



**Public Health**  
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**Butler County**  
General Health District

The Butler County  
Partnership to Reduce  
**infant**  
Mortality  
*Reaching More First Birthdays*



**EVERY BABY MATTERS**

**OEI**

**OHIO INSTITUTE FOR EQUITY IN BIRTH OUTCOMES**

## Butler County Partnership to Reduce Infant Mortality (PRIM)

Ohio Equity Institute

Infant Mortality Quarterly Update

Quarter 4 (July-September 2018)



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## Contact Information

Do you want to get involved with Butler County's Partnership to Reduce Infant Mortality?

Do you have questions about the OEI Quarterly Report?

We would love for you to join in our work!  
Get in touch with by phone or visit our website!

Butler County General Health District  
301 South Third Street  
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Phone  
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Website

[http://health.bcohoio.us/our\\_services/maternal\\_infant\\_health.php](http://health.bcohoio.us/our_services/maternal_infant_health.php)



# Introduction

The Ohio Equity Institute (OEI) began in 2013 and is a partnership between the Ohio Department of Health (ODH) and nine Ohio counties including Butler County. The nine counties in Ohio were selected because they account for a large part of all infant deaths in the State. This partnership exists to improve birth outcomes and reduce the racial disparities in infant deaths. The initiative is designed to strengthen the scientific focus and evidence base for realizing equity in birth outcomes in nine of Ohio's major metropolitan areas.

This report provides background information on birth outcomes and infant mortality in Butler County, current infant mortality interventions in Butler County, and current data trends in infant mortality in the county.

The local infant mortality coalition in Butler County is the Butler County Partnership to Reduce Infant Mortality (PRIM). PRIM was formed in 2014 and is coordinated by the PRIM Lead Team. The Butler County PRIM Lead Team initially chose to focus on CenteringPregnancy™ as an upstream intervention, and smoking cessation as a downstream intervention. Currently, PRIM's intervention projects include the previously discussed interventions as well as a breastfeeding support initiative, a safe sleep initiative, community engagement, and a partnership with the United Way to develop a 2-1-1 Babylink line for pregnancy and infant care needs. These interventions were chosen based on input from the community, data analysis of Butler County's most pressing needs, the community capacity, and a review of infant mortality literature.

Birth and death data notes: These data were provided by the Ohio Department of Health. ODH specifically disclaims responsibility for any analyses, interpretations, or conclusions. All analyses, interpretations, and conclusions were developed by Andrew Schwartz, the OEI PRIM Epidemiologist at the Butler County General Health District. The Ohio Department of Health disclaims responsibility for any findings within this report.

# 2018 Quarterly Infant Mortality Data

Quarterly infant mortality data for this report reflects the OEI grant year (October 1st 2017-September 30th 2018), not a calendar year.

		2017		IMR	2018		IMR
		Infant Deaths	Live Births		Infant Deaths	Live Births	
Quarter2	January	2	352	5.0 per 1000	6	374	8.28 per 1000
	February	2	291	live births	2	330	live births
	March	1	357		1	382	
Quarter3	April	4	365	4.52 per 1000	0	323	5.52 per 1000
	May	0	349	live births	4	388	live births
	June	1	393		2	374	
Quarter4	July	2	409	6.46 per 1000	2	393	11.5 per 1000
	August	3	399	live births	6	449	live births
	September	3	431		6	373	
Quarter1	October	2	391	4.48 per 1000			
	November	1	369	live births			
	December	2	355				

**5.52**

IMR for Quarter 3  
(April-June 2018) of  
2018

**11.5**

IMR for Quarter 4  
(July-September 2018) of  
2018



# Infant Mortality Trends

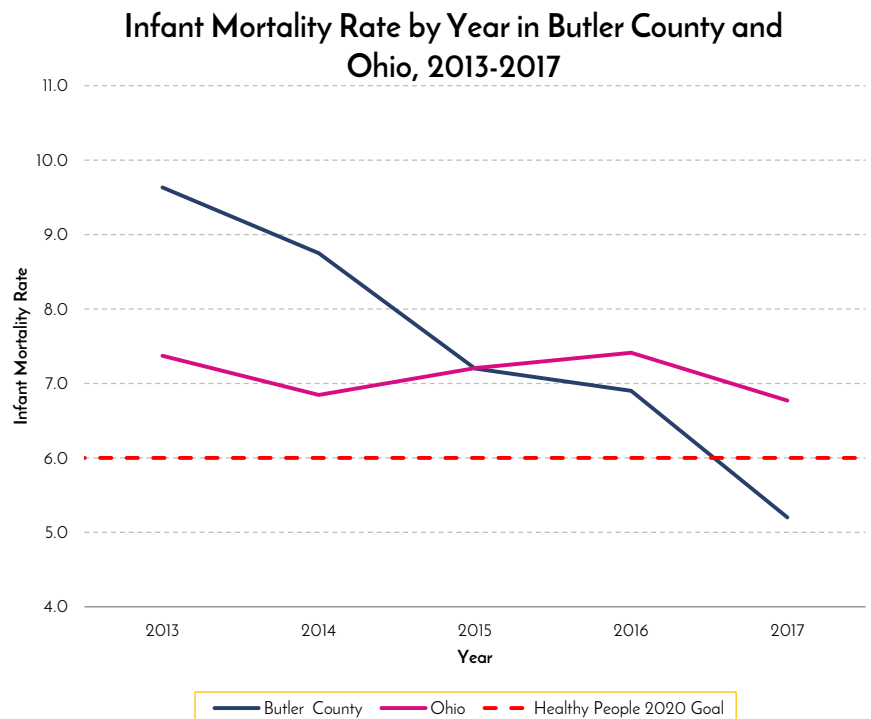
The Infant Mortality Rate (IMR) is widely accepted as one of the most sensitive indicators of the health of a community. An infant death is the death of a baby before his or her first birthday. The Infant Mortality Rate is calculated as the number of infant deaths that occur for every 1,000 live births per year<sup>1-2</sup>.

