
MICHIGAN DEPARTMENT OF COMMUNITY HEALTH

Division for Vital Records and Health Statistics

MICHIGAN BIRTH DEFECTS SURVEILLANCE REGISTRY

BIRTH DEFECTS IN MICHIGAN

All Cases Reported and Processed by June 30, 2009



LANSING, MICHIGAN
SEPTEMBER 2008

Table Of Contents

Overview		
Summary	1
Data Quality Considerations	2
Table 1	Michigan Birth Defect Cases and Prevalence Rates Michigan Resident Children Born in Michigan Live Births during 1992-2006	3
Table 2	Birth Defects Cases by Time to Diagnosis and Birth Year Michigan Resident Cases, 1992-2006	4
Table 3	Birth Defects Cases by Leading Diagnostic Groups and by Birth Year Interval Michigan Resident Children 1992-2006 Three Year Moving Total Prevalence	5
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, 1992-2006	6
Table 4-B	Deaths Among Children by Time to Death and Birth Year, Michigan Live Birth Registry, 1992-2006	7
Table 5-A	Mortality Rates Among Children with Birth Defects by Time to Death and Birth Year Michigan Birth Defects Registry Live Births during 1992-2006	8
Table 5-B	Mortality Rates Among Children with Birth Defects by Time to Death and Birth Year Michigan Live Birth Registry Live Births during 1992-2006	9
Table 6-A	Cumulative Deaths Among Children with Birth Defects by Time to Death and Birth Year Michigan Birth Defects Registry Live Births during 1992-2006	10
Table 6-B	Cumulative Deaths Among Children with Birth Defects by Time to Death and Birth Year Michigan Live Birth Registry Live Births during 1992-2006	11
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 1992-2006	12
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 1992-2006	13
Figure 1	Cumulative Mortality Rates for Michigan Children with Reportable Conditions versus Deaths of All Children, 1992-2006	14
Birth Defects by Diagnostic Code Group and Birth Year		
Figure 2	Total Birth Defects by Summary Diagnostic Code Group, 2003-2006 , Michigan Resident Children Born in Michigan Cases Diagnosed within One Year from Birth	15
Table 8	Birth Defects by Summary Diagnostic Code Group and Birth Year Michigan Resident Children Born in Michigan, 1992,1995 and 1999-2006	17
Table 9	Birth Defects by Detailed Diagnostic Code Group and Birth Year Michigan Resident Children Born in Michigan, 1992,1995 and 1999-2006	19
Table 10	Prevalence Rates by Summary Diagnostic Code Group and Birth Year, Michigan Resident Children Born in Michigan, 1992,1995 and 1999-2006	25
Table 11	Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year, Michigan Resident Children Born in Michigan During 1992,1995 and 1999-2006	27

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 1992, 1995 and 1999-2006	33
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 1992, 1995 and 1999-2006	35
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 1992-1994 and 1999-2005, Cases Diagnosed within One Year from Birth Three-year Infant Mortality Totals	41
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 1992-1994 and 1999-2005 Three-Year Mortality Totals	43
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 1992-1994 and 1999-2005, Cases Diagnosed within One Year from Birth Moving Three-year Mortality Rates	49
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 1992-1994 and 1999-2005, Cases Diagnosed within One Year from Birth Moving Three-year Mortality Rates	51
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 1992-2006 Six-year Mortality Totals	57
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 1992-2006 Six-Year Mortality Totals	59
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 1992-2006 Moving Six-year Mortality Rates	65
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 1992-2006 Moving Six-year Mortality Rates	67
Appendix A	Birth Defect Groups and ICD-9-CM Diagnosis Codes	73

Birth Defects Prevalence and Mortality Tables

Vital Records and Health Data Development Section 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 2006. Selected high points concerning these data are:

➤ Birth Defect Cases and Case Rates

During 2006, there were 10,605 cases of birth defects reported for children under one year of age for a rate of 846.0 cases per 10,000 resident live births. For the same children born during 2006, there were 11,730 cases reported for children under two years of age. This translates into a prevalence rate of 935.7 cases per 10,000 resident live births. Starting in 2000, significant efforts to improve reporting quality and completeness were initiated and the prevalence rate for two-year olds based upon reported cases has been above 800 per 10,000 for the past five years. (See Table 1.)

➤ Infant Death Rates

The infant death rate for children born in 2006 with a reportable birth defect is 33.0 per 1,000. This compares to an infant death rate of 7.4 per 1,000 for all resident infants born in Michigan during 2006. The relative risk of infant mortality among children with a birth defect was 6.6 in 2006. Both rates were lower in 2006 than in 2005, specifically 36.9 for children with birth defects and 8.5 for all children in 2005. (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 2005 was 8.5 per 1,000. Children born during 2005 with a birth defect had a cumulative mortality rate of 36.9 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 15 years, the experience of children born in 1992 indicates death rates of 68.3 per 1,000 for children with birth defects and 13.5 per 1,000 for children generally. The significantly higher mortality rate for children with birth defects underscores the seriousness of these conditions. (See Table 7-A.)

➤ Birth Defects By Diagnostic Code Groups

The most common diagnostic category reported in 2006 involves anomalies of the heart and circulatory system. Conditions affecting the musculoskeletal system are the next most commonly reported and anomalies of the genital and urinary systems are third. (See Table 8.) With regard to mortality, the number of deaths was highest in 2006 for children with heart and circulatory anomalies, followed by deaths to children with respiratory anomalies, with central nervous system anomaly associated deaths third highest. Similarly, infant mortality rates are highest for the chromosomal anomalies, central nervous system anomalies and then respiratory anomalies, based upon mortality among the 2001-2006 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:

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.

Table 1
Michigan Birth Defect Cases and Prevalence Rates
Michigan Resident Children Born in Michigan
All Cases Reported and Processed by June 30, 2009
Live Births during 1992 through 2006

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	1,984,914	141,349	712.1	159,128	801.7
1992	142,890	9,406	658.3	10,531	737.0
1993	139,145	9,523	684.4	10,389	746.6
1994	136,733	9,397	687.3	10,251	749.7
1995	133,302	8,125	609.5	9,142	685.8
1996	132,086	8,163	618.0	9,063	686.1
1997	132,381	8,148	615.5	9,096	687.1
1998	132,308	8,151	616.1	9,405	710.8
1999	132,215	8,960	677.7	10,350	782.8
2000	134,710	10,085	748.6	11,523	855.4
2001	131,836	10,455	793.0	12,039	913.2
2002	128,068	10,166	793.8	11,458	894.7
2003	129,475	9,702	749.3	10,899	841.8
2004	128,279	9,674	754.1	11,134	868.0
2005	126,126	10,789	855.4	12,118	960.8
2006	125,360	10,605	846.0	11,730	935.7

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. **Rates** are per 10,000 Michigan born 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 June 30, 2009

Last Updated on September 29, 2009

Table 2
Birth Defects Cases by Time to Diagnosis and Birth Year
Michigan Resident Cases, 1992 - 2006

Time to Diagnosis	All Cases	Under 1 Year	Between 1 & 2 Years
All Cases	164,566	144,948	19,618
1992	10,851	9,607	1,244
1993	10,768	9,788	980
1994	10,575	9,614	961
1995	9,477	8,361	1,116
1996	9,331	8,361	970
1997	9,405	8,333	1,072
1998	9,797	8,395	1,402
1999	10,746	9,216	1,530
2000	11,887	10,311	1,576
2001	12,467	10,736	1,731
2002	11,827	10,396	1,431
2003	11,560	10,231	1,329
2004	11,462	9,841	1,621
2005	12,419	10,964	1,455
2006	11,994	10,794	1,200 ¹

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.

¹Provisional.

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through June 30, 2009

Last Updated on September 29, 2009

Table 3
Birth Defects Cases by Leading Diagnostic Groups and by Birth Year Interval
Michigan Resident Children 1994 through 2006
Three Year Moving Total Prevalence

Diagnostic Code Group	Birth Year Interval									
	1995 to 1997	1996 to 1998	1997 to 1999	1998 to 2000	1999 to 2001	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
Heart & Circulatory System	6,815	6,866	6,924	7,070	7,383	7,651	7,840	7,997	8,165	8,346
Congenital Anomalies	6,060	6,127	6,123	6,188	6,480	6,776	7,030	7,270	7,485	7,656
Other Conditions	1,260	1,322	1,510	1,622	1,550	1,430	1,330	1,228	1,166	1,199
Musculoskeletal System	4,881	4,909	5,132	5,593	6,194	6,646	6,671	6,372	6,323	6,467
Congenital Anomalies	4,871	4,899	5,124	5,588	6,187	6,639	6,660	6,363	6,316	6,464
Other Conditions	13	13	11	7	9	8	13	11	9	3
Genital & Urinary Systems	4,381	4,364	4,683	5,254	5,688	5,874	5,656	5,623	5,689	5,701
Congenital Anomalies	4,332	4,314	4,632	5,203	5,639	5,825	5,608	5,575	5,644	5,657
Other Conditions	141	149	149	154	152	149	143	147	138	125
Gastrointestinal System	4,448	4,432	4,411	4,528	4,762	4,793	4,619	4,324	4,226	4,225
Congenital Anomalies	2,015	2,076	2,116	2,221	2,333	2,367	2,258	2,122	2,022	2,117
Other Conditions	2,671	2,604	2,548	2,583	2,695	2,690	2,605	2,451	2,457	2,377
Eye	2,577	2,638	2,840	3,004	3,127	3,077	3,012	2,976	2,970	2,879
Congenital Anomalies	763	827	947	1,060	1,106	1,137	1,140	1,122	1,090	995
Other Conditions	1,929	1,932	2,036	2,110	2,197	2,131	2,075	2,047	2,055	2,024
Central Nervous System	1,892	1,871	2,022	2,119	2,262	2,280	2,267	2,258	2,248	2,234
Congenital Anomalies	1,168	1,143	1,253	1,337	1,463	1,525	1,531	1,557	1,563	1,584
Other Conditions	975	972	1,037	1,074	1,109	1,069	1,018	982	971	956
Maternal Exposures	1,172	1,063	974	1,002	1,050	1,018	845	694	677	674
Integument Anomalies	994	912	874	862	913	913	903	1,039	1,303	1,921
Respiratory System Anomalies	947	993	1,112	1,322	1,572	1,760	1,978	2,041	2,162	2,389
Other Reportable Conditions	3,663	3,710	4,134	4,799	5,741	6,382	6,526	6,142	5,994	5,544
One or More Reportable Conditions	24,436	24,462	25,259	27,196	29,500	30,706	30,323	29,542	30,165	31,068

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 June 30, 2009

Last Updated on September 29, 2009

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 June 30, 2009
Live Births during 1992 through 2006

Time to Death	Birth Year															
	All Deaths	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	7,237	642	594	558	490	452	497	472	482	503	459	435	477	428	398	350
Under 1 Year	6,015	472	445	436	373	355	399	391	391	415	398	398	436	379	377	350
1 to 2 Years	428	45	43	33	29	25	24	24	38	31	34	19	26	36	21	---
2 to 3 Years	223	30	21	28	11	19	24	14	19	15	9	8	12	13	---	---
3 to 4 Years	122	18	15	9	10	9	13	7	13	12	6	7	3	---	---	---
4 to 5 Years	92	11	12	11	9	12	9	5	6	8	6	3	---	---	---	---
5 to 6 Years	73	11	3	2	9	10	4	8	7	13	6	---	---	---	---	---
6 to 7 Years	72	10	10	5	9	7	7	12	3	9	---	---	---	---	---	---
7 to 8 Years	58	5	9	7	13	4	9	6	5	---	---	---	---	---	---	---
8 to 9 Years	48	7	10	9	7	4	6	5	---	---	---	---	---	---	---	---
9 to 10 Years	33	7	3	7	8	6	2	---	---	---	---	---	---	---	---	---
10 to 11 Year	21	5	6	3	6	1	---	---	---	---	---	---	---	---	---	---
11 to 12 year	22	5	7	4	6	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	16	7	5	4	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	7	2	5	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	7	7	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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 June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

Table 4-B
Deaths Among Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by June 30, 2009
Live Births during 1992 through 2006

Time to Death	Birth Year															
	All Deaths	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	20,137	1,966	1,709	1,547	1,430	1,365	1,394	1,314	1,286	1,342	1,263	1,185	1,230	1,114	1,068	924
Under 1 Year	16,855	1,495	1,291	1,203	1,109	1,078	1,104	1,106	1,079	1,161	1,091	1,065	1,116	1,014	1,019	924
1 to 2 Years	932	92	87	77	66	63	66	57	74	57	68	47	58	71	49	---
2 to 3 Years	568	77	51	55	49	53	60	32	37	29	32	30	34	29	---	---
3 to 4 Years	404	58	43	30	42	34	36	26	31	28	24	30	22	---	---	---
4 to 5 Years	272	31	30	31	25	26	28	19	21	22	26	13	---	---	---	---
5 to 6 Years	249	31	36	20	22	31	20	20	19	28	22	---	---	---	---	---
6 to 7 Years	197	30	15	23	24	25	25	28	10	17	---	---	---	---	---	---
7 to 8 Years	146	21	28	16	20	14	20	12	15	---	---	---	---	---	---	---
8 to 9 Years	130	19	29	20	14	12	22	14	---	---	---	---	---	---	---	---
9 to 10 Years	107	20	18	16	25	15	13	---	---	---	---	---	---	---	---	---
10 to 11 Year	91	15	22	23	17	14	---	---	---	---	---	---	---	---	---	---
11 to 12 year	60	13	18	12	17	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	68	25	22	21	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	37	18	19	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	21	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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 June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

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 June 30, 2009
Live Births during 1992 through 2006

Time to Death	Birth Year															
	Mortality Rate	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	51.2	68.3	62.4	59.4	60.3	55.4	61.0	57.9	53.8	49.9	43.9	42.8	49.2	44.2	36.9	33.0
Under 1 Year	42.6	50.2	46.7	46.4	45.9	43.5	49.0	48.0	43.6	41.2	38.1	39.2	44.9	39.2	34.9	33.0
1 to 2 Years	3.0	4.8	4.5	3.5	3.6	3.1	2.9	2.9	4.2	3.1	3.3	1.9	2.7	3.7	1.9	---
2 to 3 Years	1.6	3.2	2.2	3.0	1.4	2.3	2.9	1.7	2.1	1.5	0.9	0.8	1.2	1.3	---	---
3 to 4 Years	0.9	1.9	1.6	1.0	1.2	1.1	1.6	0.9	1.5	1.2	0.6	0.7	*	---	---	---
4 to 5 Years	0.7	1.2	1.3	1.2	1.1	1.5	1.1	*	0.7	0.8	0.6	*	---	---	---	---
5 to 6 Years	0.5	1.2	*	*	1.1	1.2	*	1.0	0.8	1.3	0.6	---	---	---	---	---
6 to 7 Years	0.5	1.1	1.1	*	1.1	0.9	0.9	1.5	*	0.9	---	---	---	---	---	---
7 to 8 Years	0.4	*	0.9	0.7	1.6	*	1.1	0.7	*	---	---	---	---	---	---	---
8 to 9 Years	0.3	0.7	1.1	1.0	0.9	*	0.7	*	---	---	---	---	---	---	---	---
9 to 10 Years	0.2	0.7	*	0.7	1.0	0.7	*	---	---	---	---	---	---	---	---	---
10 to 11 Year	0.1	*	0.6	*	0.7	*	---	---	---	---	---	---	---	---	---	---
11 to 12 year	0.2	*	0.7	*	0.7	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	0.1	0.7	*	*	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	0.0	*	*	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	0.0	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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 June 30, 2009
 Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

