

## Updated Birth Defects Prevalence Data, 2015-2019

### Introduction

This newsletter is based on data collected through the Michigan Birth Defects Registry (MBDR) for 2015-2019 births. The registry covers reportable birth defects for children (more than 1,050 diagnosis codes) from birth through 2 years of age, thus this newsletter includes birth defects reports for 2019 births through 2021.

This newsletter showcases the 15 most prevalent birth defects during this five-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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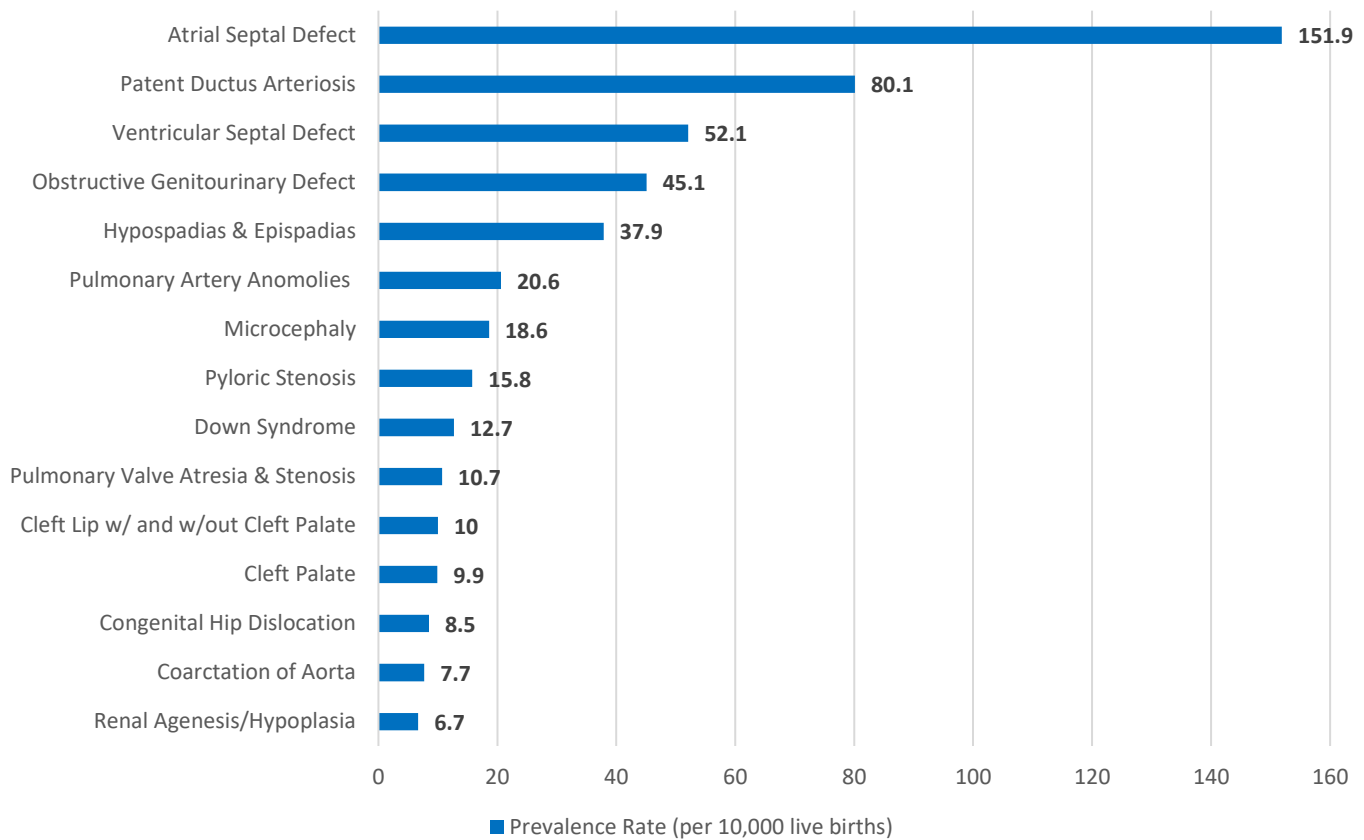
### Public Health Impact of Birth Defects

Birth defects have a serious impact on the health of children in Michigan and the entire United States. During 2019, there were 15,561 children with birth defects reported to the MBDR in their first year of life.<sup>1</sup> This corresponds to a prevalence of 1,442.5 per 10,000 resident live births, or approximately 14.4% of the 107,872 Michigan newborns in 2019.<sup>2</sup>

Birth defects contribute significantly to infant and child mortality. The case fatality rate for children born in 2019 with a birth defect was 13.2 deaths per 1,000 births.<sup>1</sup> This compares to an infant death rate of 6.4 per 1,000 live births for all infants born in Michigan during the same year.<sup>3</sup> 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.<sup>4</sup>