**6.0**

**Healthy People 2020 Goal for  
Infant Mortality Rate in the  
United States**

**5.2**

**In 2017, Butler County's  
overall IMR was lower than  
the Healthy People 2020 Goal  
for Infant Mortality**



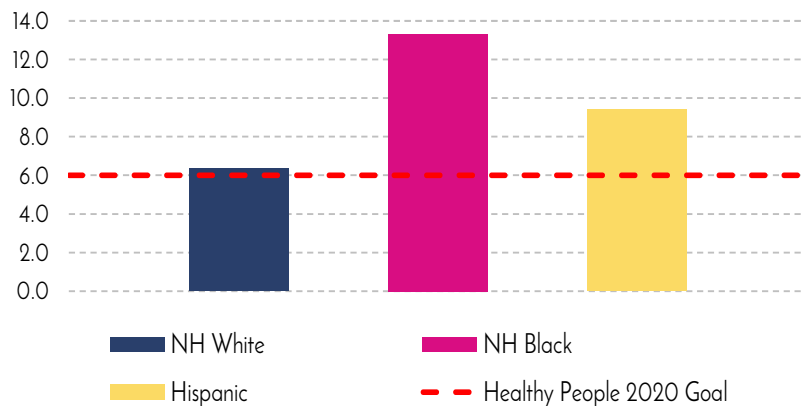
Overall, Butler County's IMR has been decreasing since 2012. In 2017, the IMR was lower than the Healthy People 2020 goal of 6.0 deaths per 1000 live births. The figure above shows the yearly Infant Mortality Rate in Butler County and Ohio from 2013-2017 and the Healthy People 2020 Goal.



# Infant Mortality Rate by Race

Although infant mortality has decreased as a whole in Butler County, there still remains a significant difference in birth outcomes by race and ethnicity. Despite efforts to improve health, the non-Hispanic black IMR is still approximately two times higher than the non-Hispanic white IMR. Data for Quarter 4 in 2018 has shown an increase in Hispanic infant mortality. In September of Quarter 4 alone (July-September 2018), there were 3 hispanic deaths in Butler County, equal to the number of white deaths, black deaths, and other race deaths combined.