**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 June 30, 2009
Live Births during 1992 through 2006**

Time to Death	Birth Year															
	Mortality Rate	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	10.1	13.8	12.3	11.3	10.7	10.3	10.5	9.9	9.7	10.0	9.6	9.3	9.5	8.7	8.5	7.4
Under 1 Year	8.5	10.5	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
1 to 2 Years	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.6	0.4	0.5	0.4	0.4	0.6	0.4	---
2 to 3 Years	0.3	0.5	0.4	0.4	0.4	0.4	0.5	0.2	0.3	0.2	0.2	0.2	0.3	0.2	---	---
3 to 4 Years	0.2	0.4	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	---	---	---
4 to 5 Years	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	---	---	---	---
5 to 6 Years	0.1	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	---	---	---	---	---
6 to 7 Years	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	---	---	---	---	---	---
7 to 8 Years	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	---	---	---	---	---	---	---
8 to 9 Years	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	---	---	---	---	---	---	---	---
9 to 10 Years	0.1	0.1	0.1	0.1	0.2	0.1	0.1	---	---	---	---	---	---	---	---	---
10 to 11 Year	0.0	0.1	0.2	0.2	0.1	0.1	---	---	---	---	---	---	---	---	---	---
11 to 12 year	0.0	0.1	0.1	0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	0.0	0.2	0.2	0.2	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	0.0	0.1	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	0.0	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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 June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

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 June 30, 2009
Live Births during 1992 through 2006

Time to Death	Birth Year															
	All Years	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	7,237	642	594	558	490	452	497	472	482	503	459	435	477	428	398	350
Under 1 Year	6,015	472	445	436	373	355	399	391	391	415	398	398	436	379	377	350
1 to 2 Years	6,443	517	488	469	402	380	423	415	429	446	432	417	462	415	398	---
2 to 3 Years	6,666	547	509	497	413	399	447	429	448	461	441	425	474	428	---	---
3 to 4 Years	6,788	565	524	506	423	408	460	436	461	473	447	432	477	---	---	---
4 to 5 Years	6,880	576	536	517	432	420	469	441	467	481	453	435	---	---	---	---
5 to 6 Years	6,953	587	539	519	441	430	473	449	474	494	459	---	---	---	---	---
6 to 7 Years	7,025	597	549	524	450	437	480	461	477	503	---	---	---	---	---	---
7 to 8 Years	7,083	602	558	531	463	441	489	467	482	---	---	---	---	---	---	---
8 to 9 Years	7,131	609	568	540	470	445	495	472	---	---	---	---	---	---	---	---
9 to 10 Years	7,164	616	571	547	478	451	497	---	---	---	---	---	---	---	---	---
10 to 11 Year	7,185	621	577	550	484	452	---	---	---	---	---	---	---	---	---	---
11 to 12 year	7,207	626	584	554	490	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	7,223	633	589	558	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	7,230	635	594	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	7,237	642	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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 June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

Table 6-B
Cumulative Deaths Among Children by Time to Death and Birth Year
Michigan Live Birth Registry
All Cases Reported and Processed by June 30, 2009
Live Births during 1992 through 2006

Time to Death	Birth Year															
	All Years	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	20,137	1,966	1,709	1,547	1,430	1,365	1,394	1,314	1,286	1,342	1,263	1,185	1,230	1,114	1,068	924
Under 1 Year	16,855	1,495	1,291	1,203	1,109	1,078	1,104	1,106	1,079	1,161	1,091	1,065	1,116	1,014	1,019	924
1 to 2 Years	17,787	1,587	1,378	1,280	1,175	1,141	1,170	1,163	1,153	1,218	1,159	1,112	1,174	1,085	1,068	---
2 to 3 Years	18,355	1,664	1,429	1,335	1,224	1,194	1,230	1,195	1,190	1,247	1,191	1,142	1,208	1,114	---	---
3 to 4 Years	18,759	1,722	1,472	1,365	1,266	1,228	1,266	1,221	1,221	1,275	1,215	1,172	1,230	---	---	---
4 to 5 Years	19,031	1,753	1,502	1,396	1,291	1,254	1,294	1,240	1,242	1,297	1,241	1,185	---	---	---	---
5 to 6 Years	19,280	1,784	1,538	1,416	1,313	1,285	1,314	1,260	1,261	1,325	1,263	---	---	---	---	---
6 to 7 Years	19,477	1,814	1,553	1,439	1,337	1,310	1,339	1,288	1,271	1,342	---	---	---	---	---	---
7 to 8 Years	19,623	1,835	1,581	1,455	1,357	1,324	1,359	1,300	1,286	---	---	---	---	---	---	---
8 to 9 Years	19,753	1,854	1,610	1,475	1,371	1,336	1,381	1,314	---	---	---	---	---	---	---	---
9 to 10 Years	19,860	1,874	1,628	1,491	1,396	1,351	1,394	---	---	---	---	---	---	---	---	---
10 to 11 Year	19,951	1,889	1,650	1,514	1,413	1,365	---	---	---	---	---	---	---	---	---	---
11 to 12 year	20,011	1,902	1,668	1,526	1,430	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	20,079	1,927	1,690	1,547	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	20,116	1,945	1,709	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	20,137	1,966	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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 June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

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 June 30, 2009
Live Births during 1992 through 2006

Time to Death	Adjusted Cumulative Rate	Birth Year														
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	56.4	68.3	62.4	59.4	60.3	55.4	61.0	57.9	53.8	49.9	43.9	42.8	49.2	44.2	36.9	33.0
Under 1 Year	42.6	50.2	46.7	46.4	45.9	43.5	49.0	48.0	43.6	41.2	38.1	39.2	44.9	39.2	34.9	33.0
1 to 2 Years	45.8	55.0	51.2	49.9	49.5	46.6	51.9	50.9	47.9	44.2	41.3	41.0	47.6	42.9	36.9	---
2 to 3 Years	47.7	58.2	53.4	52.9	50.8	48.9	54.9	52.6	50.0	45.7	42.2	41.8	48.9	44.2	---	---
3 to 4 Years	48.8	60.1	55.0	53.8	52.1	50.0	56.5	53.5	51.5	46.9	42.8	42.5	49.2	---	---	---
4 to 5 Years	49.7	61.2	56.3	55.0	53.2	51.5	57.6	54.1	52.1	47.7	43.3	42.8	---	---	---	---
5 to 6 Years	50.5	62.4	56.6	55.2	54.3	52.7	58.1	55.1	52.9	49.0	43.9	---	---	---	---	---
6 to 7 Years	51.4	63.5	57.6	55.8	55.4	53.5	58.9	56.6	53.2	49.9	---	---	---	---	---	---
7 to 8 Years	52.2	64.0	58.6	56.5	57.0	54.0	60.0	57.3	53.8	---	---	---	---	---	---	---
8 to 9 Years	53.0	64.7	59.6	57.5	57.8	54.5	60.8	57.9	---	---	---	---	---	---	---	---
9 to 10 Years	53.7	65.5	60.0	58.2	58.8	55.2	61.0	---	---	---	---	---	---	---	---	---
10 to 11 Year	54.1	66.0	60.6	58.5	59.6	55.4	---	---	---	---	---	---	---	---	---	---
11 to 12 year	54.7	66.6	61.3	59.0	60.3	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	55.3	67.3	61.9	59.4	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	55.7	67.5	62.4	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	56.4	68.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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 June 30, 2009
 Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

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 June 30, 2009
Live Births during 1992 through 2006

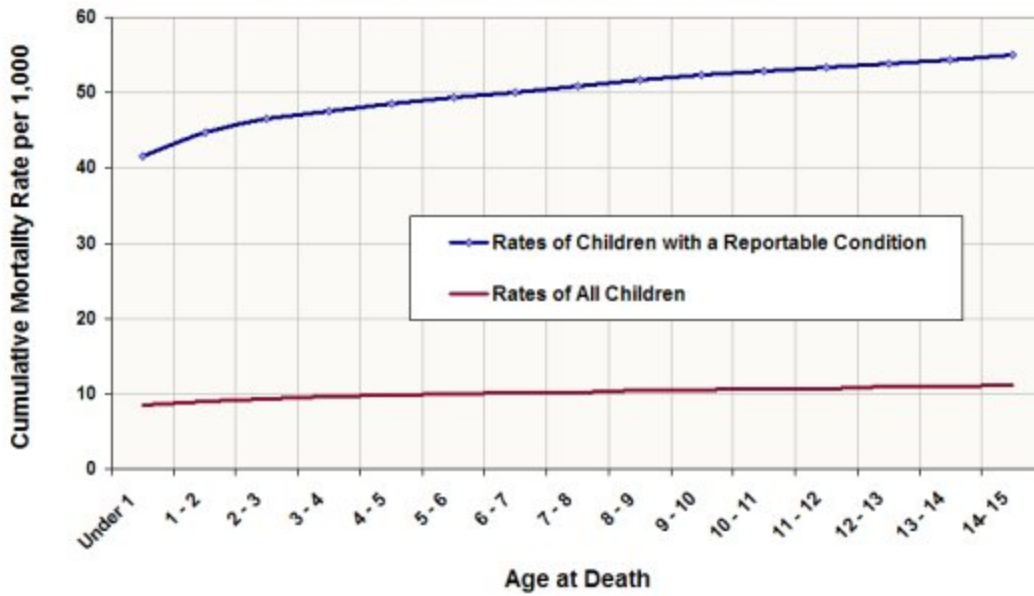
Time to Death	Adjusted Cumulative Rate	Birth Year														
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All Ages	11.2	13.8	12.3	11.3	10.7	10.3	10.5	9.9	9.7	10.0	9.6	9.3	9.5	8.7	8.5	7.4
Under 1 Year	8.5	10.5	9.3	8.8	8.3	8.2	8.3	8.4	8.2	8.6	8.3	8.3	8.6	7.9	8.1	7.4
1 to 2 Years	9.0	11.1	9.9	9.4	8.8	8.6	8.8	8.8	8.7	9.0	8.8	8.7	9.1	8.5	8.5	---
2 to 3 Years	9.3	11.6	10.3	9.8	9.2	9.0	9.3	9.0	9.0	9.3	9.0	8.9	9.3	8.7	---	---
3 to 4 Years	9.6	12.1	10.6	10.0	9.5	9.3	9.6	9.2	9.2	9.5	9.2	9.2	9.5	---	---	---
4 to 5 Years	9.8	12.3	10.8	10.2	9.7	9.5	9.8	9.4	9.4	9.6	9.4	9.3	---	---	---	---
5 to 6 Years	9.9	12.5	11.1	10.4	9.8	9.7	9.9	9.5	9.5	9.8	9.6	---	---	---	---	---
6 to 7 Years	10.1	12.7	11.2	10.5	10.0	9.9	10.1	9.7	9.6	10.0	---	---	---	---	---	---
7 to 8 Years	10.2	12.8	11.4	10.6	10.2	10.0	10.3	9.8	9.7	---	---	---	---	---	---	---
8 to 9 Years	10.4	13.0	11.6	10.8	10.3	10.1	10.4	9.9	---	---	---	---	---	---	---	---
9 to 10 Years	10.5	13.1	11.7	10.9	10.5	10.2	10.5	---	---	---	---	---	---	---	---	---
10 to 11 Year	10.6	13.2	11.9	11.1	10.6	10.3	---	---	---	---	---	---	---	---	---	---
11 to 12 year	10.7	13.3	12.0	11.2	10.7	---	---	---	---	---	---	---	---	---	---	---
12 to 13 year	10.9	13.5	12.1	11.3	---	---	---	---	---	---	---	---	---	---	---	---
13 to 14 year	11.0	13.6	12.3	---	---	---	---	---	---	---	---	---	---	---	---	---
14 to 15 year	11.2	13.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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

Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

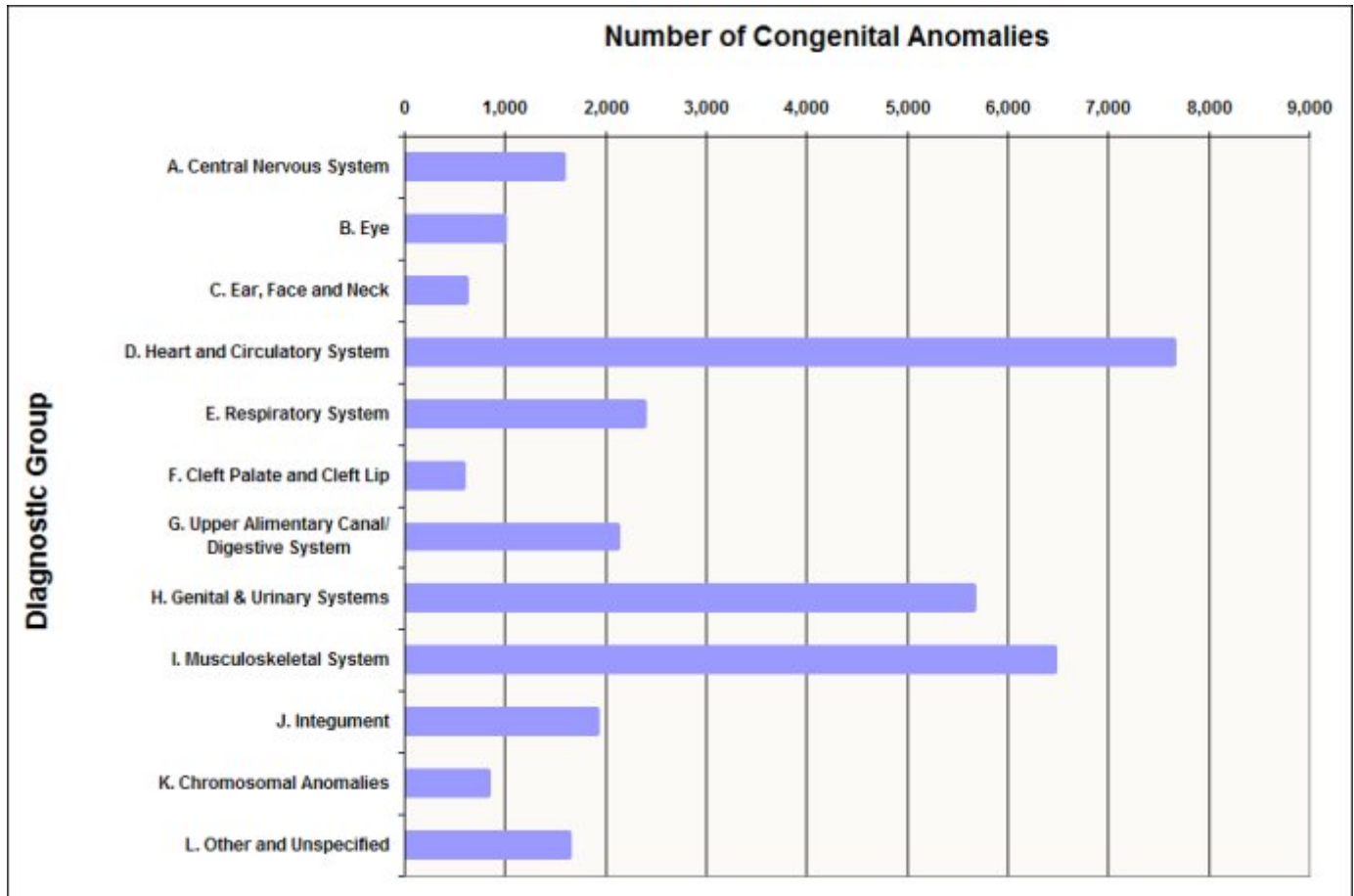
**Figure 1. Cumulative Mortality Rates,
Michigan Children with a Reportable Condition versus All Children
Michigan Births between 1992 and 2006**



Source: Michigan Birth Defects Registry, Division for Vital Records & Health Statistics, Michigan Department of Community Health Reports Processed through June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

Figure 2-A
Total Congenital Anomalies by Summary Diagnostic Code Group, 2004-2006 ,
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.