**Figure 1. 15 Most Prevalent Birth Defects, 2015-2019**



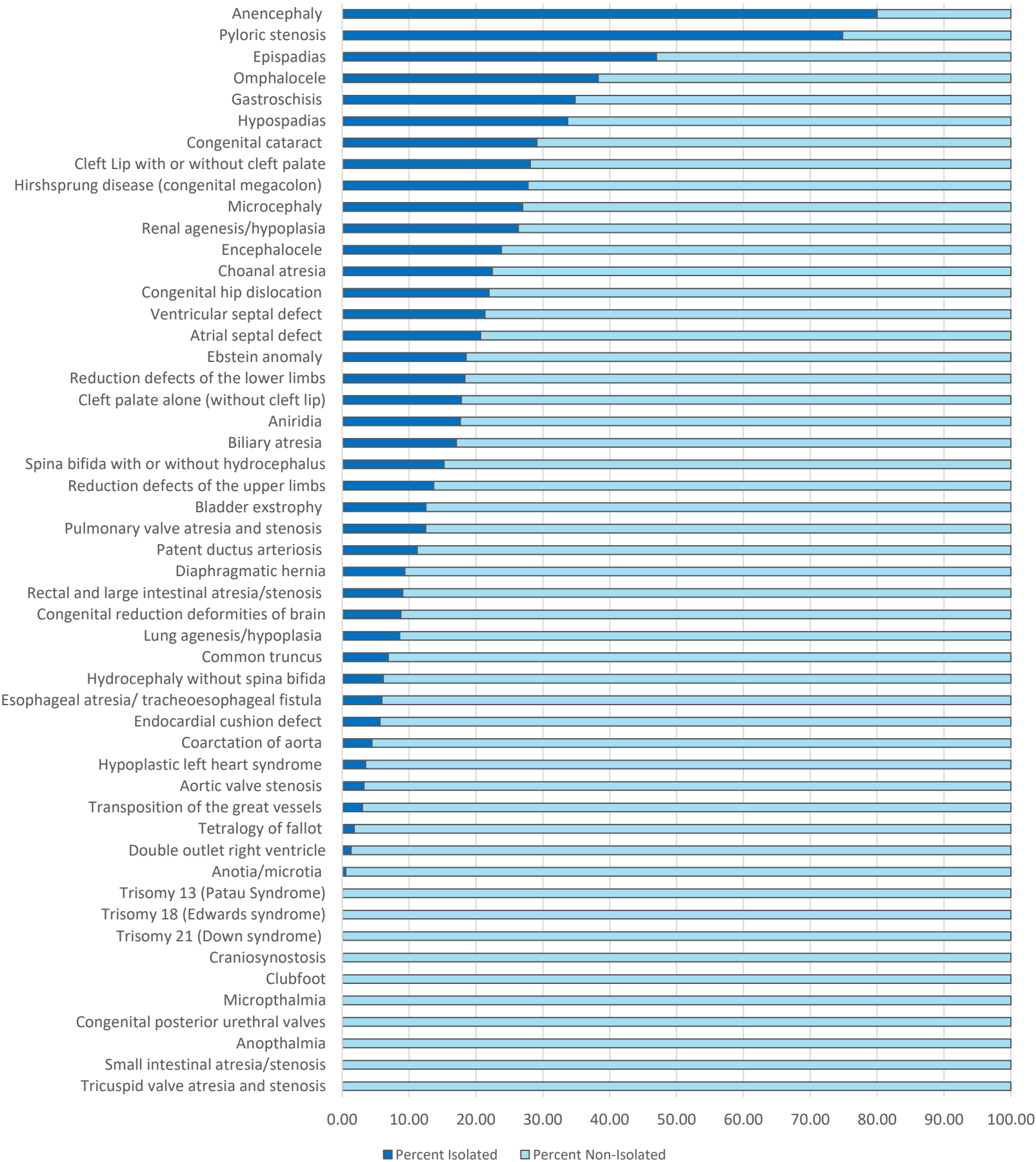
### **Most Prevalent Birth Defects**

Figure 1 displays the 15 most prevalent birth defects occurring in Michigan from 2015 to 2019. The top three most prevalent birth defects were heart defects: atrial septal defect, patent ductus arteriosus, and ventricular septal defect. Obstructive genitourinary defect, where the urinary tract structures narrow/are missing, was the fourth most common defect observed. Among some commonly known birth defects, Down syndrome occurred in 1 in 787 live births, cleft palate occurred in 1 in 1,011 live births, and cleft lip (with and without cleft palate) occurred 1 in every 997 live births.

### **Isolated Versus Non-Isolated Birth Defects**

Many babies born with birth defects have more than one diagnosed birth defect. Within the MBDR, 29.8% of the cases have more than one birth defect reported (i.e., non-isolated cases), and 70.2% 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 80.0%, followed by pyloric stenosis, a narrowing of the tube where the stomach connects to the small intestine, at 74.8%. Chromosomal disorders are not considered isolated birth defects, since they result in multiple birth defects in an individual. Examples of these are trisomies, affecting chromosomes 13 (Patau syndrome), 18 (Edwards' syndrome) and 21 (Down syndrome), which are also shown in Figure 2 on the next page.

**Figure 2. Percent of Isolated and Non-Isolated Commonly Reported Birth Defects in Michigan, 2015-2019**



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The Michigan Monitor is online:  
[Birth Defects & EHDI Website](http://Michigan.gov/BirthDefectsInfo)

MBDR reporting:

URL: [Michigan.gov/Mbdr](http://Michigan.gov/Mbdr)

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

The Michigan Department of  
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## **MBDR Data Limitations and Cautions**

- Data are based on passive reporting which means MBDR relies on facilities to identify and report cases of birth defects. Getting all facilities to report complete and timely data can be a challenge.
- 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 Members!**

Kenneth Hanson is the new Birth Defects and Family Planning epidemiologist. He received his Master of Public Health from Grand Valley State University. Before coming to MDHHS, Kenneth worked in law enforcement as a police dispatcher for five years. Kristina Ottenwess is the new birth defects program coordinator. She received her Master of Public Health degree from the University of Michigan. Prior to joining MDHHS, Kristina worked at the Oakland County Health Division for seven years.

## **Resources for Health Professionals and Families**

### **Michigan:**

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

### **National:**

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

## **References**

1. Michigan Birth Defects Registry, Division for Vital Records and Health Statistics, Michigan Department of Health and Human Services, 2019.
2. Michigan Resident Live Birth File, Division for Vital Records and Health Statistics, Michigan Department of Health and Human Services, 2019.
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4. 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>