**Butler County Infant Mortality Rate by Race, 2013-2017**



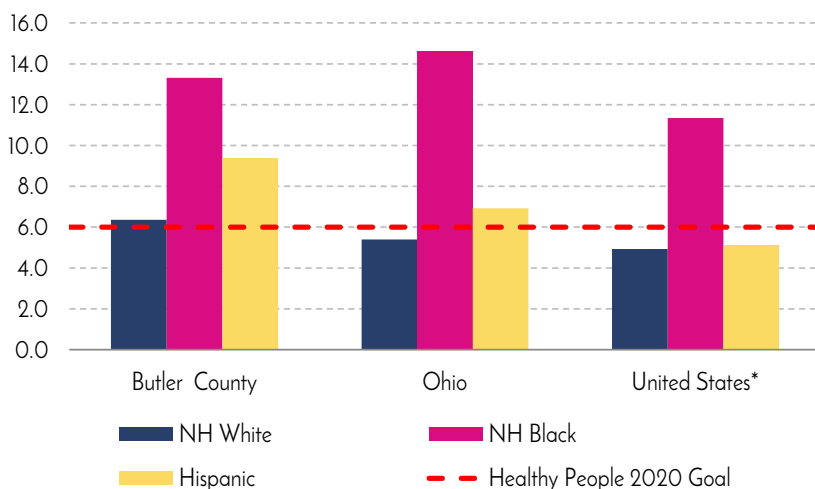
**6.5**

2013-2017  
non-Hispanic **White**  
IMR in Butler County

**13.3**

2013-2017  
non-Hispanic **Black**  
IMR in Butler County

**Butler County, Ohio, US Infant Mortality Rate by Race, 2013-2017**



**14.6**

2013-2017  
non-Hispanic **Black**  
IMR in **Ohio**

**11.4**

2012-2015  
non-Hispanic **Black**  
IMR in the **United States\***

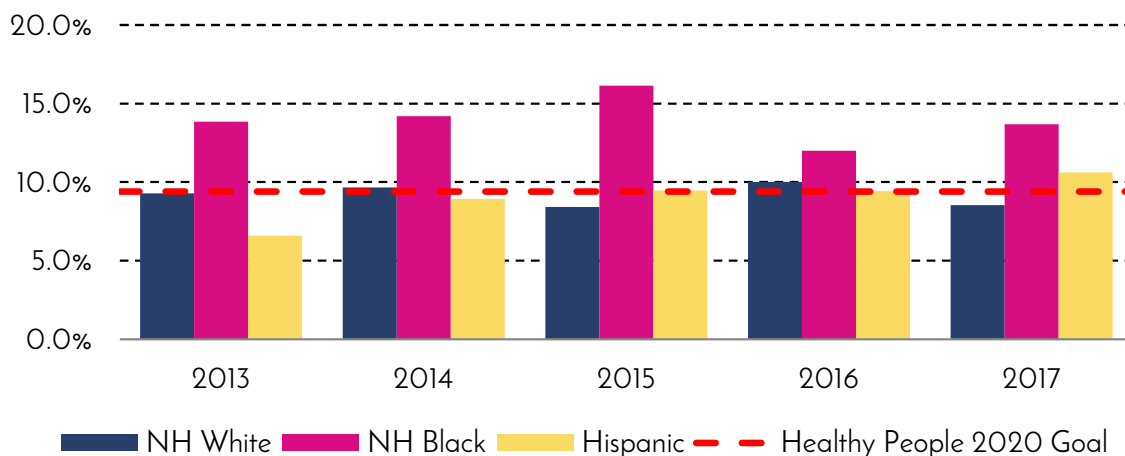
State and Nationwide data show very similar trends in Infant Mortality. In the United States, Non-Hispanic Whites and Hispanics are below the Healthy People 2020 goal of 6.0 infant deaths per 1000 live births. However, in Ohio and Butler County the infant mortality rate for Non-Hispanic Black and Hispanic babies is higher than the Healthy People 2020 Goal.



# Preterm Birth

Preterm birth is defined as the birth of an infant before 37 completed gestational weeks. Preterm Birth is one of the greatest contributors to infant death and disability. The last few weeks of pregnancy are when the baby goes through some of the most important growth<sup>3-4</sup>. The figure below shows the preterm birth rate in Butler County by race from 2013-2017. Preterm Birth rates have remained relatively steady overall from 2013-2017 in Butler County. There is a disparity in Black preterm birth rates, which are consistently higher than other races, and from 2013-2017 showed an upward trend. In 2017, the preterm birth rate for non-Hispanic white babies in Butler County (8.5%) was lower than the healthy people 2020 goal (9.4%). The preterm birth rate for non-Hispanic Black babies (13.7%) and Hispanic babies (10.6%) in Butler County were both higher than the Healthy People 2020 Goal (9.4%)

## Butler County Preterm Birth Rate by Race, 2013-2017



**14.0%**

2013-2017 non-Hispanic  
**Black** Preterm  
Birth Rate in Butler  
County

**9.2%**

2013-2017 non-Hispanic  
**White** Preterm  
Birth Rate in Butler  
County

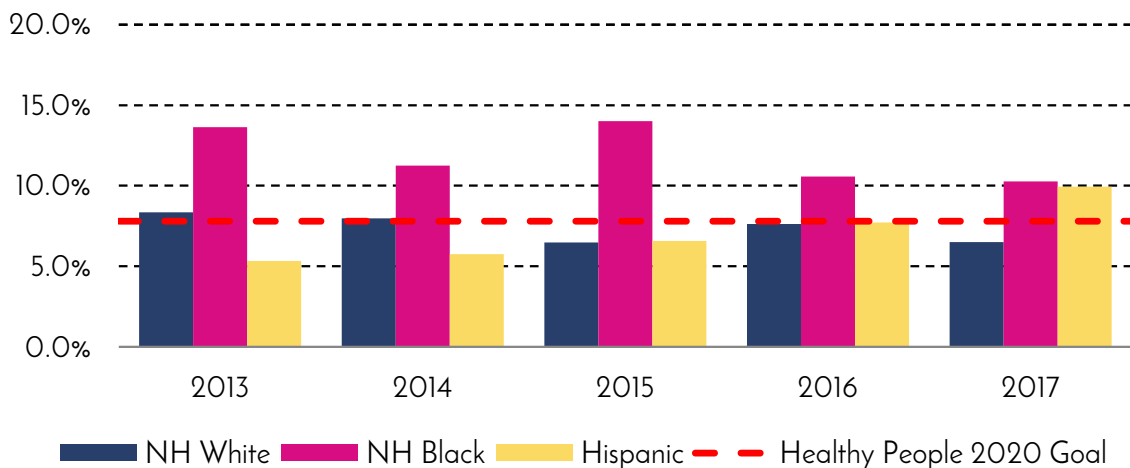
**9.0%**

2013-2017  
**Hispanic** Preterm  
Birth Rate in Butler  
County

# Low Birth Weight

Low birth weight is defined as an infant weighing less than 2,500 grams (approximately 5.5 pounds) at birth. Low birth weight is a risk factor for infant mortality and morbidity<sup>5</sup>. The figure below shows the low birth weight birth rate in Butler County by race from 2013 to 2017. In 2017, the low birth weight birth rate for non-Hispanic white babies in Butler County (6.5%) was lower than the Healthy People 2020 Goal (7.8%). The low birth weight birth rate for non-Hispanic black (10.3%) and Hispanic (9.9%) babies in Butler County were both higher than the Healthy People 2020 Goal (7.8%)

## Butler County Low Birth Weight Birth Rate by Race, 2013-2017



**11.9%**

2013-2017 non-Hispanic  
**Black** Low Birth Weight  
Birth Rate in Butler  
County