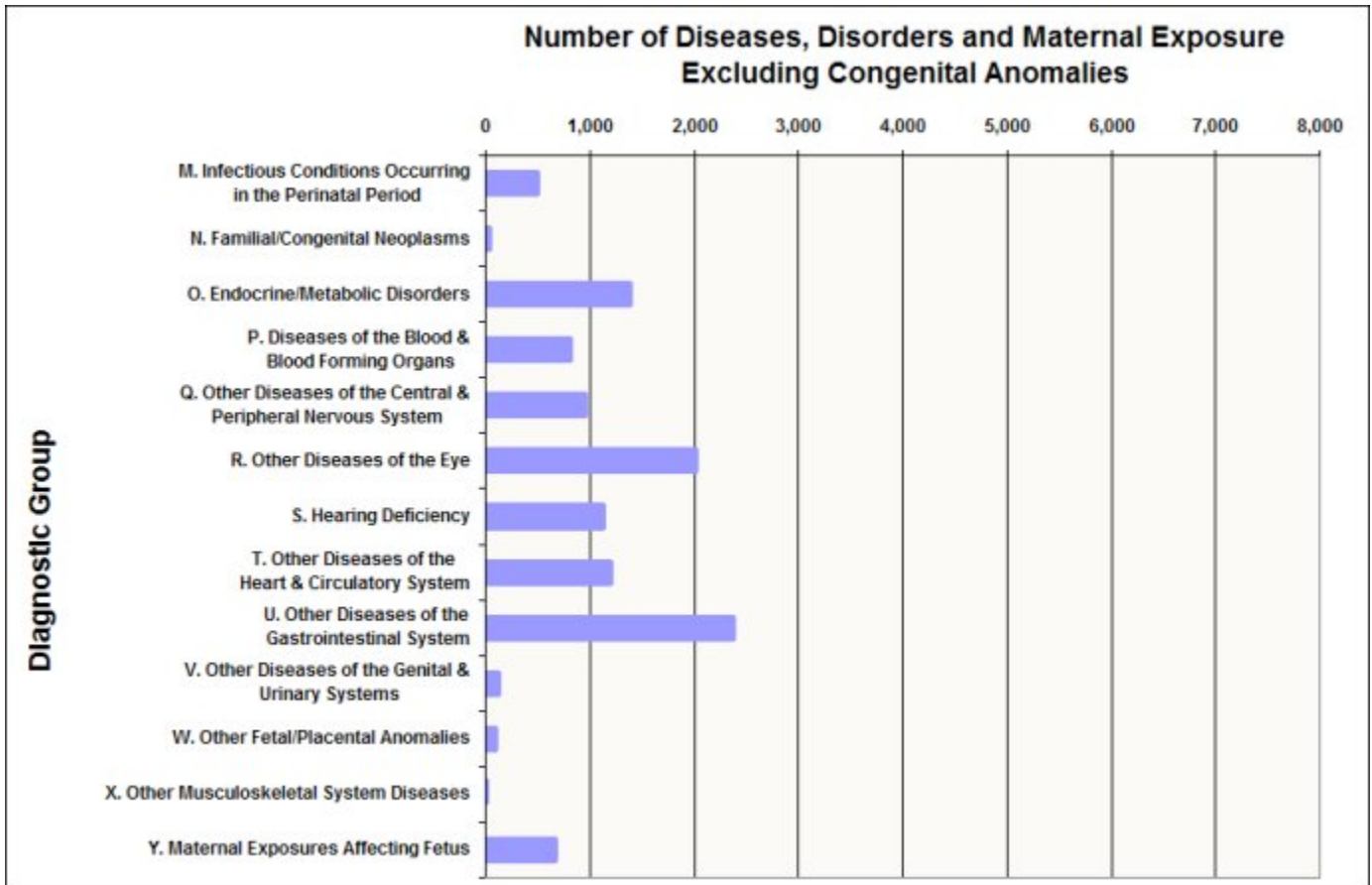
Conditions are reportable if identified within the first two years of a child's life. The prevalence frequencies in this table represent cases diagnosed within the first year of life.

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 June 30, 2009

Last Updated on September 29, 2009

Figure 2-B
Total Diseases, Disorders and Maternal Exposures by
Summary Diagnostic Code Group, 2003-2005,
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 June 30, 2009

Last Updated on September 29, 2009

Table 8
Birth Defects by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
A Congenital Anomalies of the Central Nervous System	6,942	470	413	3,607	492	514	519	498	540	525	519
B Congenital Anomalies of the Eye	4,796	296	266	2,510	375	376	386	378	358	354	283
C Congenital Anomalies of the Ear, Face and Neck	3,263	275	220	1,518	220	232	240	212	195	251	168
D Congenital Anomalies of the Heart and Circulatory System	33,166	1,897	1,919	16,809	2,123	2,278	2,375	2,377	2,518	2,590	2,548
E Congenital Anomalies of the Respiratory System	7,939	457	314	4,906	539	610	611	757	673	732	984
F Cleft Palate and Cleft Lip	3,150	244	210	1,423	199	224	195	218	187	195	205
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	10,840	748	650	5,148	773	823	771	664	687	671	759
H Congenital Anomalies of the Genital and Urinary Systems	25,442	1,522	1,470	13,323	2,058	1,888	1,879	1,841	1,855	1,948	1,854
I Congenital Anomalies of the Musculoskeletal System	29,719	2,163	1,628	15,229	2,105	2,255	2,279	2,126	1,958	2,232	2,274
J Congenital Anomalies of the Integument	5,939	425	339	3,128	304	308	301	294	444	565	912
K Chromosomal Anomalies	4,050	306	229	1,946	275	279	278	279	280	283	272
L Other and Unspecified Congenital Anomalies	6,872	408	221	4,360	622	757	643	703	629	594	412

Table 8
Birth Defects by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
M Infectious Conditions Occurring in the Perinatal Period	2,677	210	131	1,409	218	224	243	221	162	158	183
N Familial/Congenital Neoplasms	141	3	5	91	15	12	13	13	9	16	13
O Endocrine/Metabolic Disorders	6,072	291	291	3,372	529	504	506	445	389	501	498
P Diseases of the Blood & Blood Forming Organs	3,509	200	230	1,814	246	227	257	263	242	315	264
Q Other Diseases of the Central and Peripheral Nervous System	5,043	350	320	2,340	366	352	351	315	316	340	300
R Other Diseases of the Eye	9,760	416	610	4,824	725	700	706	669	672	714	638
S Hearing Deficiency	4,376	147	115	3,162	390	563	620	459	378	396	356
T Other Diseases of the Heart & Circulatory System	7,399	604	456	3,054	525	446	459	425	344	397	458
U Other Diseases of the Gastrointestinal System	13,255	1,020	902	5,883	901	947	842	816	793	848	736
V Other Diseases of the Genital and Urinary Systems	676	33	41	324	56	47	46	50	51	37	37
W Other Fetal/Placental Anomalies	105	2	-	98	-	-	2	2	2	90	2
X Other Musculoskeletal System Diseases	58	9	1	18	2	3	3	7	1	1	1
Y Maternal Exposures Affecting Fetus	5,124	345	433	1,891	372	372	274	199	221	257	196
One or More Reportable Diagnosis	141,349	9,406	8,125	71,476	10,085	10,455	10,166	9,702	9,674	10,789	10,605

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 June 30, 2009

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
A Congenital Anomalies of the Central Nervous System	6,942	470	413	3,607	492	514	519	498	540	525	519
A01 Anencephalus	199	12	13	106	21	7	15	17	20	12	14
A02 Spina Bifida w/o Anencephaly	859	57	68	396	49	71	43	52	63	59	59
A03 Hydrocephalus w/o Spina Bifida	1,972	168	125	917	137	152	133	120	131	123	121
A04 Encephalocele	216	22	17	99	16	11	13	13	13	21	12
A05 Microcephalus	1,557	92	92	875	122	117	140	119	126	128	123
A99. All Other CNS Anomalies	3,393	204	183	1,881	227	252	265	278	293	289	277
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
B Congenital Anomalies of the Eye	4,796	296	266	2,510	375	376	386	378	358	354	283
B01 Anophthalmos/Microphthalmos	357	20	24	183	21	31	33	28	25	25	20
B02 Congenital Cataract	459	23	33	228	38	33	37	35	30	36	19
B03 Aniridia	45	1	2	26	4	3	2	5	6	5	1
B99. All Other Congenital Anomalies of the Eye	4,296	268	226	2,284	345	342	345	342	325	320	265
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
C Congenital Anomalies of the Ear, Face and Neck	3,263	275	220	1,518	220	232	240	212	195	251	168
C01 Anotia/Microtia	242	15	18	123	21	20	19	22	18	12	11
C99. All Other Congenital Anomalies of the Ear, Face and Neck	3,190	268	214	1,487	214	229	231	210	188	248	167

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
D Congenital Anomalies of the Heart and Circulatory System	33,166	1,897	1,919	16,809	2,123	2,278	2,375	2,377	2,518	2,590	2,548
D01 Common Truncus	249	17	9	116	11	21	12	25	15	17	15
D02 Transposition of Great Vessels	954	69	52	457	68	58	64	56	59	82	70
D03 Tetralogy of Fallot	1,083	74	66	483	74	68	68	81	56	66	70
D04 Ventricular Septal Defect	8,193	580	492	3,819	539	531	556	539	543	585	526
D05 Atrial Septal Defect	12,286	437	645	7,149	814	861	969	982	1,105	1,233	1,185
D06 Endocardial Cushion Defect	1,002	57	57	500	63	72	71	86	71	66	71
D07 Pulmonary Valve Atresia and Stenosis	2,252	141	117	1,063	143	163	132	168	126	172	159
D08 Tricuspid Valve Atresia and Stenosis	266	17	13	135	17	28	26	22	10	22	10
D09 Ebstein's Anomaly	261	14	5	167	35	46	37	18	10	12	9
D10 Aortic Valve Stenosis	481	38	26	235	42	28	31	34	36	34	30
D11 Hypoplastic Left Heart Syndrome	767	54	49	380	46	66	56	55	52	60	45
D12 Patent Ductus Arteriosus	10,179	639	650	4,964	557	654	657	745	739	812	800
D13 Coarctation of Aorta	1,116	67	64	554	81	66	83	84	75	76	89
D14 Pulmonary Artery Anomalies	3,568	151	176	1,929	252	294	296	277	231	301	278
D99. All Other Congenital Anomalies of the Heart and Circulatory System	14,591	873	808	7,239	893	925	1,027	1,050	1,191	1,023	1,130
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
E Congenital Anomalies of the Respiratory System	7,939	457	314	4,906	539	610	611	757	673	732	984
E01 Lung Agenesis/Hypoplasia	1,275	78	62	678	86	75	85	152	113	95	72
E02 Choanal Atresia	313	26	16	151	20	28	29	17	20	22	15
E99. All Other Congenital Anomalies of the Respiratory System	6,749	383	256	4,297	455	533	537	623	570	655	924
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
F Cleft Palate and Cleft Lip	3,150	244	210	1,423	199	224	195	218	187	195	205
F01 Cleft Palate	1,138	80	87	498	71	83	64	69	61	72	78
F02 Cleft Lip w and w/o Cleft Palate	2,012	164	123	925	128	141	131	149	126	123	127

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	10,840	748	650	5,148	773	823	771	664	687	671	759
G01 Esophageal Atresia/ Tracheoesophageal Fistula	730	41	52	291	34	46	44	45	46	42	34
G02 Rectal and Large Intestinal Atresia/Stenosis	948	75	66	447	74	62	65	59	62	59	66
G03 Pyloric Stenosis	3,662	299	200	1,655	251	305	260	207	203	195	234
G04 Hirshsprung's Disease (congenital megacolon)	627	46	30	287	43	50	42	41	41	35	35
G05 Biliary Atresia	250	17	21	99	16	15	10	16	18	12	12
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	5,376	319	328	2,716	409	390	401	352	373	376	415
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
H Congenital Anomalies of the Genital and Urinary Systems	25,442	1,522	1,470	13,323	2,058	1,888	1,879	1,841	1,855	1,948	1,854
H01 Renal Agenesis/Hypoplasia	1,077	66	68	506	99	71	83	77	63	67	46
H02 Bladder Exstrophy	80	6	7	35	3	10	6	5	2	5	4
H03 Obstructive Genitourinary Defects	3,761	222	221	2,046	262	284	293	301	298	321	287
H04 Hypospadias & Epispadias	4,124	2	70	2,761	452	392	404	389	373	459	292
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	22,123	1,472	1,416	11,261	1,711	1,593	1,567	1,556	1,592	1,619	1,623
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
I Congenital Anomalies of the Musculoskeletal System	29,719	2,163	1,628	15,229	2,105	2,255	2,279	2,126	1,958	2,232	2,274
I01 Upper Limb Reduction Deformities	526	65	36	210	40	34	34	33	25	25	19
I02 Lower Limb Reduction Deformities	334	26	26	159	22	26	25	22	19	22	23
I03 Gastroschisis/Omphalocele	1,069	60	72	510	63	75	52	72	78	80	90
I04 Congenital Hip Dislocation	2,745	261	192	1,156	198	207	195	160	136	115	145
I05 Diaphragmatic Hernia	633	51	43	297	39	43	33	48	47	37	50
I99. All Other Congenital Anomalies of the Musculoskeletal System	26,009	1,805	1,363	13,705	1,844	1,995	2,074	1,914	1,765	2,054	2,059

