	8	6	6	6	6	6	6	5	8	7	6	5
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	118	117	124	131	135	139	146	149	146	145	133	116	103	87
Diagnostic Grouping	1994 to 1999	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
H Congenital Anomalies of the Genital and Urinary Systems	307	311	313	332	357	366	368	362	362	357	327	294	277	265
H01 Renal Agenesis/Hypoplasia	96	95	89	91	101	97	93	85	92	89	82	78	73	76
H02 Bladder Exstrophy	3	3	3	2	2	1	2	2	2	2	3	4	2	2
H03 Obstructive Genitourinary Defects	45	51	45	49	57	61	65	66	71	74	69	59	55	50
H04 Hypospadias & Epispadias	8	12	21	29	30	38	45	43	41	40	38	29	24	26
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	237	234	237	252	268	278	277	279	280	274	247	220	210	193

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
I Congenital Anomalies of the Musculoskeletal System	380	376	375	368	386	410	422	417	407	404	365	341	299	278
I01 Upper Limb Reduction Deformities	15	12	12	9	9	13	14	15	14	16	13	10	12	10
I02 Lower Limb Reduction Deformities	15	10	11	11	6	8	8	10	9	7	9	6	5	4
I03 Gastroschisis/Omphalocele	56	52	51	46	49	45	49	52	52	55	51	55	50	53
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I03c Other and Unspecified Abdominal Wall Anomalies	56	52	51	46	48	44	48	51	51	52	48	48	39	35
I04 Congenital Hip Dislocation	13	11	12	12	8	8	8	6	5	4	4	5	3	3
I05 Diaphragmatic Hernia	74	75	69	65	70	73	72	69	68	68	59	58	56	57
I99. All Other Congenital Anomalies of the Musculoskeletal System	256	256	259	258	270	300	312	309	304	296	272	241	206	182
Diagnostic Grouping	1994 to 1999	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
J Congenital Anomalies of the Integument	28	29	31	31	32	35	37	39	34	33	35	35	34	28
Diagnostic Grouping	1994 to 1999	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
K Chromosomal Anomalies	251	271	284	282	306	310	312	285	270	274	248	229	206	205
K01 Trisomy 13	51	57	56	55	56	59	61	52	50	51	46	39	34	39
K02 Down Syndrome	71	72	82	82	90	93	93	84	76	78	68	60	51	47
K03 Trisomy 18	83	82	83	80	88	87	78	80	71	75	69	66	67	63
K99. All Other Chromosomal Anomalies	59	77	85	88	105	103	112	97	98	92	77	77	69	75
Diagnostic Grouping	1994 to 1999	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
L Other and Unspecified Congenital Anomalies	265	286	314	327	361	383	374	361	342	314	263	263	309	369

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1994 to 1999	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
M Infectious Conditions Occurring in the Perinatal Period	59	69	88	104	115	120	122	119	104	101	101	95	95	84
M01 Syphilis	6	4	3	4	2	2	3	3	3	3	3	3	2	2
M02 Other Infections	53	65	85	100	113	118	119	116	101	98	98	92	93	82
Diagnostic Grouping	1994 to 1999	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
N Familial/Congenital Neoplasms	8	6	6	3	2	2	2	1	1	1	1	1	1	1
Diagnostic Grouping	1994 to 1999	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
O Endocrine/Metabolic Disorders	131	130	141	143	146	150	145	146	128	123	111	104	111	114
Diagnostic Grouping	1994 to 1999	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
P Diseases of the Blood & Blood Forming Organs	115	115	111	107	105	96	93	94	91	95	98	109	102	97
Diagnostic Grouping	1994 to 1999	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
Q Other Diseases of the Central and Peripheral Nervous System	84	79	78	79	75	64	66	66	70	65	63	59	52	50
Diagnostic Grouping	1994 to 1999	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
R Other Diseases of the Eye	96	101	111	117	127	129	135	136	129	135	117	99	81	66
Diagnostic Grouping	1994 to 1999	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
S Hearing Deficiency	8	10	12	19	30	34	39	40	40	36	28	25	22	21
Diagnostic Grouping	1994 to 1999	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
T Other Diseases of the Heart & Circulatory System	243	238	233	237	239	236	218	210	216	210	214	202	198	182