**7.4%**

2013-2017 non-Hispanic  
**White** Low Birth Weight  
Birth Rate in  
Butler County

**7.1%**

2013-2017  
**Hispanic** Low Birth  
Weight  
Birth Rate in Butler County

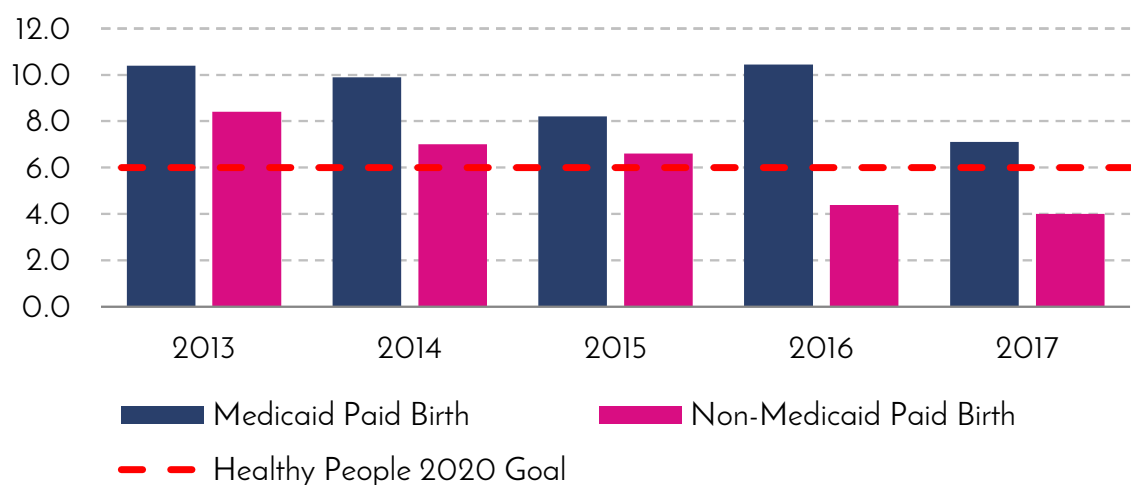




# Infant Mortality Rate by Medicaid Status

Income status is one of the most important indicators of infant vitality in Butler County and in the United States. Since income status is not directly measured by birth or death certificate data, income data must be imputed from other indicators. One way to measure income is by looking at Medicaid status. Medicaid status in this report is defined as Medicaid being the primary source of payment for a birth in Butler County. Medicaid enrollment is income-dependent and only provided to those below the federal poverty level.

## Butler County Infant Mortality Rate by Medicaid Status, 2013-2017



9.2

2013-2017 IMR for Medicaid Paid Births in Butler County

6.1

2013-2017 IMR for non-Medicaid Paid Births in Butler County

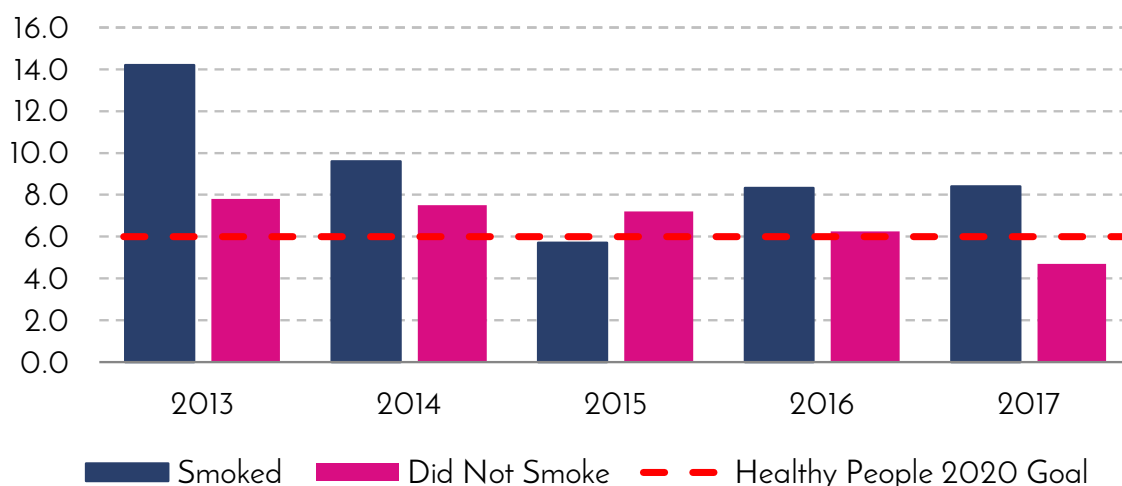
Source: 2013-2017 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse  
Data for 2017 is provisional; ODH finalizes data by fall of the subsequent year.



# Infant Mortality Rate by Smoking Status

In 2017, infants with mothers who smoked had a much higher rate of infant mortality (8.4 per 1000) than non-smoking mothers (4.7 per 1000) in Butler County. Smoking during pregnancy is defined as smoking 1 or more cigarettes during any of the three trimesters of pregnancy.