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
J Congenital Anomalies of the Integument	5,939	425	339	3,128	304	308	301	294	444	565	912
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
K Chromosomal Anomalies	4,050	306	229	1,946	275	279	278	279	280	283	272
K01 Trisomy 13	202	22	12	82	15	9	9	13	12	17	7
K02 Down Syndrome	2,301	164	130	1,133	139	169	172	141	172	170	170
K03 Trisomy 18	265	20	18	122	14	18	18	28	15	15	14
K99. All Other Chromosomal Anomalies	1,462	105	76	719	127	101	99	118	90	100	84
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
L Other and Unspecified Congenital Anomalies	6,872	408	221	4,360	622	757	643	703	629	594	412

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
M Infectious Conditions Occurring in the Perinatal Period	2,677	210	131	1,409	218	224	243	221	162	158	183
M01 Syphilis	707	159	48	136	24	33	19	31	5	14	10
M02 Other Infections	1,976	55	83	1,273	194	191	224	190	157	144	173
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
N Familial/Congenital Neoplasms	141	3	5	91	15	12	13	13	9	16	13
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
O Endocrine/Metabolic Disorders	6,072	291	291	3,372	529	504	506	445	389	501	498
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
P Diseases of the Blood & Blood Forming Organs	3,509	200	230	1,814	246	227	257	263	242	315	264
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
Q Other Diseases of the Central and Peripheral Nervous System	5,043	350	320	2,340	366	352	351	315	316	340	300
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
R Other Diseases of the Eye	9,760	416	610	4,824	725	700	706	669	672	714	638
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
S Hearing Deficiency	4,376	147	115	3,162	390	563	620	459	378	396	356
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
T Other Diseases of the Heart & Circulatory System	7,399	604	456	3,054	525	446	459	425	344	397	458

Table 9
Birth Defects by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
U Other Diseases of the Gastrointestinal System	13,255	1,020	902	5,883	901	947	842	816	793	848	736
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
V Other Diseases of the Genital and Urinary Systems	676	33	41	324	56	47	46	50	51	37	37
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
W Other Fetal/Placental Anomalies	105	2	-	98	-	-	2	2	2	90	2
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
X Other Musculoskeletal System Diseases	58	9	1	18	2	3	3	7	1	1	1
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
Y Maternal Exposures Affecting Fetus	5,124	345	433	1,891	372	372	274	199	221	257	196
Y01 Fetal Alcohol Syndrome	410	35	43	129	26	23	19	13	14	17	17
Y99. Other Maternal Exposures Affecting the Fetus	4,820	320	402	1,788	350	358	260	188	208	242	182
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
One or More Reportable Diagnosis	141,349	9,406	8,125	71,476	10,085	10,455	10,166	9,702	9,674	10,789	10,605

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 June 30, 2009

Last Updated on September 29, 2009

Table 10
Birth Defect Prevalence Rates by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
A Congenital Anomalies of the Central Nervous System	35.0	32.9	31.0	39.9	36.5	39.0	40.5	38.5	42.1	41.6	41.4
B Congenital Anomalies of the Eye	24.2	20.7	20.0	27.8	27.8	28.5	30.1	29.2	27.9	28.1	22.6
C Congenital Anomalies of the Ear, Face and Neck	16.4	19.2	16.5	16.8	16.3	17.6	18.7	16.4	15.2	19.9	13.4
D Congenital Anomalies of the Heart and Circulatory System	167.1	132.8	144.0	186.0	157.6	172.8	185.4	183.6	196.3	205.4	203.3
E Congenital Anomalies of the Respiratory System	40.0	32.0	23.6	54.3	40.0	46.3	47.7	58.5	52.5	58.0	78.5
F Cleft Palate and Cleft Lip	15.9	17.1	15.8	15.7	14.8	17.0	15.2	16.8	14.6	15.5	16.4
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	54.6	52.3	48.8	57.0	57.4	62.4	60.2	51.3	53.6	53.2	60.5
H Congenital Anomalies of the Genital and Urinary Systems	128.2	106.5	110.3	147.4	152.8	143.2	146.7	142.2	144.6	154.4	147.9
I Congenital Anomalies of the Musculoskeletal System	149.7	151.4	122.1	168.5	156.3	171.0	178.0	164.2	152.6	177.0	181.4
J Congenital Anomalies of the Integument	29.9	29.7	25.4	34.6	22.6	23.4	23.5	22.7	34.6	44.8	72.8
K Chromosomal Anomalies	20.4	21.4	17.2	21.5	20.4	21.2	21.7	21.5	21.8	22.4	21.7
L Other and Unspecified Congenital Anomalies	34.6	28.6	16.6	48.2	46.2	57.4	50.2	54.3	49.0	47.1	32.9

Table 10
Birth Defect Prevalence Rates by Summary Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
M Infectious Conditions Occurring in the Perinatal Period	13.5	14.7	9.8	15.6	16.2	17.0	19.0	17.1	12.6	12.5	14.6
N Familial/Congenital Neoplasms	0.7	*	*	1.0	1.1	0.9	1.0	1.0	0.7	1.3	1.0
O Endocrine/Metabolic Disorders	30.6	20.4	21.8	37.3	39.3	38.2	39.5	34.4	30.3	39.7	39.7
P Diseases of the Blood & Blood Forming Organs	17.7	14.0	17.3	20.1	18.3	17.2	20.1	20.3	18.9	25.0	21.1
Q Other Diseases of the Central and Peripheral Nervous System	25.4	24.5	24.0	25.9	27.2	26.7	27.4	24.3	24.6	27.0	23.9
R Other Diseases of the Eye	49.2	29.1	45.8	53.4	53.8	53.1	55.1	51.7	52.4	56.6	50.9
S Hearing Deficiency	22.0	10.3	8.6	35.0	29.0	42.7	48.4	35.5	29.5	31.4	28.4
T Other Diseases of the Heart & Circulatory System	37.3	42.3	34.2	33.8	39.0	33.8	35.8	32.8	26.8	31.5	36.5
U Other Diseases of the Gastrointestinal System	66.8	71.4	67.7	65.1	66.9	71.8	65.7	63.0	61.8	67.2	58.7
V Other Diseases of the Genital and Urinary Systems	3.4	2.3	3.1	3.6	4.2	3.6	3.6	3.9	4.0	2.9	3.0
W Other Fetal/Placental Anomalies	0.5	*	-	1.1	-	-	*	*	*	7.1	*
X Other Musculoskeletal System Diseases	0.3	0.6	*	0.2	*	*	*	0.5	*	*	*
Y Maternal Exposures Affecting Fetus	25.8	24.1	32.5	20.9	27.6	28.2	21.4	15.4	17.2	20.4	15.6
One or More Reportable Diagnosis	712.1	658.3	609.5	790.8	748.6	793.0	793.8	749.3	754.1	855.4	846.0

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 June 30, 2009

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
A Congenital Anomalies of the Central Nervous System	35.0	32.9	31.0	39.9	36.5	39.0	40.5	38.5	42.1	41.6	41.4
A01 Anencephalus	1.0	0.8	1.0	1.2	1.6	0.5	1.2	1.3	1.6	1.0	1.1
A02 Spina Bifida w/o Anencephaly	4.3	4.0	5.1	4.4	3.6	5.4	3.4	4.0	4.9	4.7	4.7
A03 Hydrocephalus w/o Spina Bifida	9.9	11.8	9.4	10.1	10.2	11.5	10.4	9.3	10.2	9.8	9.7
A04 Encephalocele	1.1	1.5	1.3	1.1	1.2	0.8	1.0	1.0	1.0	1.7	1.0
A05 Microcephalus	7.8	6.4	6.9	9.7	9.1	8.9	10.9	9.2	9.8	10.1	9.8
A99. All Other CNS Anomalies	17.1	14.3	13.7	20.8	16.9	19.1	20.7	21.5	22.8	22.9	22.1
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
B Congenital Anomalies of the Eye	24.2	20.7	20.0	27.8	27.8	28.5	30.1	29.2	27.9	28.1	22.6
B01 Anophthalmos/Microphthalmos	1.8	1.4	1.8	2.0	1.6	2.4	2.6	2.2	1.9	2.0	1.6
B02 Congenital Cataract	2.3	1.6	2.5	2.5	2.8	2.5	2.9	2.7	2.3	2.9	1.5
B03 Aniridia	0.2	*	*	0.3	*	*	*	*	0.5	*	*
B99. All Other Congenital Anomalies of the Eye	21.6	18.8	17.0	25.3	25.6	25.9	26.9	26.4	25.3	25.4	21.1
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
C Congenital Anomalies of the Ear, Face and Neck	16.4	19.2	16.5	16.8	16.3	17.6	18.7	16.4	15.2	19.9	13.4
C01 Anotia/Microtia	1.2	1.0	1.4	1.4	1.6	1.5	1.5	1.7	1.4	1.0	0.9
C99. All Other Congenital Anomalies of the Ear, Face and Neck	16.1	18.8	16.1	16.5	15.9	17.4	18.0	16.2	14.7	19.7	13.3

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
D Congenital Anomalies of the Heart and Circulatory System	167.1	132.8	144.0	186.0	157.6	172.8	185.4	183.6	196.3	205.4	203.3
D01 Common Truncus	1.3	1.2	0.7	1.3	0.8	1.6	0.9	1.9	1.2	1.3	1.2
D02 Transposition of Great Vessels	4.8	4.8	3.9	5.1	5.0	4.4	5.0	4.3	4.6	6.5	5.6
D03 Tetralogy of Fallot	5.5	5.2	5.0	5.3	5.5	5.2	5.3	6.3	4.4	5.2	5.6
D04 Ventricular Septal Defect	41.3	40.6	36.9	42.3	40.0	40.3	43.4	41.6	42.3	46.4	42.0
D05 Atrial Septal Defect	61.9	30.6	48.4	79.1	60.4	65.3	75.7	75.8	86.1	97.8	94.5
D06 Endocardial Cushion Defect	5.0	4.0	4.3	5.5	4.7	5.5	5.5	6.6	5.5	5.2	5.7
D07 Pulmonary Valve Atresia and Stenosis	11.3	9.9	8.8	11.8	10.6	12.4	10.3	13.0	9.8	13.6	12.7
D08 Tricuspid Valve Atresia and Stenosis	1.3	1.2	1.0	1.5	1.3	2.1	2.0	1.7	0.8	1.7	0.8
D09 Ebstein's Anomaly	1.3	1.0	*	1.8	2.6	3.5	2.9	1.4	0.8	1.0	0.7
D10 Aortic Valve Stenosis	2.4	2.7	2.0	2.6	3.1	2.1	2.4	2.6	2.8	2.7	2.4
D11 Hypoplastic Left Heart Syndrome	3.9	3.8	3.7	4.2	3.4	5.0	4.4	4.2	4.1	4.8	3.6
D12 Patent Ductus Arteriosus	51.3	44.7	48.8	54.9	41.3	49.6	51.3	57.5	57.6	64.4	63.8
D13 Coarctation of Aorta	5.6	4.7	4.8	6.1	6.0	5.0	6.5	6.5	5.8	6.0	7.1
D14 Pulmonary Artery Anomalies	18.0	10.6	13.2	21.3	18.7	22.3	23.1	21.4	18.0	23.9	22.2
D99. All Other Congenital Anomalies of the Heart and Circulatory System	73.5	61.1	60.6	80.1	66.3	70.2	80.2	81.1	92.8	81.1	90.1
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
E Congenital Anomalies of the Respiratory System	40.0	32.0	23.6	54.3	40.0	46.3	47.7	58.5	52.5	58.0	78.5
E01 Lung Agenesis/Hypoplasia	6.4	5.5	4.7	7.5	6.4	5.7	6.6	11.7	8.8	7.5	5.7
E02 Choanal Atresia	1.6	1.8	1.2	1.7	1.5	2.1	2.3	1.3	1.6	1.7	1.2
E99. All Other Congenital Anomalies of the Respiratory System	34.0	26.8	19.2	47.5	33.8	40.4	41.9	48.1	44.4	51.9	73.7
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
F Cleft Palate and Cleft Lip	15.9	17.1	15.8	15.7	14.8	17.0	15.2	16.8	14.6	15.5	16.4
F01 Cleft Palate	5.7	5.6	6.5	5.5	5.3	6.3	5.0	5.3	4.8	5.7	6.2
F02 Cleft Lip w and w/o Cleft Palate	10.1	11.5	9.2	10.2	9.5	10.7	10.2	11.5	9.8	9.8	10.1

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	54.6	52.3	48.8	57.0	57.4	62.4	60.2	51.3	53.6	53.2	60.5
G01 Esophageal Atresia/ Tracheoesophageal Fistula	3.7	2.9	3.9	3.2	2.5	3.5	3.4	3.5	3.6	3.3	2.7
G02 Rectal and Large Intestinal Atresia/Stenosis	4.8	5.2	5.0	4.9	5.5	4.7	5.1	4.6	4.8	4.7	5.3
G03 Pyloric Stenosis	18.4	20.9	15.0	18.3	18.6	23.1	20.3	16.0	15.8	15.5	18.7
G04 Hirshsprung's Disease (congenital megacolon)	3.2	3.2	2.3	3.2	3.2	3.8	3.3	3.2	3.2	2.8	2.8
G05 Biliary Atresia	1.3	1.2	1.6	1.1	1.2	1.1	0.8	1.2	1.4	1.0	1.0
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	27.1	22.3	24.6	30.0	30.4	29.6	31.3	27.2	29.1	29.8	33.1
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
H Congenital Anomalies of the Genital and Urinary Systems	128.2	106.5	110.3	147.4	152.8	143.2	146.7	142.2	144.6	154.4	147.9
H01 Renal Agenesis/Hypoplasia	5.4	4.6	5.1	5.6	7.3	5.4	6.5	5.9	4.9	5.3	3.7
H02 Bladder Exstrophy	0.4	0.4	0.5	0.4	*	0.8	0.5	*	*	*	*
H03 Obstructive Genitourinary Defects	18.9	15.5	16.6	22.6	19.4	21.5	22.9	23.2	23.2	25.5	22.9
H04 Hypospadias & Epispadias	20.8	*	5.3	30.5	33.6	29.7	31.5	30.0	29.1	36.4	23.3
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	111.5	103.0	106.2	124.6	127.0	120.8	122.4	120.2	124.1	128.4	129.5
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
I Congenital Anomalies of the Musculoskeletal System	149.7	151.4	122.1	168.5	156.3	171.0	178.0	164.2	152.6	177.0	181.4
I01 Upper Limb Reduction Deformities	2.6	4.5	2.7	2.3	3.0	2.6	2.7	2.5	1.9	2.0	1.5
I02 Lower Limb Reduction Deformities	1.7	1.8	2.0	1.8	1.6	2.0	2.0	1.7	1.5	1.7	1.8
I03 Gastroschisis/Omphalocele	5.4	4.2	5.4	5.6	4.7	5.7	4.1	5.6	6.1	6.3	7.2
I04 Congenital Hip Dislocation	13.8	18.3	14.4	12.8	14.7	15.7	15.2	12.4	10.6	9.1	11.6
I05 Diaphragmatic Hernia	3.2	3.6	3.2	3.3	2.9	3.3	2.6	3.7	3.7	2.9	4.0
I99. All Other Congenital Anomalies of the Musculoskeletal System	131.0	126.3	102.2	151.6	136.9	151.3	161.9	147.8	137.6	162.9	164.2