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 1994-2012,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1994 to 1999	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
U Other Diseases of the Gastrointestinal System	215	202	203	212	210	200	196	197	183	180	170	169	160	150
Diagnostic Grouping	1994 to 1999	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
V Other Diseases of the Genital and Urinary Systems	4	2	2	2	3	4	4	4	4	4	3	2	3	4
Diagnostic Grouping	1994 to 1999	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
W Other Fetal/Placental Anomalies	-	-	-	-	-	-	7	7	7	7	7	7	-	-
Diagnostic Grouping	1994 to 1999	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
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1994 to 1999	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
Y Maternal Exposures Affecting Fetus	29	27	27	26	34	37	31	34	33	38	37	36	41	43
Y01 Fetal Alcohol Syndrome	10	7	6	4	4	5	3	3	3	2	1	-	-	-
Y99. Other Maternal Exposures Affecting the Fetus	19	20	21	22	30	32	28	31	30	36	36	36	41	43
Diagnostic Grouping	1994 to 1999	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
One or More Reportable Diagnosis	2,348	2,329	2,356	2,401	2,440	2,429	2,431	2,388	2,285	2,225	2,123	1,997	1,873	1,776

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
A Congenital Anomalies of the Central Nervous System	135.0	122.6	124.0	122.9	123.5	122.4	120.9	124.7	122.1	121.5	114.3	109.4	100.7	96.5
B Congenital Anomalies of the Eye	28.2	24.1	22.7	25.8	24.9	26.8	27.1	28.5	27.2	24.9	23.8	20.9	19.4	19.8
C Congenital Anomalies of the Ear, Face and Neck	42.1	41.0	44.6	44.3	41.0	40.4	44.8	41.9	42.5	47.2	45.4	43.4	36.3	39.9
D Congenital Anomalies of the Heart and Circulatory System	83.4	83.3	82.3	81.5	81.5	77.3	75.1	71.4	68.2	68.3	66.6	66.2	64.3	64.8
E Congenital Anomalies of the Respiratory System	193.0	186.1	162.5	152.0	142.7	129.6	115.8	100.0	94.8	90.9	86.0	81.1	75.6	78.7
F Cleft Palate and Cleft Lip	56.5	49.2	47.6	51.3	58.1	65.2	67.7	72.1	74.7	72.7	69.2	59.1	56.6	55.2
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	43.5	42.2	41.7	42.0	43.6	44.7	46.6	46.7	46.5	47.4	45.1	40.8	38.6	38.0
H Congenital Anomalies of the Genital and Urinary Systems	36.9	34.3	32.1	32.0	33.3	32.9	32.2	31.8	32.2	32.9	32.3	31.4	31.2	32.1
I Congenital Anomalies of the Musculoskeletal System	37.0	35.9	33.8	31.2	31.4	32.5	32.3	31.1	30.3	31.6	30.5	29.2	26.5	25.2
J Congenital Anomalies of the Integument	14.1	15.6	16.9	17.2	18.0	17.8	16.2	12.0	10.0	7.4	6.6	6.2	5.6	5.0
K Chromosomal Anomalies	163.5	174.6	176.6	173.6	183.1	179.7	180.9	163.7	157.4	159.4	146.3	137.0	125.7	129.9
L Other and Unspecified Congenital Anomalies	148.4	134.3	117.7	106.1	103.9	101.3	94.3	94.8	100.1	104.9	107.2	70.8	61.8	56.0

