

Updated Birth Defects Prevalence Data, 2013-2017

Introduction

This newsletter is based on data collected by the Michigan Birth Defects Registry (MBDR) from 2013-2017. The registry covers more than 1,050 diagnosis codes for birth defects reportable for children from birth through 2 years of age. This newsletter showcases the 15 most prevalent birth defects during this 5-year period as well as which birth defects were more likely to occur alone, and which were more likely to have co-occurring birth defects.

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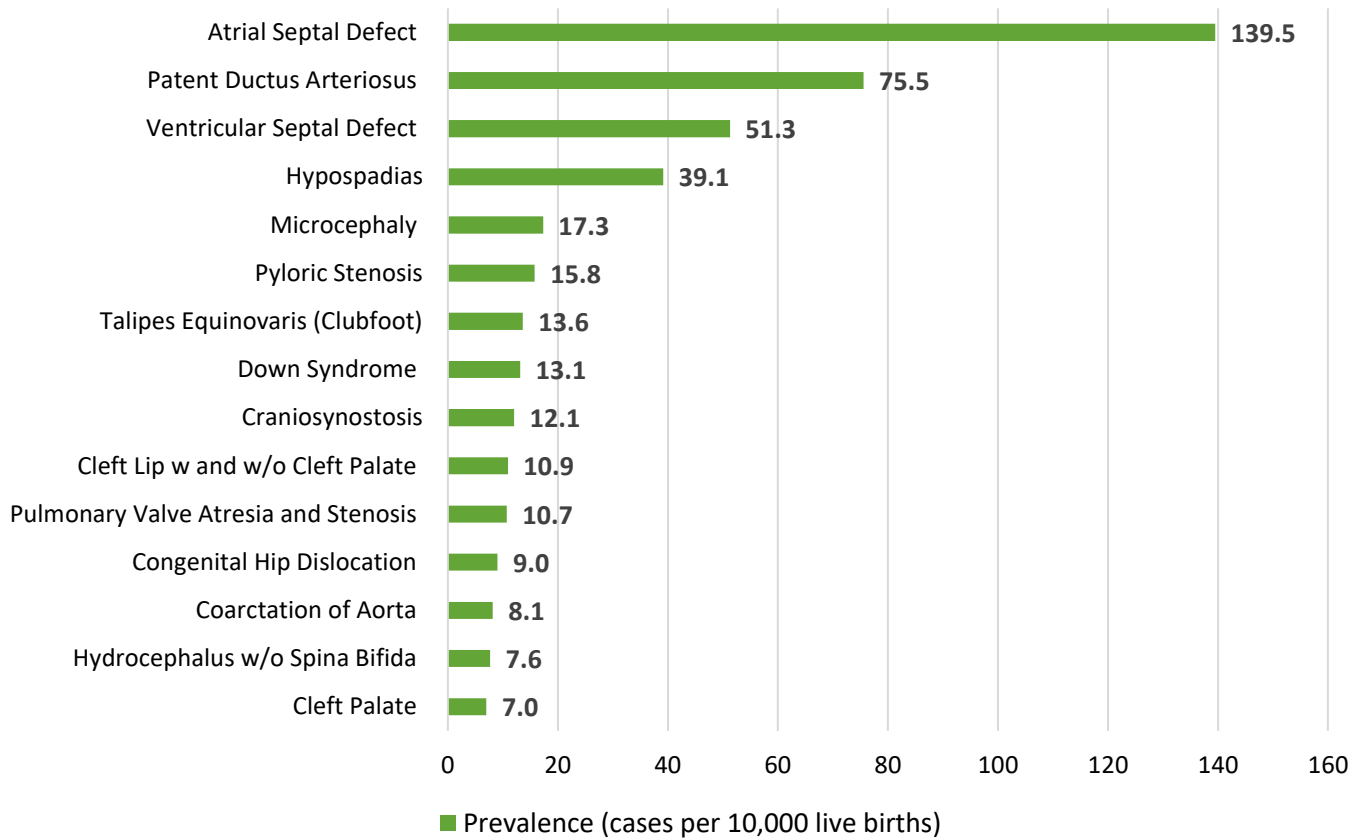
Public Health Impact of Birth Defects