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
J Congenital Anomalies of the Integument	29.9	29.7	25.4	34.6	22.6	23.4	23.5	22.7	34.6	44.8	72.8
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
K Chromosomal Anomalies	20.4	21.4	17.2	21.5	20.4	21.2	21.7	21.5	21.8	22.4	21.7
K01 Trisomy 13	1.0	1.5	0.9	0.9	1.1	0.7	0.7	1.0	0.9	1.3	0.6
K02 Down Syndrome	11.6	11.5	9.8	12.5	10.3	12.8	13.4	10.9	13.4	13.5	13.6
K03 Trisomy 18	1.3	1.4	1.4	1.3	1.0	1.4	1.4	2.2	1.2	1.2	1.1
K99. All Other Chromosomal Anomalies	7.4	7.3	5.7	8.0	9.4	7.7	7.7	9.1	7.0	7.9	6.7
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
L Other and Unspecified Congenital Anomalies	34.6	28.6	16.6	48.2	46.2	57.4	50.2	54.3	49.0	47.1	32.9

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
M Infectious Conditions Occurring in the Perinatal Period	13.5	14.7	9.8	15.6	16.2	17.0	19.0	17.1	12.6	12.5	14.6
M01 Syphilis	3.6	11.1	3.6	1.5	1.8	2.5	1.5	2.4	*	1.1	0.8
M02 Other Infections	10.0	3.8	6.2	14.1	14.4	14.5	17.5	14.7	12.2	11.4	13.8
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
N Familial/Congenital Neoplasms	0.7	*	*	1.0	1.1	0.9	1.0	1.0	0.7	1.3	1.0
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
O Endocrine/Metabolic Disorders	30.6	20.4	21.8	37.3	39.3	38.2	39.5	34.4	30.3	39.7	39.7
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
P Diseases of the Blood & Blood Forming Organs	17.7	14.0	17.3	20.1	18.3	17.2	20.1	20.3	18.9	25.0	21.1
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
Q Other Diseases of the Central and Peripheral Nervous System	25.4	24.5	24.0	25.9	27.2	26.7	27.4	24.3	24.6	27.0	23.9
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
R Other Diseases of the Eye	49.2	29.1	45.8	53.4	53.8	53.1	55.1	51.7	52.4	56.6	50.9
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
S Hearing Deficiency	22.0	10.3	8.6	35.0	29.0	42.7	48.4	35.5	29.5	31.4	28.4
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
T Other Diseases of the Heart & Circulatory System	37.3	42.3	34.2	33.8	39.0	33.8	35.8	32.8	26.8	31.5	36.5

Table 11
Birth Defect Prevalence Rates by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
U Other Diseases of the Gastrointestinal System	66.8	71.4	67.7	65.1	66.9	71.8	65.7	63.0	61.8	67.2	58.7
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
V Other Diseases of the Genital and Urinary Systems	3.4	2.3	3.1	3.6	4.2	3.6	3.6	3.9	4.0	2.9	3.0
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
W Other Fetal/Placental Anomalies	0.5	*	-	1.1	-	-	*	*	*	7.1	*
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
X Other Musculoskeletal System Diseases	0.3	0.6	*	0.2	*	*	*	0.5	*	*	*
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
Y Maternal Exposures Affecting Fetus	25.8	24.1	32.5	20.9	27.6	28.2	21.4	15.4	17.2	20.4	15.6
Y01 Fetal Alcohol Syndrome	2.1	2.4	3.2	1.4	1.9	1.7	1.5	1.0	1.1	1.3	1.4
Y99. Other Maternal Exposures Affecting the Fetus	24.3	22.4	30.2	19.8	26.0	27.2	20.3	14.5	16.2	19.2	14.5
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
One or More Reportable Diagnosis	712.1	658.3	609.5	790.8	748.6	793.0	793.8	749.3	754.1	855.4	846.0

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 June 30, 2009

Last Updated on September 29, 2009

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 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
A Congenital Anomalies of the Central Nervous System	912	81	47	433	44	61	61	71	72	63	61
B Congenital Anomalies of the Eye	132	11	11	68	6	11	15	8	13	8	7
C Congenital Anomalies of the Ear, Face and Neck	141	17	6	60	7	10	8	9	11	14	1
D Congenital Anomalies of the Heart and Circulatory System	2,647	202	167	1,214	168	183	174	209	163	169	148
E Congenital Anomalies of the Respiratory System	1,081	76	65	515	81	58	77	87	76	74	62
F Cleft Palate and Cleft Lip	203	22	15	96	7	11	16	18	19	11	14
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	478	35	33	225	26	35	33	35	43	31	22
H Congenital Anomalies of the Genital and Urinary Systems	904	82	62	410	51	53	70	76	63	55	42
I Congenital Anomalies of the Musculoskeletal System	1,038	92	68	470	68	64	59	79	75	70	55
J Congenital Anomalies of the Integument	89	4	7	44	6	9	6	4	5	6	8
K Chromosomal Anomalies	702	67	33	335	58	41	43	62	47	56	28
L Other and Unspecified Congenital Anomalies	774	47	33	412	61	60	58	75	74	41	43

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 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
M Infectious Conditions Occurring in the Perinatal Period	221	11	7	138	22	26	24	22	12	13	19
N Familial/Congenital Neoplasms	-	-	-	-	-	-	-	-	-	-	-
O Endocrine/Metabolic Disorders	334	14	19	166	25	29	27	29	19	13	24
P Diseases of the Blood & Blood Forming Organs	260	11	19	113	20	14	13	15	9	22	20
Q Other Diseases of the Central and Peripheral Nervous System	199	19	12	78	12	10	11	12	9	13	11
R Other Diseases of the Eye	286	18	17	150	19	27	20	24	23	21	16
S Hearing Deficiency	51	1	4	40	3	5	7	12	5	4	4
T Other Diseases of the Heart & Circulatory System	615	56	37	257	54	30	35	33	30	30	45
U Other Diseases of the Gastrointestinal System	544	49	34	218	27	32	39	38	28	30	24
V Other Diseases of the Genital and Urinary Systems	10	1	-	4	-	-	1	1	1	1	-
W Other Fetal/Placental Anomalies	4	1	-	3	-	-	-	-	-	3	-
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	177	22	7	68	13	11	8	11	6	6	13
One or More Reportable Diagnosis	6,021	472	373	2,757	416	398	398	436	380	378	351

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 June 30, 2009
 Mortality data includes all linked deaths identified through death year 2007.

Last Updated on September 29, 2009

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 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
A Congenital Anomalies of the Central Nervous System	912	81	47	433	44	61	61	71	72	63	61
A01 Anencephalus	186	12	13	96	20	7	15	13	18	11	12
A02 Spina Bifida w/o Anencephaly	72	6	5	26	2	7	1	4	5	4	3
A03 Hydrocephalus w/o Spina Bifida	278	27	16	130	8	24	17	19	21	23	18
A04 Encephalocele	56	11	2	19	2	2	1	3	3	5	3
A05 Microcephalus	133	11	5	66	4	5	16	13	9	9	10
A99. All Other CNS Anomalies	361	28	17	191	15	29	25	38	30	28	26
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
B Congenital Anomalies of the Eye	132	11	11	68	6	11	15	8	13	8	7
B01 Anophthalmos/Microphthalmos	42	8	3	20	2	5	5	-	4	3	1
B02 Congenital Cataract	15	1	1	9	-	2	2	2	-	2	1
B03 Aniridia	1	-	-	1	-	-	-	-	-	1	-
B99. All Other Congenital Anomalies of the Eye	87	3	7	48	4	7	8	6	11	5	7
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
C Congenital Anomalies of the Ear, Face and Neck	141	17	6	60	7	10	8	9	11	14	1
C01 Anotia/Microtia	9	2	-	5	1	1	-	2	1	-	-
C99. All Other Congenital Anomalies of the Ear, Face and Neck	135	15	6	58	6	10	8	9	10	14	1

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 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
D Congenital Anomalies of the Heart and Circulatory System	2,647	202	167	1,214	168	183	174	209	163	169	148
D01 Common Truncus	40	3	1	16	2	4	1	3	2	2	2
D02 Transposition of Great Vessels	150	9	5	60	10	4	9	9	9	7	12
D03 Tetralogy of Fallot	124	10	10	49	13	6	4	8	8	5	5
D04 Ventricular Septal Defect	547	46	33	239	40	30	34	40	41	27	27
D05 Atrial Septal Defect	747	37	36	396	47	55	53	77	54	62	48
D06 Endocardial Cushion Defect	156	18	10	61	11	10	2	11	9	11	7
D07 Pulmonary Valve Atresia and Stenosis	155	9	5	69	12	12	7	12	6	10	10
D08 Tricuspid Valve Atresia and Stenosis	44	5	3	16	6	2	3	2	-	1	2
D09 Ebstein's Anomaly	34	1	-	25	8	5	7	-	1	1	3
D10 Aortic Valve Stenosis	54	4	2	19	2	5	-	1	3	4	4
D11 Hypoplastic Left Heart Syndrome	300	26	18	123	19	23	18	17	11	16	19
D12 Patent Ductus Arteriosus	1,001	88	63	456	59	53	49	91	64	76	64
D13 Coarctation of Aorta	151	9	10	68	9	4	7	9	10	12	17
D14 Pulmonary Artery Anomalies	209	12	8	99	20	19	10	20	9	14	7
D99. All Other Congenital Anomalies of the Heart and Circulatory System	1,561	111	97	709	91	107	111	117	101	96	86
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
E Congenital Anomalies of the Respiratory System	1,081	76	65	515	81	58	77	87	76	74	62
E01 Lung Agenesis/Hypoplasia	722	56	46	307	56	37	42	57	42	48	25
E02 Choanal Atresia	17	1	-	6	1	2	1	-	-	1	1
E99. All Other Congenital Anomalies of the Respiratory System	387	22	19	229	28	21	39	36	37	30	38
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
F Cleft Palate and Cleft Lip	203	22	15	96	7	11	16	18	19	11	14
F01 Cleft Palate	76	8	8	31	3	4	8	6	6	1	3
F02 Cleft Lip w and w/o Cleft Palate	127	14	7	65	4	7	8	12	13	10	11

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 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	478	35	33	225	26	35	33	35	43	31	22
G01 Esophageal Atresia/ Tracheoesophageal Fistula	81	11	6	33	3	6	4	6	8	5	1
G02 Rectal and Large Intestinal Atresia/Stenosis	86	6	11	32	2	4	3	4	9	6	4
G03 Pyloric Stenosis	23	-	-	15	5	3	1	3	1	1	1
G04 Hirshsprung's Disease (congenital megacolon)	19	1	1	9	1	4	1	1	-	-	2
G05 Biliary Atresia	15	-	1	7	1	1	2	-	1	1	1
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	316	18	17	159	17	22	26	24	32	23	15
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
H Congenital Anomalies of the Genital and Urinary Systems	904	82	62	410	51	53	70	76	63	55	42
H01 Renal Agenesis/Hypoplasia	240	23	18	100	17	10	20	20	14	11	8
H02 Bladder Extrophy	7	1	-	1	-	-	-	-	-	1	-
H03 Obstructive Genitourinary Defects	152	15	9	77	9	3	13	17	14	12	9
H04 Hypospadias & Epispadias	56	-	1	47	4	10	8	5	12	6	2
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	708	66	48	314	35	40	53	56	50	45	35
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
I Congenital Anomalies of the Musculoskeletal System	1,038	92	68	470	68	64	59	79	75	70	55
I01 Upper Limb Reduction Deformities	36	2	2	15	2	2	1	2	4	2	2
I02 Lower Limb Reduction Deformities	27	2	-	8	-	1	2	-	3	1	1
I03 Gastroschisis/Omphalocele	125	5	10	55	5	8	5	12	6	11	8
I04 Congenital Hip Dislocation	29	3	1	8	2	2	1	-	1	2	-
I05 Diaphragmatic Hernia	185	18	17	80	12	10	11	19	10	10	8
I99. All Other Congenital Anomalies of the Musculoskeletal System	745	69	45	347	50	45	48	50	64	50	40

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 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
J Congenital Anomalies of the Integument	89	4	7	44	6	9	6	4	5	6	8
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
K Chromosomal Anomalies	702	67	33	335	58	41	43	62	47	56	28
K01 Trisomy 13	147	18	8	63	13	6	7	10	10	13	4
K02 Down Syndrome	195	17	8	95	15	17	13	16	14	14	6
K03 Trisomy 18	204	17	16	86	11	14	10	19	10	11	11
K99. All Other Chromosomal Anomalies	202	15	1	121	24	9	15	28	14	24	7
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
L Other and Unspecified Congenital Anomalies	774	47	33	412	61	60	58	75	74	41	43

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 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
M Infectious Conditions Occurring in the Perinatal Period	221	11	7	138	22	26	24	22	12	13	19
M01 Syphilis	16	2	1	3	-	-	1	1	-	1	-
M02 Other Infections	205	9	6	135	22	26	23	21	12	12	19
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
N Familial/Congenital Neoplasms	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
O Endocrine/Metabolic Disorders	334	14	19	166	25	29	27	29	19	13	24
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
P Diseases of the Blood & Blood Forming Organs	260	11	19	113	20	14	13	15	9	22	20
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
Q Other Diseases of the Central and Peripheral Nervous System	199	19	12	78	12	10	11	12	9	13	11
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
R Other Diseases of the Eye	286	18	17	150	19	27	20	24	23	21	16
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
S Hearing Deficiency	51	1	4	40	3	5	7	12	5	4	4
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
T Other Diseases of the Heart & Circulatory System	615	56	37	257	54	30	35	33	30	30	45

Table 13
Infant Deaths of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992,1995 and 2000-2006,
Cases Diagnosed within One Year from Birth
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
U Other Diseases of the Gastrointestinal System	544	49	34	218	27	32	39	38	28	30	24
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
V Other Diseases of the Genital and Urinary Systems	10	1	-	4	-	-	1	1	1	1	-
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
W Other Fetal/Placental Anomalies	4	1	-	3	-	-	-	-	-	3	-
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
Y Maternal Exposures Affecting Fetus	177	22	7	68	13	11	8	11	6	6	13
Y01 Fetal Alcohol Syndrome	18	3	1	3	-	-	1	1	1	-	-
Y99. Other Maternal Exposures Affecting the Fetus	162	20	6	65	13	11	7	10	5	6	13
Diagnostic Grouping	1992 to 2006	1992	1995	2000 to 2006	2000	2001	2002	2003	2004	2005	2006
One or More Reportable Diagnosis	6,021	472	373	2,757	416	398	398	436	380	378	351

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 June 30, 2009
Mortality data includes all linked deaths identified through death year 2007.