## Butler County Infant Mortality Rate by Smoking Status, 2013-2017



**9.2**

2013-2017 IMR for mothers who **smoked** in Butler County

**6.7**

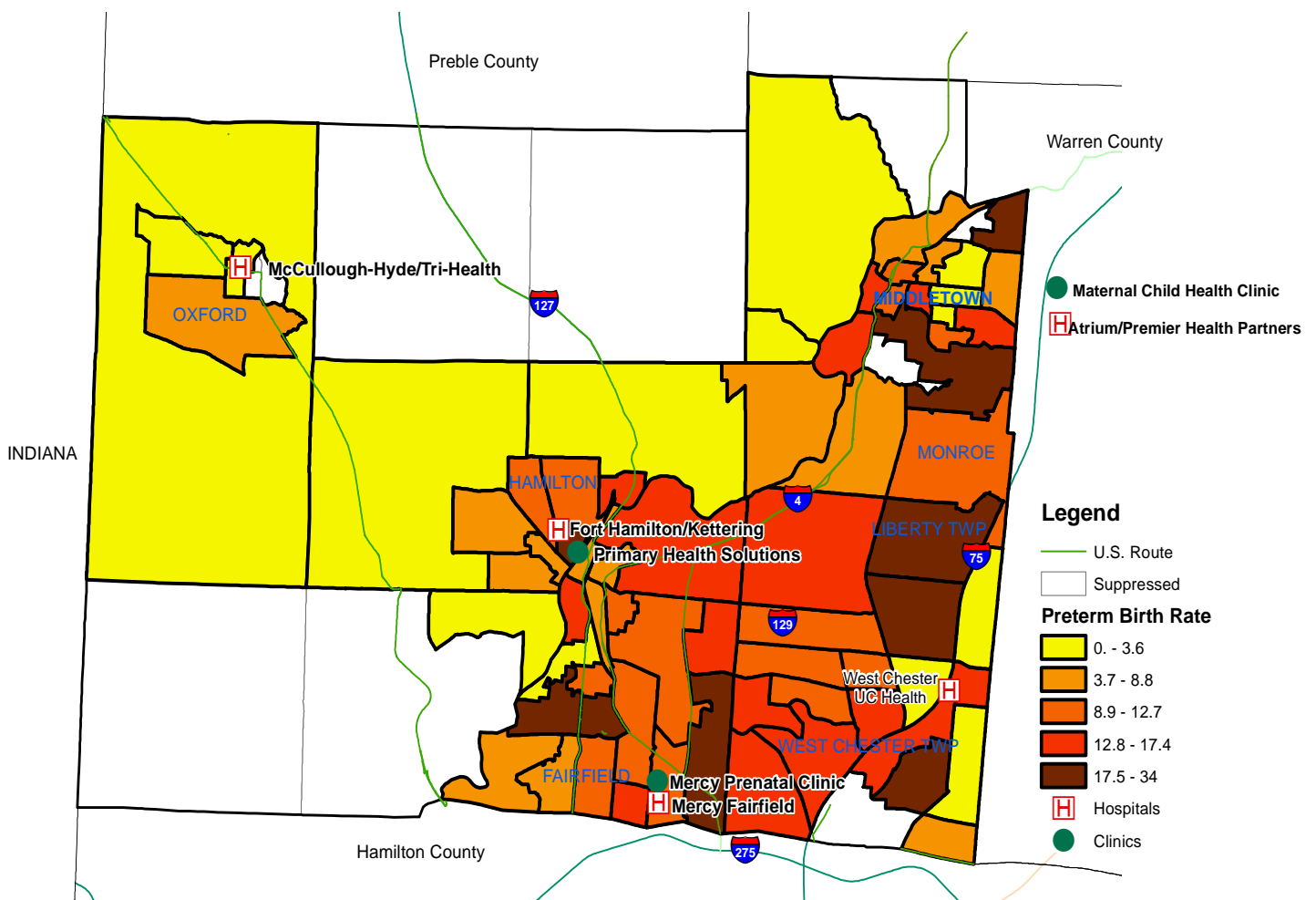
2013-2017 IMR for mothers who **did not smoke** in Butler County



# Place Matters

As is the case around the United States and around the world, Butler County has disparate health outcomes in different parts of the county. The following maps show the non-Hispanic black preterm birth rate and low birth weight birth rate by census tract for Butler County. The maps also include the location of hospitals and maternal and child health clinics. These maps were used to identify hot spot locations for low birth weight and prematurity.