Birth defects have a serious impact on the health of children in Michigan and the entire United States. During 2017, there were 12,640 children with birth defects reported to the MBDR in their first year of life.¹ This corresponds to a prevalence of 1,133.6 per 10,000 resident live births, or approximately 11.3% of the 111,507 Michigan newborns in 2017.²

Birth defects contribute significantly to infant and child mortality. The case fatality rate for children born in 2017 with a birth defect was 24.1 deaths per 1,000 births. This compares to an infant death rate of 6.8 per 1,000 live births for all infants born in Michigan during the same year. Birth defects also significantly contribute to infant and child morbidity and long-term disability. Compared to children without birth defects, children with birth defects are more likely to experience hospitalizations as well as neurologic and cognitive impairments.³



Figure 1. 15 Most Prevalent Birth Defects 2013-2017



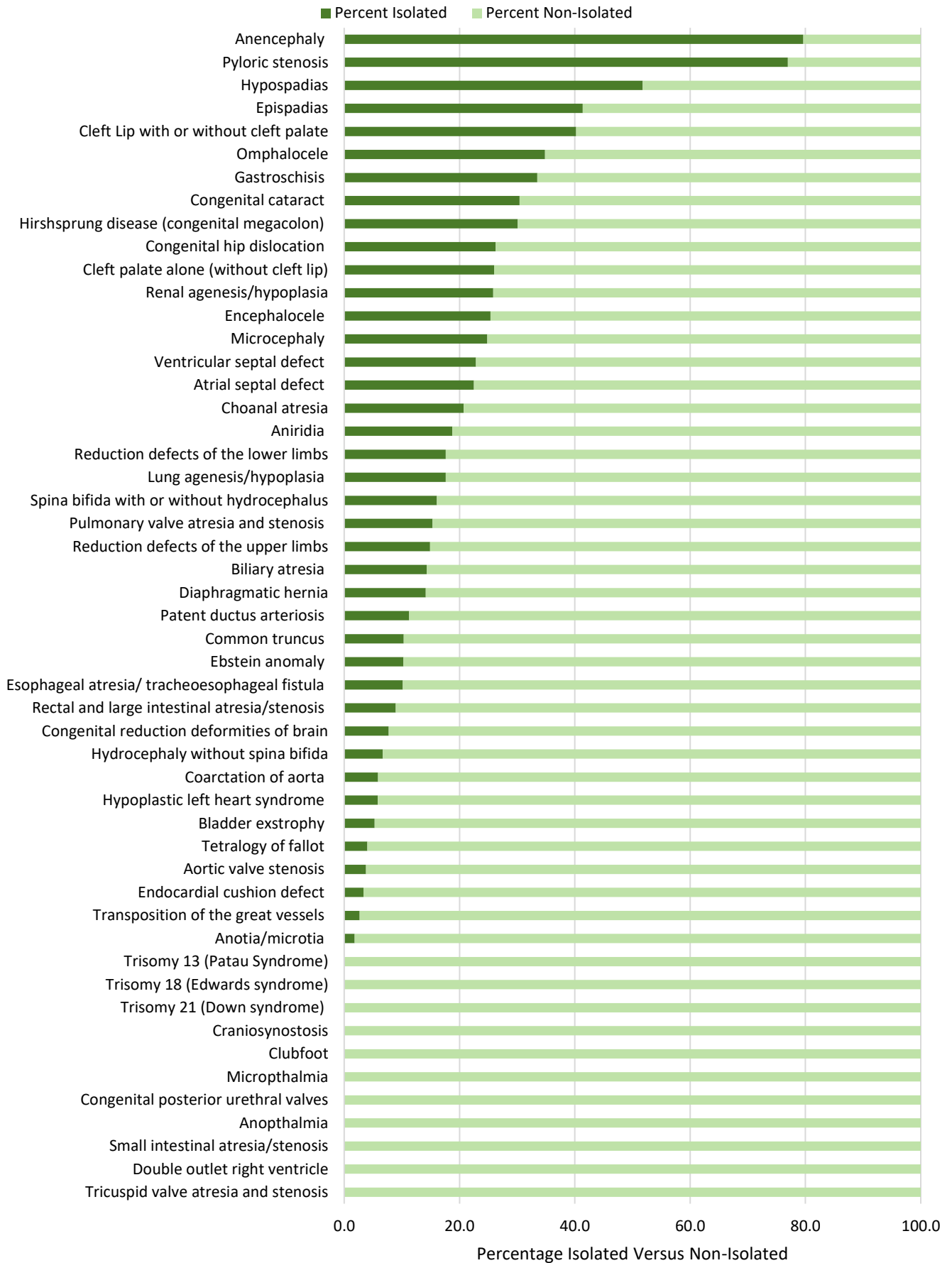
Most Prevalent Birth Defects

Figure 1 displays the 15 most prevalent birth defects occurring in Michigan from 2013 to 2017. The top three most prevalent birth defects were heart defects: atrial septal defect, patent ductus arteriosus, and ventricular septal defect. Hypospadias, a condition in males where the urethral opening is misplaced, was the fourth most prevalent defect. Among a few of the more commonly known birth defects, Down syndrome was found to occur among 1 in 761 live births, cleft lip (with and without cleft palate) occurred 1 in 915 live births, and cleft palate (without cleft lip) occurred 1 in 1,430 live births.

Isolated Versus Non-Isolated Birth Defects

Many babies born with birth defects have more than one diagnosed birth defect. Within the MBDR, 27.9% of the cases have more than one birth defect reported (i.e. non-isolated cases), and 72.0% of cases are isolated, that is, the child has only one reportable birth defect. Figure 2, on the following page, shows which birth defects are more likely to be isolated rather than associated with another birth defect. The birth defect with the highest percentage of isolated cases was anencephaly, a neural tube defect that causes the absence of a major portion of the brain and skull, at 79.6%, followed by pyloric stenosis, a narrowing of the tube where the stomach connects to the small intestine, at 76.9%. Chromosomal disorders are not considered isolated birth defects, since they result in multiple birth defects in an individual. Examples of these are Trisomy 13, Trisomy 18, and Trisomy 21 (more commonly known as Down syndrome), which are also shown in Figure 3 on the next page.