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
A Congenital Anomalies of the Central Nervous System	212	166	193	204	206	196
B Congenital Anomalies of the Eye	25	32	34	36	29	28
C Congenital Anomalies of the Ear, Face and Neck	39	25	27	28	34	26
D Congenital Anomalies of the Heart and Circulatory System	575	525	566	546	541	480
E Congenital Anomalies of the Respiratory System	223	216	222	240	237	212
F Cleft Palate and Cleft Lip	47	34	45	53	48	44
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	98	94	103	111	109	96
H Congenital Anomalies of the Genital and Urinary Systems	218	174	199	209	194	160
I Congenital Anomalies of the Musculoskeletal System	255	191	202	213	224	200
J Congenital Anomalies of the Integument	22	21	19	15	15	19
K Chromosomal Anomalies	153	142	146	152	165	131
L Other and Unspecified Congenital Anomalies	135	179	193	207	190	158

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
M Infectious Conditions Occurring in the Perinatal Period	36	72	72	58	47	44
N Familial/Congenital Neoplasms	-	-	-	-	-	-
O Endocrine/Metabolic Disorders	63	81	85	75	61	56
P Diseases of the Blood & Blood Forming Organs	51	47	42	37	46	51
Q Other Diseases of the Central and Peripheral Nervous System	53	33	33	32	34	33
R Other Diseases of the Eye	54	66	71	67	68	60
S Hearing Deficiency	3	15	24	24	21	13
T Other Diseases of the Heart & Circulatory System	173	119	98	98	93	105
U Other Diseases of the Gastrointestinal System	146	98	109	105	96	82
V Other Diseases of the Genital and Urinary Systems	4	1	2	3	3	2
W Other Fetal/Placental Anomalies	1	-	-	-	3	3
X Other Musculoskeletal System Diseases	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	63	32	30	25	23	25
One or More Reportable Diagnosis	1,353	1,212	1,232	1,214	1,194	1,109

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 June 30, 2009

Last Updated on September 29, 2009

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
A Congenital Anomalies of the Central Nervous System	212	166	193	204	206	196
A01 Anencephalus	38	42	35	46	42	41
A02 Spina Bifida w/o Anencephaly	19	10	12	10	13	12
A03 Hydrocephalus w/o Spina Bifida	67	49	60	57	63	62
A04 Encephalocele	23	5	6	7	11	11
A05 Microcephalus	30	25	34	38	31	28
A99. All Other CNS Anomalies	71	69	92	93	96	84
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
B Congenital Anomalies of the Eye	25	32	34	36	29	28
B01 Anophthalmos/Microphthalmos	12	12	10	9	7	8
B02 Congenital Cataract	2	4	6	4	4	3
B03 Aniridia	-	-	-	-	1	1
B99. All Other Congenital Anomalies of the Eye	12	19	21	25	22	23
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
C Congenital Anomalies of the Ear, Face and Neck	39	25	27	28	34	26
C01 Anotia/Microtia	3	2	3	3	3	1
C99. All Other Congenital Anomalies of the Ear, Face and Neck	36	24	27	27	33	25

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
D Congenital Anomalies of the Heart and Circulatory System	575	525	566	546	541	480
D01 Common Truncus	11	7	8	6	7	6
D02 Transposition of Great Vessels	38	23	22	27	25	28
D03 Tetralogy of Fallot	31	23	18	20	21	18
D04 Ventricular Septal Defect	132	104	104	115	108	95
D05 Atrial Septal Defect	122	155	185	184	193	164
D06 Endocardial Cushion Defect	44	23	23	22	31	27
D07 Pulmonary Valve Atresia and Stenosis	32	31	31	25	28	26
D08 Tricuspid Valve Atresia and Stenosis	14	11	7	5	3	3
D09 Ebstein's Anomaly	4	20	12	8	2	5
D10 Aortic Valve Stenosis	15	7	6	4	8	11
D11 Hypoplastic Left Heart Syndrome	64	60	58	46	44	46
D12 Patent Ductus Arteriosus	253	161	193	204	231	204
D13 Coarctation of Aorta	31	20	20	26	31	39
D14 Pulmonary Artery Anomalies	39	49	49	39	43	30
D99. All Other Congenital Anomalies of the Heart and Circulatory System	335	309	335	329	314	283
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
E Congenital Anomalies of the Respiratory System	223	216	222	240	237	212
E01 Lung Agenesis/Hypoplasia	158	135	136	141	147	115
E02 Choanal Atresia	3	4	3	1	1	2
E99. All Other Congenital Anomalies of the Respiratory System	70	88	96	112	103	105
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
F Cleft Palate and Cleft Lip	47	34	45	53	48	44
F01 Cleft Palate	19	15	18	20	13	10
F02 Cleft Lip w and w/o Cleft Palate	28	19	27	33	35	34

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	98	94	103	111	109	96
G01 Esophageal Atresia/ Tracheoesophageal Fistula	23	13	16	18	19	14
G02 Rectal and Large Intestinal Atresia/Stenosis	19	9	11	16	19	19
G03 Pyloric Stenosis	4	9	7	5	5	3
G04 Hirshsprung's Disease (congenital megacolon)	6	6	6	2	1	2
G05 Biliary Atresia	1	4	3	3	2	3
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	56	65	72	82	79	70
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
H Congenital Anomalies of the Genital and Urinary Systems	218	174	199	209	194	160
H01 Renal Agenesis/Hypoplasia	59	47	50	54	45	33
H02 Bladder Exstrophy	3	-	-	-	1	1
H03 Obstructive Genitourinary Defects	33	25	33	44	43	35
H04 Hypospadias & Epispadias	1	22	23	25	23	20
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	179	128	149	159	151	130
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
I Congenital Anomalies of the Musculoskeletal System	255	191	202	213	224	200
I01 Upper Limb Reduction Deformities	11	5	5	7	8	8
I02 Lower Limb Reduction Deformities	9	3	3	5	4	5
I03 Gastroschisis/Omphalocele	22	18	25	23	29	25
I04 Congenital Hip Dislocation	12	5	3	2	3	3
I05 Diaphragmatic Hernia	41	33	40	40	39	28
I99. All Other Congenital Anomalies of the Musculoskeletal System	187	143	143	162	164	154

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
J Congenital Anomalies of the Integument	22	21	19	15	15	19
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
K Chromosomal Anomalies	153	142	146	152	165	131
K01 Trisomy 13	40	26	23	27	33	27
K02 Down Syndrome	43	45	46	43	44	34
K03 Trisomy 18	46	35	43	39	40	32
K99. All Other Chromosomal Anomalies	28	48	52	57	66	45
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
L Other and Unspecified Congenital Anomalies	135	179	193	207	190	158

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
M Infectious Conditions Occurring in the Perinatal Period	36	72	72	58	47	44
M01 Syphilis	9	1	2	2	2	1
M02 Other Infections	27	71	70	56	45	43
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
N Familial/Congenital Neoplasms	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
O Endocrine/Metabolic Disorders	63	81	85	75	61	56
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
P Diseases of the Blood & Blood Forming Organs	51	47	42	37	46	51
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
Q Other Diseases of the Central and Peripheral Nervous System	53	33	33	32	34	33
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
R Other Diseases of the Eye	54	66	71	67	68	60
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
S Hearing Deficiency	3	15	24	24	21	13
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
T Other Diseases of the Heart & Circulatory System	173	119	98	98	93	105

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Three-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
U Other Diseases of the Gastrointestinal System	146	98	109	105	96	82
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
V Other Diseases of the Genital and Urinary Systems	4	1	2	3	3	2
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
W Other Fetal/Placental Anomalies	1	-	-	-	3	3
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
X Other Musculoskeletal System Diseases	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
Y Maternal Exposures Affecting Fetus	63	32	30	25	23	25
Y01 Fetal Alcohol Syndrome	8	1	2	3	2	1
Y99. Other Maternal Exposures Affecting the Fetus	57	31	28	22	21	24
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
One or More Reportable Diagnosis	1,353	1,212	1,232	1,214	1,194	1,109

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 June 30, 2009

Last Updated on September 29, 2009

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
A Congenital Anomalies of the Central Nervous System	160.4	108.9	126.1	131.0	131.8	123.7
B Congenital Anomalies of the Eye	29.8	28.1	29.8	32.1	26.6	28.1
C Congenital Anomalies of the Ear, Face and Neck	49.2	36.1	39.5	43.3	51.7	42.3
D Congenital Anomalies of the Heart and Circulatory System	92.3	77.5	80.5	75.1	72.3	62.7
E Congenital Anomalies of the Respiratory System	171.1	122.7	112.2	117.6	109.6	88.7
F Cleft Palate and Cleft Lip	73.3	55.0	70.6	88.3	80.0	75.0
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	44.0	39.7	45.6	52.3	53.9	45.3
H Congenital Anomalies of the Genital and Urinary Systems	47.0	29.9	35.5	37.5	34.4	28.3
I Congenital Anomalies of the Musculoskeletal System	41.6	28.8	30.3	33.5	35.5	30.9
J Congenital Anomalies of the Integument	17.5	23.0	21.0	14.4	11.5	9.9
K Chromosomal Anomalies	177.9	170.7	174.6	181.6	196.0	156.9
L Other and Unspecified Congenital Anomalies	133.5	88.5	91.8	104.8	98.7	96.6

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
M Infectious Conditions Occurring in the Perinatal Period	58.0	105.1	104.7	92.7	86.9	87.5
N Familial/Congenital Neoplasms	-	-	-	-	-	-
O Endocrine/Metabolic Disorders	67.4	52.6	58.4	56.0	45.7	40.3
P Diseases of the Blood & Blood Forming Organs	77.2	64.4	56.2	48.6	56.1	62.1
Q Other Diseases of the Central and Peripheral Nervous System	52.0	30.9	32.4	32.6	35.0	34.5
R Other Diseases of the Eye	33.3	31.0	34.2	32.7	33.1	29.6
S Hearing Deficiency	*	9.5	14.6	16.5	17.0	11.5
T Other Diseases of the Heart & Circulatory System	87.0	83.2	73.7	79.8	79.8	87.6
U Other Diseases of the Gastrointestinal System	48.4	36.4	41.8	42.8	39.1	34.5
V Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*
W Other Fetal/Placental Anomalies	*	-	-	-	*	*
X Other Musculoskeletal System Diseases	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	44.0	31.4	35.5	36.0	34.0	37.1
One or More Reportable Diagnosis	47.8	39.5	40.6	41.1	39.6	35.7

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 June 30, 2009

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
A Congenital Anomalies of the Central Nervous System	160.4	108.9	126.1	131.0	131.8	123.7
A01 Anencephalus	974.4	976.7	897.4	884.6	857.1	891.3
A02 Spina Bifida w/o Anencephaly	103.8	61.3	72.3	63.3	74.7	66.3
A03 Hydrocephalus w/o Spina Bifida	150.2	116.1	148.1	148.4	168.4	165.3
A04 Encephalocele	383.3	*	162.2	179.5	234.0	239.1
A05 Microcephalus	117.6	66.0	90.4	98.7	83.1	74.3
A99. All Other CNS Anomalies	123.9	92.7	115.7	111.2	111.6	97.8
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
B Congenital Anomalies of the Eye	29.8	28.1	29.8	32.1	26.6	28.1
B01 Anophthalmos/Microphthalmos	196.7	141.2	108.7	104.7	89.7	114.3
B02 Congenital Cataract	*	*	57.1	*	*	*
B03 Aniridia	-	-	-	-	*	*
B99. All Other Congenital Anomalies of the Eye	16.1	18.4	20.4	24.7	22.3	25.3
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
C Congenital Anomalies of the Ear, Face and Neck	49.2	36.1	39.5	43.3	51.7	42.3
C01 Anotia/Microtia	*	*	*	*	*	*
C99. All Other Congenital Anomalies of the Ear, Face and Neck	46.2	35.6	40.3	42.9	51.1	41.5

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
D Congenital Anomalies of the Heart and Circulatory System	92.3	77.5	80.5	75.1	72.3	62.7
D01 Common Truncus	215.7	159.1	137.9	115.4	122.8	127.7
D02 Transposition of Great Vessels	189.1	121.1	123.6	150.8	126.9	132.7
D03 Tetralogy of Fallot	131.4	109.5	82.9	97.6	103.4	93.8
D04 Ventricular Septal Defect	75.5	64.0	64.0	70.2	64.8	57.4
D05 Atrial Septal Defect	76.4	58.6	65.8	60.2	58.1	46.6
D06 Endocardial Cushion Defect	245.8	111.7	100.4	96.5	139.0	129.8
D07 Pulmonary Valve Atresia and Stenosis	70.3	70.8	67.0	58.7	60.1	56.9
D08 Tricuspid Valve Atresia and Stenosis	280.0	154.9	92.1	*	*	*
D09 Ebstein's Anomaly	*	169.5	118.8	123.1	*	*
D10 Aortic Valve Stenosis	150.0	69.3	64.5	*	76.9	110.0
D11 Hypoplastic Left Heart Syndrome	441.4	357.1	327.7	282.2	263.5	293.0
D12 Patent Ductus Arteriosus	118.8	86.2	93.9	95.3	100.6	86.8
D13 Coarctation of Aorta	164.9	87.0	85.8	107.4	131.9	162.5
D14 Pulmonary Artery Anomalies	68.2	58.2	56.5	48.5	53.2	37.0
D99. All Other Congenital Anomalies of the Heart and Circulatory System	121.1	108.6	111.6	100.7	96.2	84.6
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
E Congenital Anomalies of the Respiratory System	171.1	122.7	112.2	117.6	109.6	88.7
E01 Lung Agenesis/Hypoplasia	731.5	548.8	435.9	402.9	408.3	410.7
E02 Choanal Atresia	*	*	*	*	*	*
E99. All Other Congenital Anomalies of the Respiratory System	63.5	57.7	56.7	64.7	55.7	48.9
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
F Cleft Palate and Cleft Lip	73.3	55.0	70.6	88.3	80.0	75.0
F01 Cleft Palate	80.2	68.8	83.3	103.1	64.4	47.4
F02 Cleft Lip w and w/o Cleft Palate	69.3	47.5	64.1	81.3	87.9	90.4