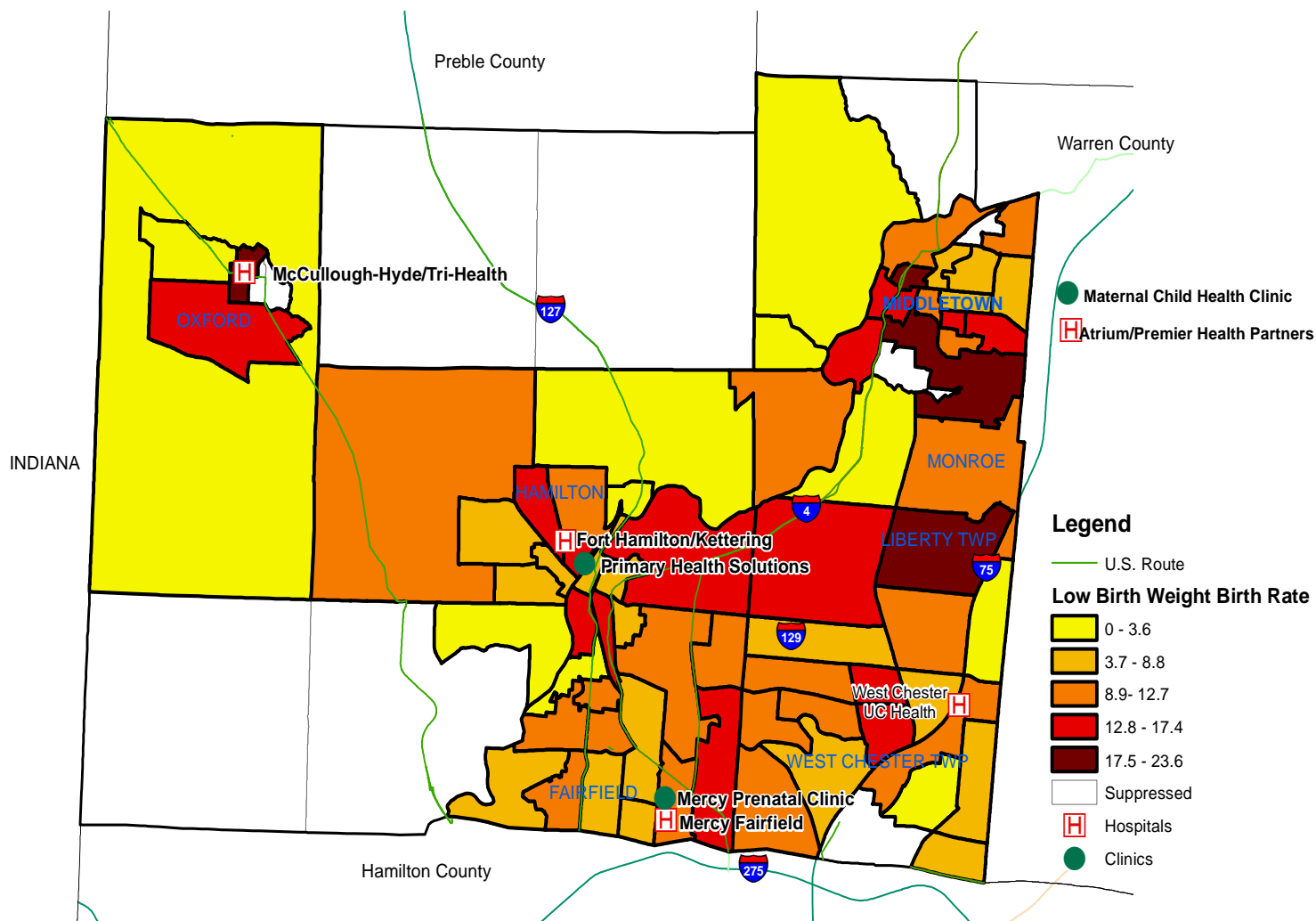
## Non-Hispanic Black Preterm Birth Rate by Census Tract, Butler County, 2007-2017



Areas where data are suppressed are due to small number of total births and preterm births to non-Hispanic Black residents  
Source: Ohio Department of Health (ODH), Ohio Public Information Warehouse, 2007-2017 Birth Data Set



## Non-Hispanic Black Low Birth Weight Birth Rate by Census Tract, Butler County, 2007-2017



Areas where data are suppressed are due to small number of total births and preterm births to non-Hispanic Black residents  
 Source: Ohio Department of Health (ODH), Ohio Public Information Warehouse, 2007-2017 Birth Data Set



## Other Risk Factors for Poor Birth Outcomes

Previous data analyses have shown Marital Status, Smoking, and Obesity as important infant health risk factors in Butler County. The table below compares percentage of poor birth outcomes between these and other risk factors. A poor birth outcome is defined as a preterm birth (before 37 completed weeks of gestation), a low birth weight birth (weighing less than 2500 grams) or a small for gestational age birth (birth weight below the 10th percentile for babies of the same gestational age).

% of Butler County Births with Poor Birth Outcomes 2013-2017	
<b>Race</b>	
Black	26.8%
White	16.8%
<b>Medicaid Status</b>	
Medicaid	21.8%
Non-Medicaid	15.9%
<b>Weight Status</b>	
Obese (BMI $\geq$ 30)	17.2%
Normal Weight	18.1%
<b>Smoking Status</b>	
Smokers	27.9%
Non-Smokers	16.5%
<b>Marriage Status</b>	
Unmarried	21.6%
Married	15.7%
<b>Prenatal Care</b>	
Early (During 1 <sup>st</sup> Trimester)	16.3%
Late (2 <sup>nd</sup> or 3 <sup>rd</sup> Trimester)	19.5%
None	44.0%
<b>Birth Spacing*</b>	
Short (<18 months)	15.8%
Optimal (>19 and <60 months)	14.4%
Long (>60 months)	18.7%