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1994 to 1999	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
M Infectious Conditions Occurring in the Perinatal Period	71.4	80.0	92.1	94.5	96.9	95.8	96.7	96.6	91.0	86.6	89.0	83.8	80.4	74.5
N Familial/Congenital Neoplasms	97.6	69.0	67.4	*	*	*	*	*	*	*	*	*	*	*
O Endocrine/Metabolic Disorders	62.5	56.4	55.9	53.2	51.6	51.8	49.4	49.5	44.4	42.2	38.6	34.9	37.4	38.5
P Diseases of the Blood & Blood Forming Organs	90.6	89.4	86.5	79.1	73.4	64.8	59.2	58.0	55.4	56.8	59.8	63.8	59.3	56.1
Q Other Diseases of the Central and Peripheral Nervous System	41.3	38.2	37.1	37.1	35.2	29.9	31.5	31.6	34.7	33.6	34.6	34.7	32.2	34.5
R Other Diseases of the Eye	24.5	25.0	26.8	28.0	30.2	30.1	31.9	32.3	31.0	33.1	30.5	27.8	24.8	22.8
S Hearing Deficiency	8.4	8.4	7.3	8.8	12.2	12.6	13.2	13.3	14.1	13.7	11.0	9.5	7.4	6.5
T Other Diseases of the Heart & Circulatory System	79.2	81.6	80.1	79.7	80.2	84.0	82.7	80.8	84.0	82.4	85.7	79.9	78.8	72.7
U Other Diseases of the Gastrointestinal System	41.0	38.7	38.3	40.4	40.5	38.9	38.0	39.1	37.9	38.3	39.3	41.1	41.5	40.9
V Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W Other Fetal/Placental Anomalies	-	-	-	-	-	-	61.9	60.9	60.3	61.4	62.5	63.1	-	-
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	44.3	40.0	37.2	33.6	42.5	43.3	34.2	37.6	36.8	39.3	35.1	30.9	30.3	26.7
One or More Reportable Diagnosis	46.5	45.3	43.7	42.8	42.3	41.0	39.7	38.0	36.9	36.3	36.0	34.1	32.3	31.1

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
A Congenital Anomalies of the Central Nervous System	135.0	122.6	124.0	122.9	123.5	122.4	120.9	124.7	122.1	121.5	114.3	109.4	100.7	96.5
A01 Anencephalus	956.5	960.0	956.5	962.0	941.2	924.7	914.0	895.3	885.1	855.6	862.1	857.1	800.0	794.9
A02 Spina Bifida w/o Anencephaly	98.5	88.4	93.4	90.1	81.3	75.1	70.2	69.8	60.9	60.4	56.8	52.8	42.9	36.2
A03 Hydrocephalus w/o Spina Bifida	126.2	116.9	125.5	123.0	133.8	132.3	141.1	158.8	149.3	147.7	142.5	138.2	119.2	107.4
A04 Encephalocele	266.7	219.2	238.8	209.0	225.4	179.5	200.0	218.4	204.5	220.9	197.5	180.6	137.9	120.7
A05 Microcephalus	93.0	72.5	69.2	79.9	77.9	79.6	74.3	82.8	88.8	81.3	77.1	74.8	73.0	67.3
A99. All Other CNS Anomalies	109.3	96.5	101.4	99.8	101.5	102.8	103.3	106.3	106.7	103.3	90.5	88.3	80.2	77.3
Diagnostic Grouping	1994 to 1999	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
B Congenital Anomalies of the Eye	28.2	24.1	22.7	25.8	24.9	26.8	27.1	28.5	27.2	24.9	23.8	20.9	19.4	19.8
B01 Anophthalmos/Microphthalmos	89.6	89.6	99.3	114.6	109.8	113.9	117.3	111.1	111.8	109.5	126.1	110.1	107.8	123.6
B02 Congenital Cataract	*	*	*	*	33.7	33.2	37.2	45.9	43.0	44.9	38.7	46.1	43.2	45.1
B03 Aniridia	-	-	-	-	-	-	*	*	*	*	*	*	-	-
B99. All Other Congenital Anomalies of the Eye	22.4	18.6	17.3	18.2	16.6	19.7	20.1	22.3	21.0	20.3	19.7	16.1	14.2	13.6
Diagnostic Grouping	1994 to 1999	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
C Congenital Anomalies of the Ear, Face and Neck	42.1	41.0	44.6	44.3	41.0	40.4	44.8	41.9	42.5	47.2	45.4	43.4	36.3	39.9
C01 Anotia/Microtia	*	*	*	*	*	*	*	*	*	63.8	*	*	69.8	73.2
C99. All Other Congenital Anomalies of the Ear, Face and Neck	42.3	40.5	44.1	44.1	39.0	38.3	42.8	40.5	40.3	43.3	43.1	40.0	31.5	35.1

