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Birth Defects in Hamilton County, Ohio

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Fatal birth defects are one of the leading causes of infant death in Hamilton County.

Birth defects, or "congenital anomalies," include a broad group of issues ranging from chromosomal abnormalities like down syndrome to single gene disorders such as sickle cell anemia to malformations and deformations of many types. Most birth defects are not fatal, but for the purposes of this report we are focused on the most severe types which contribute to our infant mortality crisis in Hamilton County.

Cause of Infant Death 2012-2016*

- **60.3%** Preterm Birth
- **13.2%** Sleep-related Deaths
- **18.1%** Birth Defects
- **8.4%** Other
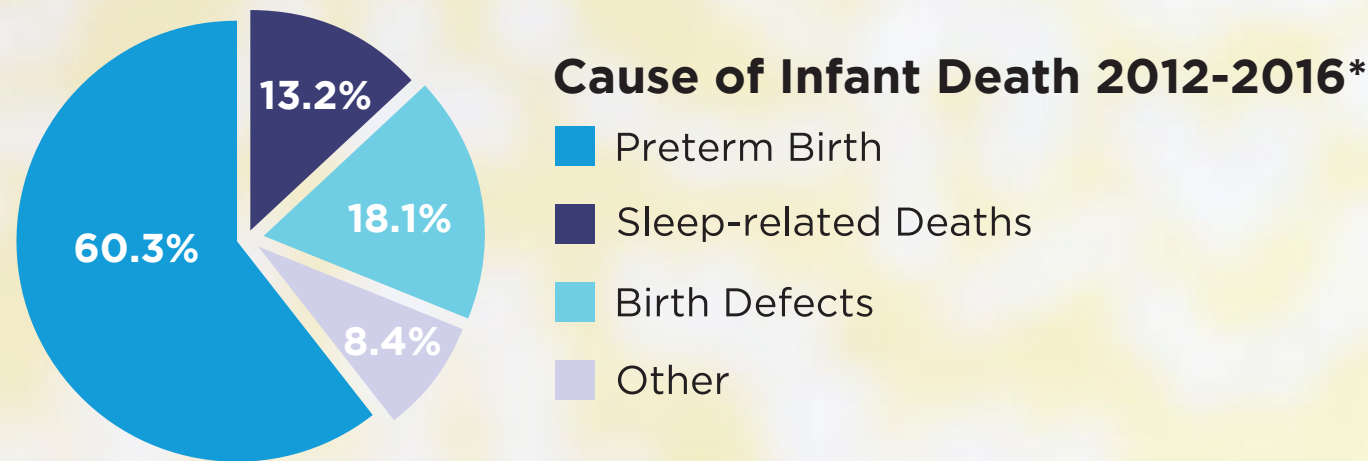
486 babies died in Hamilton County from 2012-2016.

88 of these babies died from a fatal birth defect (about 18 per year).

Read our other reports on Preterm Birth and Sleep-Related Deaths at cradlecincinnati.org.

*Source: Hamilton County Fetal and Infant Mortality Review

Birth defects can impact any system in the human body. In Hamilton County and the U.S., heart defects are responsible for the largest number of infant deaths each year.

Birth Defect-related Infant Deaths by Type
United States vs. Hamilton County

	United States 2011-2014 Deaths per 10,000	Hamilton County 2012-2016 Deaths per 10,000	Total Number of Hamilton County Deaths From This Cause 2012-2016
Heart & Circulatory System	3.31	3.30	18 deaths
Brain & Nervous System*	1.76	2.93	16 deaths
Musculoskeletal System	1.31	1.47	8 deaths
Respiratory System	0.88	1.10	6 deaths
Urinary System	1.16	0.92	5 deaths
Digestive System	0.16	0.18	1 death
Chromosomal Abnormalities, Not Otherwise Classified	2.36	2.39	13 deaths
Other Congenital Malformations	1.38	1.10	6 deaths
All Categorized Types	**12.33**	**13.58**	**73 deaths**

*P<0.05. Source: 2011-2014 CDC Wonder; 2012-2016 Hamilton County FIMR. An additional 15 birth defect-related deaths in Hamilton County do not fit into these comparison groups.

The birth defect rates in our community closely follow rates in the rest of the United States with one minor exception: nervous system defects. With fatal nervous system defects, Hamilton County averages one to two more deaths per year than expected, if matching the national average.

Each of these lives lost is part of our infant mortality crisis, yet birth defect deaths are not a primary driver of our higher than normal infant death rates.

Who are these babies?

Babies born with birth defects are born into all types of families. They are from all over our city and represent every socio-economic background. Unlike other causes of infant death (such as preterm birth), there is no racial disparity in the rate of birth defect deaths in Hamilton County.

However, these babies are more likely to be born to mothers over the age of 35 and/or those who smoke during pregnancy.