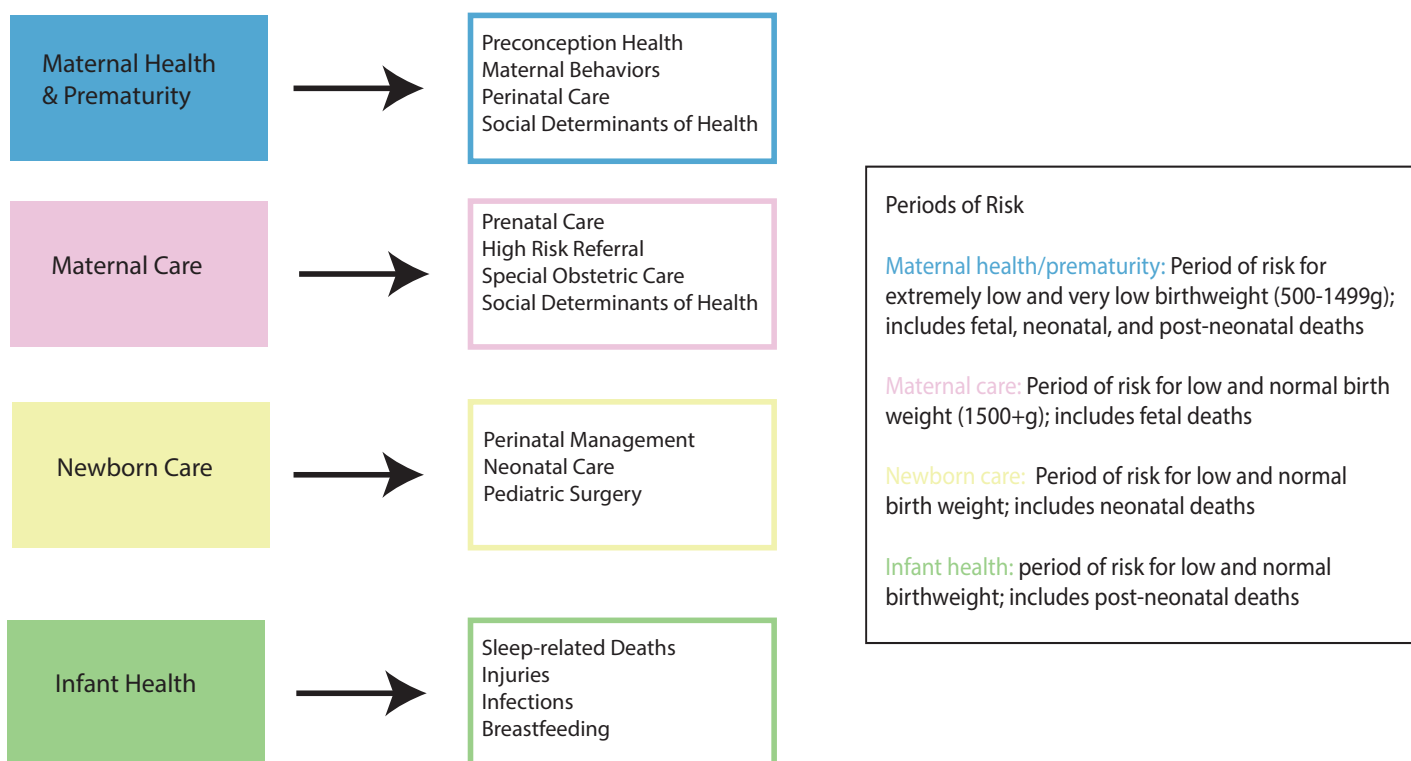
\* Birth spacing is defined as the # months between last live birth and conception of next pregnancy





# Summary of PPOR Analysis

Perinatal Periods of Risk (PPOR) is a comprehensive approach to help communities use data to reduce infant mortality. PPOR provides a framework and steps that help a community analyze their own local vital records data and then move from data to action. The initial analysis, phase 1 of PPOR, divides fetal and infant deaths into four Perinatal Periods of Risk, based on both birth weight and age at death. Fetal deaths (24 weeks of gestation or more) are included in PPOR because they can provide a lot of information, and there are almost as many fetal deaths as infant deaths. The periods of risk are useful because causes of death tend to be similar within each period, making it easier to focus efforts on the periods of risk where a community has the most problems. A mortality rate is calculated for each period to compare with other populations in the jurisdiction, examine time trends, and compare to other cities or a reference group. In Butler County, a PPOR analysis of data from 2012-2016 showed most excess deaths (51%) occurred in the Maternal Health and Prematurity group, followed by the Maternal Care (28.6%) and Infant Health (16%) risk groups. Analyzing these risk groups allows us to plan and decide what kind of interventions may be most useful for the community based on where most excess deaths occur.





## Butler County Infant Mortality Interventions Call 2-1-1 for Referrals to our Services!

- **2-1-1 Babylink (A United Way Collaboration)**  
24-7 Hotline for referrals and resources related to pregnancy and infants
- **Centering Pregnancy**  
Group pregnancy care with proven improved health results for moms and babies.
- **Smoking Cessation**  
Individual counseling sessions to help moms and families stop smoking.
- **Breastfeeding Support (Butler County Breastfeeding Coalition/WIC)**  
Leads support groups for breastfeeding moms and runs county breastfeeding events.
- **Safe Sleep**  
Cribs for Kids Eligible families can obtain a free Cribette along with safe sleep education.
- **Community Engagement**  
PRIM attends local events and facilitates local infant mortality teams.
- **Moms and Babies First (Black Infant Vitality home visiting program)**  
Certified Community Health Workers make home visits in pregnancy and for infant's first year.
- **Help Me Grow Home Visiting**  
Home visiting services from infant birth up to age three.
- **Families First**  
Faith-based Home Visiting program for pregnant moms to achieve healthy birth outcomes.
- **Miami University Collaborative Research Teams**  
PRIM teams with researchers from Miami University (OH) to develop innovative solutions to IM issues
- **NEST Mentoring**  
Faith based mentoring for mothers, monthly support meetings with childcare and meal provided.
- **Celebrate Fatherhood**  
Male mentoring, daddy boot camp, individual fatherhood classes on request.
- **Community Health Worker Capacity Building**  
Community of Learners meetings for professional education and support.