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
D Congenital Anomalies of the Heart and Circulatory System	83.4	83.3	82.3	81.5	81.5	77.3	75.1	71.4	68.2	68.3	66.6	66.2	64.3	64.8
D01 Common Truncus	180.0	163.0	173.1	163.5	132.1	140.0	137.3	128.4	126.2	162.2	161.3	171.7	180.0	187.5
D02 Transposition of Great Vessels	173.0	173.4	165.8	164.1	153.2	151.9	135.2	138.5	155.9	147.9	145.3	144.9	142.9	136.5
D03 Tetralogy of Fallot	128.1	130.4	120.7	114.4	117.4	116.1	106.3	87.0	86.2	101.4	102.6	85.9	80.4	89.0
D04 Ventricular Septal Defect	64.7	66.8	65.9	65.3	65.7	68.6	64.2	60.1	58.8	62.7	59.5	55.4	54.0	52.1
D05 Atrial Septal Defect	64.6	62.8	64.4	63.4	62.9	59.4	58.5	55.4	54.7	57.5	53.9	54.0	51.7	50.4
D06 Endocardial Cushion Defect	170.1	159.0	152.0	134.6	124.1	130.0	136.2	123.4	126.4	138.0	147.8	142.9	116.9	110.2
D07 Pulmonary Valve Atresia and Stenosis	69.0	74.5	79.3	80.6	77.7	70.6	64.6	60.8	55.6	66.5	63.9	63.6	62.1	65.6
D08 Tricuspid Valve Atresia and Stenosis	181.8	204.1	168.1	153.2	128.0	116.7	112.0	84.0	81.8	103.8	105.3	97.1	125.0	99.0
D09 Ebstein's Anomaly	*	134.0	130.4	149.7	147.1	148.8	139.2	126.9	148.9	115.9	189.7	210.5	245.3	222.2
D10 Aortic Valve Stenosis	134.8	121.1	136.1	125.0	90.9	65.7	68.6	83.3	66.3	88.5	101.7	105.6	111.8	117.2
D11 Hypoplastic Left Heart Syndrome	463.2	458.3	446.3	426.3	390.6	343.6	306.5	306.5	295.6	299.0	339.7	353.7	368.2	343.8
D12 Patent Ductus Arteriosus	95.3	96.1	93.4	92.9	93.3	92.9	94.2	89.9	91.5	98.5	92.7	91.2	87.7	87.3
D13 Coarctation of Aorta	145.8	135.4	121.5	128.2	117.2	122.4	116.7	129.8	140.6	136.7	138.4	127.7	128.6	109.3
D14 Pulmonary Artery Anomalies	68.1	68.4	71.1	62.3	62.7	59.2	56.4	47.1	46.0	52.3	54.1	56.0	54.8	65.6
D99. All Other Congenital Anomalies of the Heart and Circulatory System	111.1	109.8	109.8	109.9	110.9	105.1	102.7	97.8	91.6	91.4	92.1	95.1	97.7	105.4
Diagnostic Grouping	1994 to 1999	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
E Congenital Anomalies of the Respiratory System	193.0	186.1	162.5	152.0	142.7	129.6	115.8	100.0	94.8	90.9	86.0	81.1	75.6	78.7
E01 Lung Agenesis/Hypoplasia	675.7	670.3	635.2	600.0	550.0	495.9	469.3	431.7	422.4	397.9	375.3	350.8	307.5	300.0
E02 Choanal Atresia	78.9	75.0	83.3	85.1	50.4	*	*	*	*	*	54.1	80.4	84.9	103.8
E99. All Other Congenital Anomalies of the Respiratory System	69.6	64.4	56.6	61.5	59.4	60.5	56.4	52.2	52.0	50.1	49.3	44.8	42.5	41.9
Diagnostic Grouping	1994 to 1999	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
F Cleft Palate and Cleft Lip	56.5	49.2	47.6	51.3	58.1	65.2	67.7	72.1	74.7	72.7	69.2	59.1	56.6	55.2
F01 Cleft Palate	62.2	55.1	50.6	57.2	68.8	71.0	68.5	67.0	68.2	61.8	61.7	55.3	56.9	55.2
F02 Cleft Lip w and w/o Cleft Palate	53.0	45.8	45.8	48.0	52.1	62.0	67.3	74.8	78.3	78.8	73.7	61.3	56.5	55.2