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We analyzed local deaths by neighborhood; however, numbers were too small to identify discernible trends. While some parts of town have more birth defect-related deaths than others over the past five years, this is likely due to simple chance. This contrasts with Hamilton County's preterm story where we know that risk varies greatly by community. We will continue to monitor neighborhood-based data to better understand if geography plays a role. The following neighborhoods experienced infant losses due to birth defects from 2012-2016:

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ADDYSTON	GREEN TOWNSHIP	SHARONVILLE
ANDERSON TOWNSHIP	HYDE PARK	SOUTH FAIRMOUNT
ARLINGTON HEIGHTS	LINCOLN HEIGHTS	SPRINGDALE
AVONDALE	LOVELAND	SPRINGFIELD TOWNSHIP
BOND HILL	MADEIRA	ST. BERNARD
CHEVIOT	MIAMI TOWNSHIP	SYCAMORE TOWNSHIP
COLERAIN TOWNSHIP	MONTGOMERY	SYMMES TOWNSHIP
COLLEGE HILL	MT. AUBURN	THE VILLAGES AT ROLL HILL
COLUMBIA TOWNSHIP	MT. HEALTHY	WALNUT HILLS
CUF	MT. WASHINGTON	WEST END
DELHI TOWNSHIP	NORTH AVONDALE	WESTWOOD
EAST PRICE HILL	NORTHSIDE	WHITEWATER TOWNSHIP
ELMWOOD PLACE	NORWOOD	WINTON HILLS
EVANSTON	OAKLEY	
FOREST PARK	PLEASANT RIDGE	

*Photo by Jon Willis

Uncommonly Loved

Sarah and Jake Armentrout's baby boy was diagnosed with a fatal birth defect at their 20-week ultrasound. With two young children at home, Lily and Liam, they couldn't just shut down. Daily life continued.

Friends made meals, offered babysitting for date nights, gave family photography sessions and more. People prayed for the Armentrout family daily and they never felt as though they were enduring the difficult wait alone.

At 35 weeks, Jake and five of Sarah's closest friends huddled in hope as labor progressed. The feeling in the room was holy – sweet Levi lived just 76 minutes, but in those few moments he made a lifetime of impact. His parents and community learned what it meant to share the highest highs and lowest lows with each other.

Today, Lily and Liam wear superhero capes to remember the remarkable feats this family has been through together, and they shower their new sister, Olive, with kisses.
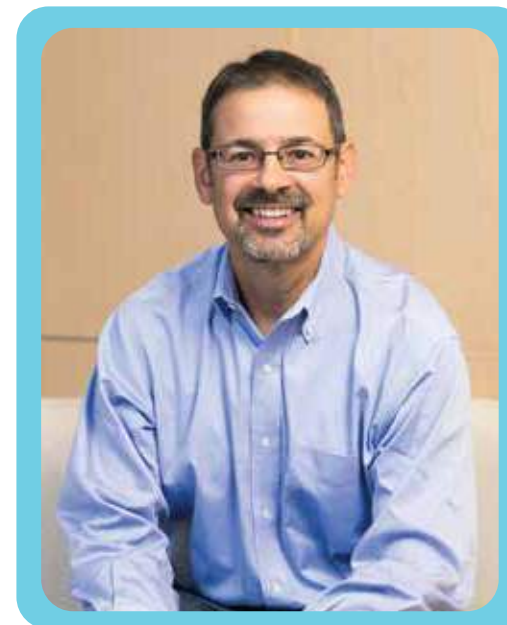
Discovering Hope

For over a decade, Dr. Jim Cnota has worked at Cincinnati Children's Hospital Medical Center in pediatric cardiology. Today, he serves as the director of the hospital's neonatal cardiology service. In this role, he both cares for patients and directs important research in pediatric cardiology. The research has two main areas of focus: to find the causes of heart defects in infants and to find improved avenues of care for these tiny patients.

Because only 30-40 percent of all pediatric heart disease can be attributed to genetic factors, continued research is needed to find the cause of heart problems at birth. Cincinnati Children's serves as a leader in the space as they partner with national research collaboratives. Dr. Cnota's primary motivation comes from bedside interactions with pregnant mothers, infants and young children as they strive to find the best avenues for care together.

*Photo by Nick Smith

4 Ways to Lower Your Risk of Birth Defects

Your health care provider can help you achieve these goals.

1 **Control diabetes**: Poor control of diabetes during pregnancy increases the chance for birth defects and other problems during pregnancy.

2 **Take prenatal vitamins with folic acid:** If a woman has enough folic acid in her body at least one month before and during pregnancy, it can help prevent major birth defects of the developing brain and spine (anencephaly and spina bifida).

3 **Maintain a healthy weight:** A woman who is obese (a BMI of 30 or higher) before pregnancy is at a higher risk for complications during pregnancy. Obesity also increases a pregnant woman's risk of several serious birth defects.

4 **Receive a rubella vaccination:** Some vaccines protect women against infections that can cause birth defects. Having the right vaccinations at the right time can help keep a woman and her baby healthy.

How to prevent birth defects is still mostly unknown. Much more scientific research is needed to help families.

Frequently Asked Questions About Birth Defects

What can I do to reduce birth defects in our county?
What is needed most is more scientific research. Consider a gift to an organization such as the March of Dimes who invest in this work.

Who is at risk for birth defects?
There is a slightly increased risk for moms who are over the age of 35.

Are all birth defects fatal?
Not at all. The vast majority of babies born with congenital anomalies in our community go on to lead healthy lives. To read dozens of inspiring stories of families living with this type of special need, visit the Special Needs Spotlight at thislittlemiggy.com.

Are birth defects hereditary?
Certain conditions such as cystic fibrosis or sickle cell anemia do run in families; however, most are not known to be hereditary.

How do I know if my child is at risk for birth defects?
Talk to your health care provider to best understand your family's risk.

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