## References

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# Data Tables

Table 1. Butler County Infant Mortality Rate by Race, 2012-2017

		Infant Deaths	Total Births	Infant Mortality Rate
non-Hispanic White	2012	30	3,653	<b>8.2</b>
	2013	34	3,464	<b>9.8</b>
	2014	30	3,474	<b>8.6</b>
	2015	20	3,562	<b>5.6</b>
	2016	15	3,355	<b>4.5</b>
	2017	11	3,295	<b>3.3</b>
non-Hispanic Black	2012	7	433	<b>16.2</b>
	2013	5	491	<b>10.2</b>
	2014	3	444	<b>6.8</b>
	2015	10	471	<b>21.2</b>
	2016	8	492	<b>16.3</b>
	2017	6	497	<b>12.1</b>
Hispanic	2012	1	357	<b>2.8</b>
	2013	2	318	<b>6.3</b>
	2014	4	347	<b>11.5</b>
	2015	3	380	<b>7.9</b>
	2016	5	414	<b>12.1</b>
	2017	4	433	<b>9.2</b>
Butler County (Total)	2012	39	4,640	<b>8.4</b>
	2013	43	4,463	<b>9.6</b>
	2014	39	4,457	<b>8.8</b>
	2015	33	4,604	<b>7.2</b>
	2016	31	4,475	<b>6.9</b>
	2017	23	4,461	<b>5.2</b>

Source: 2012-2017 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse

**Table 2. Butler County Infant Mortality Ratio**

	non-Hispanic Black IMR	non-Hispanic White IMR	Infant Mortality Ratio
2012	16.2	8.2	<b>2.0</b>
2013	10.2	9.8	<b>1.0</b>
2014	6.8	8.6	<b>0.8</b>
2015	21.2	5.6	<b>3.8</b>
2016	16.3	4.5	<b>3.6</b>
2017	12.1	3.3	<b>3.7</b>

**Table 3. Butler County Preterm Birth Rate by Race, 2012-2017**

		Preterm Births	Total Births	Preterm Birth Rate
non-Hispanic White	2012	361	3,653	<b>9.9%</b>
	2013	322	3,464	<b>9.3%</b>
	2014	336	3,474	<b>9.7%</b>
	2015	300	3,562	<b>8.4%</b>
	2016	336	3,355	<b>10.0%</b>
	2017	281	3,295	<b>8.5%</b>
non-Hispanic Black	2012	53	433	<b>12.2%</b>
	2013	68	491	<b>13.8%</b>
	2014	63	444	<b>14.2%</b>
	2015	75	471	<b>15.9%</b>
	2016	59	492	<b>12.0%</b>
	2017	68	497	<b>13.7%</b>
Hispanic	2012	30	357	<b>8.4%</b>
	2013	21	318	<b>6.6%</b>
	2014	31	347	<b>8.9%</b>
	2015	36	380	<b>9.5%</b>
	2016	39	414	<b>9.4%</b>
	2017	46	433	<b>10.6%</b>
Butler County (Total)	2012	465	4,640	<b>10.0%</b>
	2013	424	4,463	<b>9.5%</b>
	2014	454	4,457	<b>10.2%</b>
	2015	429	4,604	<b>9.3%</b>
	2016	451	4,475	<b>10.1%</b>
	2017	422	4,461	<b>9.5%</b>

Source: 2011-2017 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse



**Table 4. Butler County Low Birthweight Birth Rate by Race, 2012–2017**

		LBW Births	Total Births	LBW Birth Rate
non-Hispanic White	2012	278	3,653	<b>7.6%</b>
	2013	289	3,464	<b>8.3%</b>
	2014	276	3,474	<b>7.9%</b>
	2015	231	3,562	<b>6.5%</b>
	2016	256	3,355	<b>7.6%</b>
	2017	214	3,295	<b>6.5%</b>
non-Hispanic Black	2012	48	433	<b>11.1%</b>
	2013	67	491	<b>13.6%</b>
	2014	50	444	<b>11.3%</b>
	2015	65	471	<b>13.8%</b>
	2016	52	492	<b>10.6%</b>
	2017	51	497	<b>10.3%</b>
Hispanic	2012	20	357	<b>5.6%</b>
	2013	17	318	<b>5.3%</b>
	2014	20	347	<b>5.8%</b>
	2015	25	380	<b>6.6%</b>
	2016	32	414	<b>7.7%</b>
	2017	43	433	<b>9.9%</b>
Butler County (Total)	2012	372	4,640	<b>8.0%</b>
	2013	387	4,463	<b>8.7%</b>
	2014	364	4,457	<b>8.2%</b>
	2015	340	4,604	<b>7.4%</b>
	2016	355	4,475	<b>7.9%</b>
	2017	337	4,461	<b>7.6%</b>

Source: 2012-2017 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse



PRIM is a Community Initiative of the  
Butler County General Health District  
301 South Third Street  
Hamilton, OH 45011



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