Figure 2. Percent of Isolated and Non-Isolated Commonly Reported Birth Defects in Michigan, 2013-2017



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The Michigan Monitor is online:

URL: Michigan.gov/Mchepi

MBDR reporting:

URL: Michigan.gov/Mbdr

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if you have any questions
related to the data
presented in this
newsletter.

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MDBR Data Limitations and Cautions

- Data are based on passive reporting which means MBDR relies on facilities to identify and report cases of birth defects. Not all facilities report cases as completely and timely as would be the ideal.
- 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 overcount of the number of cases.
- There is presently no exchange of data with neighboring states relative to children born with birth defects. Children diagnosed in other states that reside in Michigan may be missed.

Meet our New Staff Member!

Erin Cooper is the new Birth Defects Quality Assurance Unit Analyst. She received her undergraduate degree in health from Sam Houston State University in Huntsville, Texas and received a Master of Public Health from the University of Michigan. Before coming to the MDRB, Erin worked in the data management unit for Vital Records with birth, fetal death, and paternity data. You can contact Erin with questions via email at CooperE5@Michigan.gov. Fun Fact: Erin was part of Sam Houston State University's NCAA Championship Bowling team in 2014.

Resources for Health Professionals and Families

Michigan

- [Children's Special Health Care Services](#) (CSHCS) Program
URL: Michigan.gov/Cshcs
- [Family to Family Information Center](#) URL: f2fmichigan.org
- [Michigan Association of Genetic Counselors](#) URL: MAGCinc.org

National

- [Centers for Disease Control and Prevention, National Center on Birth Defects and Disabilities](#) URL: www.CDC.gov/NCBDDD/birthdefects
- [March of Dimes](#) URL: <http://www.marchofdimes.org>
- [National Birth Defects Prevention Network \(NBDPN\)](#)
URL: www.nbdpn.org

References

1. Michigan birth defects tables, MDHHS, Division of Vital Records and Health Statistics, 2017.
2. Michigan resident live birth files, MDHHS, Division of Vital Records and Health Statistics, 2017.
3. Mai, C. T., Isenburg, J. L., Canfield, M. A., Meyer, R. E., Correa, A., Alverson, C. J., Lupo, P. J., Riehle-Colarusso, T., Cho, S. J., Aggarwal, D., Kirby, R. S., & National Birth Defects Prevention Network (2019). National population-based estimates for major birth defects, 2010-2014. Birth defects research, 111(18), 1420-1435.
<https://doi.org/10.1002/bdr2.1589>