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	43.5	42.2	41.7	42.0	43.6	44.7	46.6	46.7	46.5	47.4	45.1	40.8	38.6	38.0
G01 Esophageal Atresia/ Tracheoesophageal Fistula	98.2	102.3	107.7	108.1	113.3	126.0	127.4	123.1	126.5	135.0	132.4	108.7	103.0	114.9
G02 Rectal and Large Intestinal Atresia/Stenosis	106.8	90.9	78.3	73.3	71.8	77.7	80.7	85.9	87.5	93.2	89.1	67.6	53.9	63.3
G03 Pyloric Stenosis	*	6.1	7.6	7.5	9.0	9.4	9.8	7.1	5.4	4.7	*	*	*	*
G04 Hirshsprung's Disease (congenital megacolon)	32.5	*	29.5	30.0	33.3	30.3	27.8	32.5	*	*	*	*	*	*
G05 Biliary Atresia	73.4	72.7	76.9	65.9	65.2	65.2	69.0	72.3	75.9	*	98.8	93.3	75.0	*
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	59.5	56.4	58.1	59.6	60.2	60.8	62.8	62.8	61.3	62.6	58.8	55.0	52.6	50.9
Diagnostic Grouping	1994 to 1999	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
H Congenital Anomalies of the Genital and Urinary Systems	36.9	34.3	32.1	32.0	33.3	32.9	32.2	31.8	32.2	32.9	32.3	31.4	31.2	32.1
H01 Renal Agenesis/Hypoplasia	221.2	206.5	189.8	190.8	208.2	203.8	199.1	199.1	214.5	209.9	207.6	202.6	199.5	211.1
H02 Bladder Exstrophy	*	*	*	*	*	*	*	*	*	*	*	*	*	*
H03 Obstructive Genitourinary Defects	34.5	37.4	31.5	32.7	36.3	36.5	36.9	36.5	39.6	41.8	42.4	39.0	38.1	35.5
H04 Hypospadias & Epispadias	5.9	6.7	9.9	12.3	12.6	15.8	18.2	18.2	17.7	17.1	16.8	13.1	11.1	12.2
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	33.1	30.7	29.5	29.8	30.3	29.9	28.9	29.0	29.4	30.2	29.6	28.9	29.6	29.8

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1994 to 1999	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
I Congenital Anomalies of the Musculoskeletal System	37.0	35.9	33.8	31.2	31.4	32.5	32.3	31.1	30.3	31.6	30.5	29.2	26.5	25.2
I01 Upper Limb Reduction Deformities	71.1	55.6	55.8	41.3	41.5	62.2	70.0	81.1	76.1	86.5	73.9	54.9	64.9	56.5
I02 Lower Limb Reduction Deformities	111.1	76.3	82.1	80.3	41.1	52.3	49.7	59.2	55.9	45.5	58.4	40.8	*	*
I03 Gastroschisis/Omphalocele	134.0	133.0	129.1	124.0	126.0	111.9	116.4	115.0	113.0	114.8	108.1	112.5	102.7	112.5
I03a Omphalocele	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I03b Gastroschisis	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I03c Other and Unspecified Abdominal Wall Anomalies	134.3	133.3	129.8	124.7	124.4	110.3	114.6	113.3	111.1	109.7	105.0	113.7	108.3	119.5
I04 Congenital Hip Dislocation	11.8	10.1	10.8	10.6	7.1	7.2	7.6	5.9	*	*	*	*	*	*
I05 Diaphragmatic Hernia	308.3	312.5	285.1	279.0	288.1	288.5	292.7	266.4	265.6	261.5	236.0	238.7	231.4	267.6
I99. All Other Congenital Anomalies of the Musculoskeletal System	29.3	28.5	26.9	24.9	24.9	26.7	26.6	25.5	24.9	25.5	25.2	22.9	20.3	18.3
Diagnostic Grouping	1994 to 1999	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
J Congenital Anomalies of the Integument	14.1	15.6	16.9	17.2	18.0	17.8	16.2	12.0	10.0	7.4	6.6	6.2	5.6	5.0
Diagnostic Grouping	1994 to 1999	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
K Chromosomal Anomalies	163.5	174.6	176.6	173.6	183.1	179.7	180.9	163.7	157.4	159.4	146.3	137.0	125.7	129.9
K01 Trisomy 13	662.3	721.5	727.3	743.2	767.1	797.3	782.1	732.4	704.2	718.3	718.8	672.4	653.8	722.2
K02 Down Syndrome	82.8	85.0	92.2	88.7	97.0	96.4	94.4	82.2	76.5	80.2	71.1	63.4	55.9	54.4
K03 Trisomy 18	830.0	811.9	790.5	733.9	704.0	696.0	684.2	678.0	633.9	657.9	669.9	680.4	683.7	663.2
K99. All Other Chromosomal Anomalies	105.5	129.4	138.0	144.3	162.0	155.4	171.5	155.9	155.6	143.8	120.5	120.5	106.6	115.6
Diagnostic Grouping	1994 to 1999	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
L Other and Unspecified Congenital Anomalies	148.4	134.3	117.7	106.1	103.9	101.3	94.3	94.8	100.1	104.9	107.2	70.8	61.8	56.0