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	44.0	39.7	45.6	52.3	53.9	45.3
G01 Esophageal Atresia/ Tracheoesophageal Fistula	111.1	104.8	118.5	133.3	142.9	114.8
G02 Rectal and Large Intestinal Atresia/Stenosis	102.7	44.8	59.1	86.0	105.6	101.6
G03 Pyloric Stenosis	*	11.0	9.1	*	*	*
G04 Hirshsprung's Disease (congenital megacolon)	45.5	44.4	45.1	*	*	*
G05 Biliary Atresia	*	*	*	*	*	*
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	55.8	54.2	63.0	72.8	71.8	60.1
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
H Congenital Anomalies of the Genital and Urinary Systems	47.0	29.9	35.5	37.5	34.4	28.3
H01 Renal Agenesis/Hypoplasia	287.8	185.8	216.5	242.2	217.4	187.5
H02 Bladder Exstrophy	*	-	-	-	*	*
H03 Obstructive Genitourinary Defects	53.8	29.8	37.6	49.3	46.7	38.6
H04 Hypospadias & Epispadias	*	17.6	19.4	21.4	18.8	17.8
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	39.8	26.3	31.6	33.7	31.7	26.9
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
I Congenital Anomalies of the Musculoskeletal System	41.6	28.8	30.3	33.5	35.5	30.9
I01 Upper Limb Reduction Deformities	76.9	*	*	76.1	96.4	115.9
I02 Lower Limb Reduction Deformities	128.6	*	*	*	*	*
I03 Gastroschisis/Omphalocele	95.7	94.7	125.6	113.9	126.1	100.8
I04 Congenital Hip Dislocation	17.1	*	*	*	*	*
I05 Diaphragmatic Hernia	310.6	287.0	322.6	312.5	295.5	209.0
I99. All Other Congenital Anomalies of the Musculoskeletal System	36.1	24.2	23.9	28.2	28.6	26.2

Table 17
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
J Congenital Anomalies of the Integument	17.5	23.0	21.0	14.4	11.5	9.9
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
K Chromosomal Anomalies	177.9	170.7	174.6	181.6	196.0	156.9
K01 Trisomy 13	701.8	787.9	741.9	794.1	785.7	750.0
K02 Down Syndrome	90.9	93.8	95.4	88.7	91.1	66.4
K03 Trisomy 18	836.4	700.0	671.9	639.3	689.7	727.3
K99. All Other Chromosomal Anomalies	94.3	146.8	163.5	185.7	214.3	164.2
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
L Other and Unspecified Congenital Anomalies	133.5	88.5	91.8	104.8	98.7	96.6

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
M Infectious Conditions Occurring in the Perinatal Period	58.0	105.1	104.7	92.7	86.9	87.5
M01 Syphilis	23.4	*	*	*	*	*
M02 Other Infections	111.6	116.6	115.7	98.1	91.6	90.7
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
N Familial/Congenital Neoplasms	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
O Endocrine/Metabolic Disorders	67.4	52.6	58.4	56.0	45.7	40.3
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
P Diseases of the Blood & Blood Forming Organs	77.2	64.4	56.2	48.6	56.1	62.1
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
Q Other Diseases of the Central and Peripheral Nervous System	52.0	30.9	32.4	32.6	35.0	34.5
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
R Other Diseases of the Eye	33.3	31.0	34.2	32.7	33.1	29.6
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
S Hearing Deficiency	*	9.5	14.6	16.5	17.0	11.5
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
T Other Diseases of the Heart & Circulatory System	87.0	83.2	73.7	79.8	79.8	87.6

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 1992-1994 and 2000-2006,
Cases Diagnosed within One Year from Birth
Moving Three-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
U Other Diseases of the Gastrointestinal System	48.4	36.4	41.8	42.8	39.1	34.5
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
V Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
W Other Fetal/Placental Anomalies	*	-	-	-	*	*
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
X Other Musculoskeletal System Diseases	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
Y Maternal Exposures Affecting Fetus	44.0	31.4	35.5	36.0	34.0	37.1
Y01 Fetal Alcohol Syndrome	60.6	*	*	*	*	*
Y99. Other Maternal Exposures Affecting the Fetus	42.6	32.0	34.7	33.5	32.9	38.0
Diagnostic Grouping	1992 to 1994	2000 to 2002	2001 to 2003	2002 to 2004	2003 to 2005	2004 to 2006
One or More Reportable Diagnosis	47.8	39.5	40.6	41.1	39.6	35.7

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 June 30, 2009

Last Updated on September 29, 2009

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 1992-2006,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
A Congenital Anomalies of the Central Nervous System	361	336	332	311	325	344	355	371	372	389
B Congenital Anomalies of the Eye	49	46	50	45	45	55	55	60	61	62
C Congenital Anomalies of the Ear, Face and Neck	65	59	53	49	53	56	50	50	59	53
D Congenital Anomalies of the Heart and Circulatory System	1,091	1,063	1,042	1,026	1,042	1,051	1,076	1,065	1,066	1,046
E Congenital Anomalies of the Respiratory System	401	402	420	424	417	436	468	467	453	434
F Cleft Palate and Cleft Lip	85	74	76	67	63	67	74	82	82	89
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	188	191	184	181	183	188	194	199	203	199
H Congenital Anomalies of the Genital and Urinary Systems	385	355	336	327	318	335	359	370	368	359
I Congenital Anomalies of the Musculoskeletal System	455	413	388	381	377	367	383	408	415	402
J Congenital Anomalies of the Integument	38	36	29	29	31	31	32	35	36	38
K Chromosomal Anomalies	271	246	253	272	280	277	300	305	307	277
L Other and Unspecified Congenital Anomalies	256	261	270	288	315	328	360	382	369	351

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 1992-2006,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
M Infectious Conditions Occurring in the Perinatal Period	62	60	59	69	88	104	115	118	119	116
N Familial/Congenital Neoplasms	-	-	-	-	-	-	-	-	-	-
O Endocrine/Metabolic Disorders	133	135	132	130	140	142	145	148	142	141
P Diseases of the Blood & Blood Forming Organs	104	111	115	116	111	107	105	96	93	93
Q Other Diseases of the Central and Peripheral Nervous System	90	91	85	80	78	79	76	65	67	66
R Other Diseases of the Eye	100	103	97	101	111	117	126	128	134	131
S Hearing Deficiency	8	9	9	11	12	19	30	33	36	37
T Other Diseases of the Heart & Circulatory System	273	252	246	239	232	236	237	232	212	203
U Other Diseases of the Gastrointestinal System	253	241	223	207	205	213	209	200	194	191
V Other Diseases of the Genital and Urinary Systems	5	4	4	2	2	2	3	4	4	4
W Other Fetal/Placental Anomalies	1	-	-	-	-	-	-	-	3	3
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	90	75	71	59	63	59	62	61	55	55
One or More Reportable Diagnosis	2,481	2,401	2,347	2,327	2,352	2,395	2,431	2,419	2,406	2,341

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 June 30, 2009

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 1992-2006,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
A Congenital Anomalies of the Central Nervous System	361	336	332	311	325	344	355	371	372	389
A01 Anencephalus	66	66	66	72	66	76	79	85	84	76
A02 Spina Bifida w/o Anencephaly	34	34	33	29	31	29	26	25	23	24
A03 Hydrocephalus w/o Spina Bifida	110	102	96	89	97	99	106	108	112	122
A04 Encephalocele	30	24	20	16	16	14	15	13	16	17
A05 Microcephalus	51	44	49	41	41	52	54	59	56	62
A99. All Other CNS Anomalies	131	120	125	114	126	137	146	159	165	176
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
B Congenital Anomalies of the Eye	49	46	50	45	45	55	55	60	61	62
B01 Anophthalmos/Microphthalmos	16	12	12	12	14	18	18	18	19	18
B02 Congenital Cataract	5	4	5	4	5	5	7	7	8	9
B03 Aniridia	-	-	-	-	-	-	-	-	1	1
B99. All Other Congenital Anomalies of the Eye	31	32	35	31	31	35	33	40	41	44
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
C Congenital Anomalies of the Ear, Face and Neck	65	59	53	49	53	56	50	50	59	53
C01 Anotia/Microtia	3	2	1	2	3	3	5	5	5	4
C99. All Other Congenital Anomalies of the Ear, Face and Neck	62	57	52	47	51	54	48	48	57	52

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 1992-2006,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
D Congenital Anomalies of the Heart and Circulatory System	1,091	1,063	1,042	1,026	1,042	1,051	1,076	1,065	1,066	1,046
D01 Common Truncus	20	19	18	15	18	17	14	14	14	14
D02 Transposition of Great Vessels	68	70	62	62	61	60	54	52	48	50
D03 Tetralogy of Fallot	54	55	59	57	53	50	52	49	44	36
D04 Ventricular Septal Defect	236	222	213	216	213	213	216	225	212	199
D05 Atrial Septal Defect	262	272	275	276	295	306	321	328	348	349
D06 Endocardial Cushion Defect	79	67	66	62	62	53	50	53	54	50
D07 Pulmonary Valve Atresia and Stenosis	57	62	64	66	73	73	72	64	59	57
D08 Tricuspid Valve Atresia and Stenosis	25	22	18	20	19	19	16	14	14	10
D09 Ebstein's Anomaly	4	4	5	13	18	25	25	25	22	17
D10 Aortic Valve Stenosis	25	27	23	22	25	24	18	15	15	17
D11 Hypoplastic Left Heart Syndrome	129	126	132	132	137	136	125	113	104	104
D12 Patent Ductus Arteriosus	447	405	374	351	341	336	350	368	392	397
D13 Coarctation of Aorta	60	59	62	61	55	56	52	54	51	59
D14 Pulmonary Artery Anomalies	79	81	88	91	102	96	100	95	92	79
D99. All Other Congenital Anomalies of the Heart and Circulatory System	648	640	625	608	618	621	630	628	623	618
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
E Congenital Anomalies of the Respiratory System	401	402	420	424	417	436	468	467	453	434
E01 Lung Agenesis/Hypoplasia	289	294	304	313	304	297	318	299	282	251
E02 Choanal Atresia	8	9	9	9	11	12	7	5	5	5
E99. All Other Congenital Anomalies of the Respiratory System	118	112	119	116	118	147	164	185	191	201
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
F Cleft Palate and Cleft Lip	85	74	76	67	63	67	74	82	82	89
F01 Cleft Palate	35	33	33	29	25	27	31	31	28	28
F02 Cleft Lip w and w/o Cleft Palate	50	41	43	38	38	40	43	51	54	61

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 1992-2006,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	188	191	184	181	183	188	194	199	203	199
G01 Esophageal Atresia/ Tracheoesophageal Fistula	39	32	29	28	28	28	28	32	32	30
G02 Rectal and Large Intestinal Atresia/Stenosis	40	42	41	37	30	28	27	28	28	30
G03 Pyloric Stenosis	6	7	5	9	12	12	14	14	14	10
G04 Hirshsprung's Disease (congenital megacolon)	8	8	8	5	8	8	9	8	7	8
G05 Biliary Atresia	6	7	8	8	8	6	6	6	6	6
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	113	122	121	118	123	130	133	138	144	142
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
H Congenital Anomalies of the Genital and Urinary Systems	385	355	336	327	318	335	359	370	368	359
H01 Renal Agenesis/Hypoplasia	107	101	99	98	90	91	100	97	92	83
H02 Bladder Exstrophy	4	4	3	3	3	2	2	1	1	1
H03 Obstructive Genitourinary Defects	59	52	45	51	45	50	58	64	68	68
H04 Hypospadias & Epispadias	6	9	8	12	21	29	30	39	45	43
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	308	280	266	250	242	255	270	282	279	279
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
I Congenital Anomalies of the Musculoskeletal System	455	413	388	381	377	367	383	408	415	402
I01 Upper Limb Reduction Deformities	20	18	15	12	12	9	8	12	13	13
I02 Lower Limb Reduction Deformities	16	15	15	10	11	11	6	8	7	8
I03 Gastroschisis/Omphalocele	52	57	57	53	51	46	48	44	47	50
I04 Congenital Hip Dislocation	18	16	13	11	12	12	8	8	8	6
I05 Diaphragmatic Hernia	87	76	76	76	69	65	70	73	72	68
I99. All Other Congenital Anomalies of the Musculoskeletal System	322	286	263	261	261	258	269	300	307	297

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 1992-2006,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
J Congenital Anomalies of the Integument	38	36	29	29	31	31	32	35	36	38
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
K Chromosomal Anomalies	271	246	253	272	280	277	300	305	307	277
K01 Trisomy 13	66	55	51	57	55	54	54	57	59	50
K02 Down Syndrome	74	68	71	72	81	80	87	90	89	80
K03 Trisomy 18	87	81	85	83	81	77	85	84	75	75
K99. All Other Chromosomal Anomalies	52	52	59	77	85	87	105	104	114	97
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
L Other and Unspecified Congenital Anomalies	256	261	270	288	315	328	360	382	369	351

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 1992-2006,
Cases Diagnosed within One Year from Birth
Six-year Infant Mortality Totals
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
M Infectious Conditions Occurring in the Perinatal Period	62	60	59	69	88	104	115	118	119	116
M01 Syphilis	13	11	6	4	3	4	2	2	3	3
M02 Other Infections	49	49	53	65	85	100	113	116	116	113
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
N Familial/Congenital Neoplasms	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
O Endocrine/Metabolic Disorders	133	135	132	130	140	142	145	148	142	141
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
P Diseases of the Blood & Blood Forming Organs	104	111	115	116	111	107	105	96	93	93
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
Q Other Diseases of the Central and Peripheral Nervous System	90	91	85	80	78	79	76	65	67	66
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
R Other Diseases of the Eye	100	103	97	101	111	117	126	128	134	131
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
S Hearing Deficiency	8	9	9	11	12	19	30	33	36	37
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
T Other Diseases of the Heart & Circulatory System	273	252	246	239	232	236	237	232	212	203

**Table 19
 Infant Deaths of Michigan Children with Reported Birth Defects
 by Detailed Diagnostic Code Group and Birth Year,
 Michigan Resident Children Born in Michigan During 1992-2006,
 Cases Diagnosed within One Year from Birth
 Six-year Infant Mortality Totals
 (Continued)**

Other Reportable Conditions

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
U Other Diseases of the Gastrointestinal System	253	241	223	207	205	213	209	200	194	191
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
V Other Diseases of the Genital and Urinary Systems	5	4	4	2	2	2	3	4	4	4
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
W Other Fetal/Placental Anomalies	1	-	-	-	-	-	-	-	3	3
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
Y Maternal Exposures Affecting Fetus	90	75	71	59	63	59	62	61	55	55
Y01 Fetal Alcohol Syndrome	13	10	10	7	6	4	4	5	3	3
Y99. Other Maternal Exposures Affecting the Fetus	79	66	62	53	58	56	59	57	52	52
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
One or More Reportable Diagnosis	2,481	2,401	2,347	2,327	2,352	2,395	2,431	2,419	2,406	2,341