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1994 to 1999	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
M Infectious Conditions Occurring in the Perinatal Period	71.4	80.0	92.1	94.5	96.9	95.8	96.7	96.6	91.0	86.6	89.0	83.8	80.4	74.5
M01 Syphilis	22.7	*	*	*	*	*	*	*	*	*	*	*	*	*
M02 Other Infections	94.3	99.5	111.7	109.2	111.2	104.9	104.9	103.9	95.7	91.7	93.8	88.5	85.0	78.7
Diagnostic Grouping	1994 to 1999	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
N Familial/Congenital Neoplasms	97.6	69.0	67.4	*	*	*	*	*	*	*	*	*	*	*
Diagnostic Grouping	1994 to 1999	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
O Endocrine/Metabolic Disorders	62.5	56.4	55.9	53.2	51.6	51.8	49.4	49.5	44.4	42.2	38.6	34.9	37.4	38.5
Diagnostic Grouping	1994 to 1999	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
P Diseases of the Blood & Blood Forming Organs	90.6	89.4	86.5	79.1	73.4	64.8	59.2	58.0	55.4	56.8	59.8	63.8	59.3	56.1
Diagnostic Grouping	1994 to 1999	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
Q Other Diseases of the Central and Peripheral Nervous System	41.3	38.2	37.1	37.1	35.2	29.9	31.5	31.6	34.7	33.6	34.6	34.7	32.2	34.5
Diagnostic Grouping	1994 to 1999	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
R Other Diseases of the Eye	24.5	25.0	26.8	28.0	30.2	30.1	31.9	32.3	31.0	33.1	30.5	27.8	24.8	22.8
Diagnostic Grouping	1994 to 1999	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
S Hearing Deficiency	8.4	8.4	7.3	8.8	12.2	12.6	13.2	13.3	14.1	13.7	11.0	9.5	7.4	6.5
Diagnostic Grouping	1994 to 1999	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
T Other Diseases of the Heart & Circulatory System	79.2	81.6	80.1	79.7	80.2	84.0	82.7	80.8	84.0	82.4	85.7	79.9	78.8	72.7

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 1994-2012,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1994 to 1999	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
U Other Diseases of the Gastrointestinal System	41.0	38.7	38.3	40.4	40.5	38.9	38.0	39.1	37.9	38.3	39.3	41.1	41.5	40.9
Diagnostic Grouping	1994 to 1999	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
V Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Diagnostic Grouping	1994 to 1999	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
W Other Fetal/Placental Anomalies	-	-	-	-	-	-	61.9	60.9	60.3	61.4	62.5	63.1	-	-
Diagnostic Grouping	1994 to 1999	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
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1994 to 1999	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
Y Maternal Exposures Affecting Fetus	44.3	40.0	37.2	33.6	42.5	43.3	34.2	37.6	36.8	39.3	35.1	30.9	30.3	26.7
Y01 Fetal Alcohol Syndrome	53.8	40.5	38.7	*	*	*	*	*	*	*	*	-	-	-
Y99. Other Maternal Exposures Affecting the Fetus	40.0	39.4	36.3	34.5	44.6	43.8	35.2	38.8	37.3	40.4	36.5	32.6	31.4	27.3
Diagnostic Grouping	1994 to 1999	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
One or More Reportable Diagnosis	46.5	45.3	43.7	42.8	42.3	41.0	39.7	38.0	36.9	36.3	36.0	34.1	32.3	31.1

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.)

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through April 30, 2014

Last Updated on January 13, 2015

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