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 June 30, 2009

Last Updated on September 29, 2009

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 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
A Congenital Anomalies of the Central Nervous System	145.0	139.5	137.0	124.2	124.7	123.8	123.8	122.8	120.5	124.9
B Congenital Anomalies of the Eye	30.6	28.1	29.4	24.7	23.3	26.4	25.0	26.9	27.4	29.0
C Congenital Anomalies of the Ear, Face and Neck	46.9	45.7	43.6	41.8	44.7	44.5	39.6	39.1	43.7	40.8
D Congenital Anomalies of the Heart and Circulatory System	88.8	85.9	84.2	83.8	82.7	81.5	81.4	77.5	74.7	71.2
E Congenital Anomalies of the Respiratory System	178.2	186.7	194.2	186.9	162.6	151.8	141.8	129.3	115.5	99.4
F Cleft Palate and Cleft Lip	66.3	59.2	59.3	52.1	48.5	51.9	57.8	65.2	67.3	72.7
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	44.3	45.4	44.4	42.7	41.5	41.9	43.3	44.7	46.3	45.5
H Congenital Anomalies of the Genital and Urinary Systems	42.9	39.9	37.0	34.3	32.0	32.0	33.2	33.0	32.1	31.9
I Congenital Anomalies of the Musculoskeletal System	41.3	39.3	37.7	36.4	34.0	31.2	31.3	32.5	32.0	30.6
J Congenital Anomalies of the Integument	16.9	17.3	14.6	15.6	17.0	17.3	18.1	17.9	16.2	13.5
K Chromosomal Anomalies	170.9	163.0	167.1	179.1	178.5	174.9	184.2	181.5	183.4	165.8
L Other and Unspecified Congenital Anomalies	144.3	154.3	150.8	135.7	118.5	106.8	104.0	101.4	93.5	93.9

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 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
M Infectious Conditions Occurring in the Perinatal Period	63.1	66.3	71.0	79.8	91.9	94.2	96.5	96.6	97.1	97.4
N Familial/Congenital Neoplasms	-	-	-	-	-	-	-	-	-	-
O Endocrine/Metabolic Disorders	70.6	69.7	63.3	56.7	55.8	53.2	51.8	52.0	49.4	49.6
P Diseases of the Blood & Blood Forming Organs	81.8	87.7	91.1	90.6	86.9	80.0	74.1	65.5	60.0	59.3
Q Other Diseases of the Central and Peripheral Nervous System	45.1	46.4	42.0	39.0	37.5	37.5	36.3	31.1	32.8	33.4
R Other Diseases of the Eye	28.2	27.5	24.7	25.0	26.9	28.1	30.1	30.2	32.0	32.0
S Hearing Deficiency	9.9	10.9	9.7	9.4	7.4	9.0	12.3	12.5	12.8	13.3
T Other Diseases of the Heart & Circulatory System	84.1	79.7	80.9	82.9	80.8	80.3	80.3	83.5	81.7	80.3
U Other Diseases of the Gastrointestinal System	44.5	43.8	42.1	39.4	38.7	40.7	40.3	38.9	37.7	38.3
V Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	*	*
W Other Fetal/Placental Anomalies	*	-	-	-	-	-	-	-	*	*
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-
Y Maternal Exposures Affecting Fetus	34.6	29.0	29.9	27.1	29.8	29.6	33.6	35.0	32.4	36.2
One or More Reportable Diagnosis	47.0	46.6	46.1	45.1	43.6	42.8	42.3	41.0	39.5	38.1

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 June 30, 2009

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 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
A Congenital Anomalies of the Central Nervous System	145.0	139.5	137.0	124.2	124.7	123.8	123.8	122.8	120.5	124.9
A01 Anencephalus	956.5	956.5	956.5	960.0	956.5	962.0	940.5	923.9	913.0	894.1
A02 Spina Bifida w/o Anencephaly	94.7	96.3	98.2	88.1	93.4	90.3	81.5	75.5	68.2	69.2
A03 Hydrocephalus w/o Spina Bifida	136.0	136.2	129.6	119.3	125.5	123.9	134.5	133.2	140.7	156.4
A04 Encephalocele	300.0	282.4	266.7	219.2	238.8	209.0	214.3	171.1	183.9	204.8
A05 Microcephalus	102.0	90.7	94.8	74.7	71.4	81.5	79.4	80.9	74.5	82.3
A99. All Other CNS Anomalies	118.4	110.0	111.3	97.8	102.0	101.1	102.2	103.8	102.9	106.4
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
B Congenital Anomalies of the Eye	30.6	28.1	29.4	24.7	23.3	26.4	25.0	26.9	27.4	29.0
B01 Anophthalmos/Microphthalmos	130.1	90.2	89.6	89.6	99.3	114.6	109.8	113.2	116.6	111.1
B02 Congenital Cataract	*	*	*	*	*	*	34.5	34.0	38.3	47.4
B03 Aniridia	-	-	-	-	-	-	-	-	*	*
B99. All Other Congenital Anomalies of the Eye	22.0	22.5	23.7	19.3	18.0	18.8	16.7	19.8	20.3	22.7
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
C Congenital Anomalies of the Ear, Face and Neck	46.9	45.7	43.6	41.8	44.7	44.5	39.6	39.1	43.7	40.8
C01 Anotia/Microtia	*	*	*	*	*	*	*	*	*	*
C99. All Other Congenital Anomalies of the Ear, Face and Neck	45.6	45.1	43.9	41.3	44.3	44.3	39.1	38.6	43.2	40.8

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 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
D Congenital Anomalies of the Heart and Circulatory System	88.8	85.9	84.2	83.8	82.7	81.5	81.4	77.5	74.7	71.2
D01 Common Truncus	206.2	188.1	178.2	161.3	171.4	163.5	133.3	141.4	138.6	133.3
D02 Transposition of Great Vessels	180.9	186.7	169.9	170.3	164.9	158.7	147.1	145.3	124.0	128.5
D03 Tetralogy of Fallot	120.3	122.0	131.7	130.1	120.5	114.7	117.6	116.1	106.5	88.0
D04 Ventricular Septal Defect	72.2	68.2	66.3	68.3	66.5	65.6	66.1	69.3	64.4	60.7
D05 Atrial Septal Defect	71.7	69.2	65.5	63.4	64.5	63.4	62.8	59.6	58.4	55.1
D06 Endocardial Cushion Defect	211.8	177.2	168.4	160.6	154.6	131.2	118.8	123.3	125.9	114.4
D07 Pulmonary Valve Atresia and Stenosis	65.4	70.5	70.8	75.3	79.1	80.5	78.0	71.1	65.3	62.0
D08 Tricuspid Valve Atresia and Stenosis	252.5	226.8	181.8	204.1	168.1	153.2	128.0	116.7	112.0	84.7
D09 Ebstein's Anomaly	*	*	*	134.0	130.4	149.7	147.1	148.8	139.2	128.8
D10 Aortic Valve Stenosis	144.5	163.6	130.7	117.0	131.6	120.0	86.5	70.1	73.2	88.1
D11 Hypoplastic Left Heart Syndrome	441.8	445.2	463.2	458.3	449.2	429.0	393.1	347.7	310.4	311.4
D12 Patent Ductus Arteriosus	109.3	101.7	96.4	96.4	93.5	93.2	93.6	93.3	94.1	90.1
D13 Coarctation of Aorta	152.3	144.6	144.2	134.1	120.4	120.2	107.9	113.4	109.7	124.7
D14 Pulmonary Artery Anomalies	67.8	65.6	68.6	69.0	71.0	62.3	62.8	59.2	55.7	47.1
D99. All Other Congenital Anomalies of the Heart and Circulatory System	116.7	114.7	112.4	111.0	110.5	109.8	110.7	104.9	102.0	97.4
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
E Congenital Anomalies of the Respiratory System	178.2	186.7	194.2	186.9	162.6	151.8	141.8	129.3	115.5	99.4
E01 Lung Agenesis/Hypoplasia	699.8	691.8	678.6	670.2	633.3	597.6	546.4	494.2	465.3	424.0
E02 Choanal Atresia	67.8	78.3	78.9	75.0	83.3	85.1	50.7	*	*	*
E99. All Other Congenital Anomalies of the Respiratory System	63.7	64.3	69.2	64.3	56.7	61.6	59.7	60.8	56.6	52.3
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
F Cleft Palate and Cleft Lip	66.3	59.2	59.3	52.1	48.5	51.9	57.8	65.2	67.3	72.7
F01 Cleft Palate	73.7	69.6	67.9	61.2	53.2	58.8	68.6	71.4	66.7	65.6
F02 Cleft Lip w and w/o Cleft Palate	61.9	52.9	54.0	46.9	45.8	48.0	51.9	62.0	67.7	76.5

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 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
G Congenital Anomalies of the Upper Alimentary Canal/ Digestive System	44.3	45.4	44.4	42.7	41.5	41.9	43.3	44.7	46.3	45.5
G01 Esophageal Atresia/ Tracheoesophageal Fistula	110.5	90.9	103.9	105.3	107.7	108.1	109.8	122.6	124.5	116.7
G02 Rectal and Large Intestinal Atresia/Stenosis	108.1	115.7	110.8	94.9	77.7	72.7	69.1	72.7	73.5	80.4
G03 Pyloric Stenosis	4.1	4.9	*	6.1	7.6	7.5	9.0	9.4	9.9	7.1
G04 Hirshsprung's Disease (congenital megacolon)	32.5	32.4	32.7	*	29.5	30.0	33.3	30.3	27.8	32.8
G05 Biliary Atresia	51.7	59.8	73.4	72.7	76.9	65.9	65.2	65.2	69.0	72.3
G99. Other Cong. Anomalies of Upper Alimentary Canal / Digestive System	57.0	61.2	61.2	57.1	57.8	59.6	59.7	60.8	62.6	61.6
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
H Congenital Anomalies of the Genital and Urinary Systems	42.9	39.9	37.0	34.3	32.0	32.0	33.2	33.0	32.1	31.9
H01 Renal Agenesis/Hypoplasia	254.2	236.5	224.5	210.8	192.3	192.0	208.3	205.9	200.0	203.9
H02 Bladder Exstrophy	*	*	*	*	*	*	*	*	*	*
H03 Obstructive Genitourinary Defects	46.0	41.2	34.5	37.4	31.5	33.4	36.9	38.3	38.7	38.1
H04 Hypospadias & Epispadias	9.9	9.4	5.9	6.7	9.9	12.2	12.5	16.2	18.2	18.6
H99. All Other Congenital Anomalies of the Genital & Urinary Systems	36.9	34.9	33.6	31.0	29.3	29.8	30.2	30.1	28.9	29.2
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
I Congenital Anomalies of the Musculoskeletal System	41.3	39.3	37.7	36.4	34.0	31.2	31.3	32.5	32.0	30.6
I01 Upper Limb Reduction Deformities	80.3	82.6	71.4	56.3	56.9	42.5	38.5	60.3	68.1	76.5
I02 Lower Limb Reduction Deformities	119.4	117.2	113.6	78.7	86.6	84.6	44.1	59.3	51.5	58.4
I03 Gastroschisis/Omphalocele	120.1	130.1	135.7	135.2	129.1	124.0	123.7	109.7	111.9	111.9
I04 Congenital Hip Dislocation	14.3	13.8	11.7	10.1	10.9	10.8	7.3	7.5	7.9	6.3
I05 Diaphragmatic Hernia	341.2	316.7	311.5	312.8	284.0	277.8	286.9	286.3	291.5	263.6
I99. All Other Congenital Anomalies of the Musculoskeletal System	34.6	32.1	30.0	29.1	27.2	25.0	24.8	26.8	26.4	25.0

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 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Congenital Anomalies (740 - 759)

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
J Congenital Anomalies of the Integument	16.9	17.3	14.6	15.6	17.0	17.3	18.1	17.9	16.2	13.5
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
K Chromosomal Anomalies	170.9	163.0	167.1	179.1	178.5	174.9	184.2	181.5	183.4	165.8
K01 Trisomy 13	680.4	647.1	671.1	730.8	733.3	760.6	782.6	802.8	786.7	746.3
K02 Down Syndrome	84.0	79.8	83.2	86.3	92.8	88.3	95.8	95.2	92.4	80.5
K03 Trisomy 18	861.4	835.1	825.2	813.7	794.1	740.4	708.3	705.9	694.4	694.4
K99. All Other Chromosomal Anomalies	94.4	99.2	109.5	134.4	142.1	146.0	164.8	160.2	179.5	163.9
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
L Other and Unspecified Congenital Anomalies	144.3	154.3	150.8	135.7	118.5	106.8	104.0	101.4	93.5	93.9

Table 21
Mortality Rates of Michigan Children with Reported Birth Defects
by Detailed Diagnostic Code Group and Birth Year,
Michigan Resident Children Born in Michigan During 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
M Infectious Conditions Occurring in the Perinatal Period	63.1	66.3	71.0	79.8	91.9	94.2	96.5	96.6	97.1	97.4
M01 Syphilis	25.6	27.7	22.7	*	*	*	*	*	*	*
M02 Other Infections	102.1	96.1	93.5	99.2	111.4	108.7	110.6	106.0	105.5	104.7
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
N Familial/Congenital Neoplasms	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
O Endocrine/Metabolic Disorders	70.6	69.7	63.3	56.7	55.8	53.2	51.8	52.0	49.4	49.6
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
P Diseases of the Blood & Blood Forming Organs	81.8	87.7	91.1	90.6	86.9	80.0	74.1	65.5	60.0	59.3
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
Q Other Diseases of the Central and Peripheral Nervous System	45.1	46.4	42.0	39.0	37.5	37.5	36.3	31.1	32.8	33.4
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
R Other Diseases of the Eye	28.2	27.5	24.7	25.0	26.9	28.1	30.1	30.2	32.0	32.0
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
S Hearing Deficiency	9.9	10.9	9.7	9.4	7.4	9.0	12.3	12.5	12.8	13.3
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
T Other Diseases of the Heart & Circulatory System	84.1	79.7	80.9	82.9	80.8	80.3	80.3	83.5	81.7	80.3

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 1992-2006,
Cases Diagnosed within One Year from Birth
Moving Six-year Mortality Rates
(Continued)

Other Reportable Conditions

Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
U Other Diseases of the Gastrointestinal System	44.5	43.8	42.1	39.4	38.7	40.7	40.3	38.9	37.7	38.3
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
V Other Diseases of the Genital and Urinary Systems	*	*	*	*	*	*	*	*	*	*
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
W Other Fetal/Placental Anomalies	*	-	-	-	-	-	-	-	*	*
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
X Other Musculoskeletal System Diseases	-	-	-	-	-	-	-	-	-	-
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
Y Maternal Exposures Affecting Fetus	34.6	29.0	29.9	27.1	29.8	29.6	33.6	35.0	32.4	36.2
Y01 Fetal Alcohol Syndrome	57.0	47.4	53.2	40.0	38.7	*	*	*	*	*
Y99. Other Maternal Exposures Affecting the Fetus	32.4	27.2	27.6	25.9	29.0	29.6	33.7	34.6	32.4	36.2
Diagnostic Grouping	1992 to 1997	1993 to 1998	1994 to 1999	1995 to 2000	1996 to 2001	1997 to 2002	1998 to 2003	1999 to 2004	2000 to 2005	2001 to 2006
One or More Reportable Diagnosis	47.0	46.6	46.1	45.1	43.6	42.8	42.3	41.0	39.5	38.1

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 June 30, 2009

Last Updated on September 29, 2009

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	745-746
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	747 - 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
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 - 237.72
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, 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