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Butler County
General Health District

Butler County Infant Vitality Annual Report 2019



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Contact Information

Do you have questions about the Infant Vitality Annual Report?
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Introduction

The Butler County Infant Vitality Annual Report 2019 is a resource primarily aimed at notifying the community about the status of infant mortality (the death of an infant within the first year of life) in Butler County. The infant mortality rate is a leading indicator of the overall health of a community. In Butler County, African American infants are dying at more than twice the rate of our white infants.

The social determinants of health play a role in infant mortality rates. The social determinants of health are conditions in the places where people live, learn, work, and play. Disparities within the social determinants of health influence maternal health and infant and child health, as well as affect birth outcomes. Environmental and social factors such as access to health care and early intervention services, education, employment, housing, transportation, economic opportunities, social support, and availability of resources to meet daily needs, influence maternal health behaviors and birth outcomes.

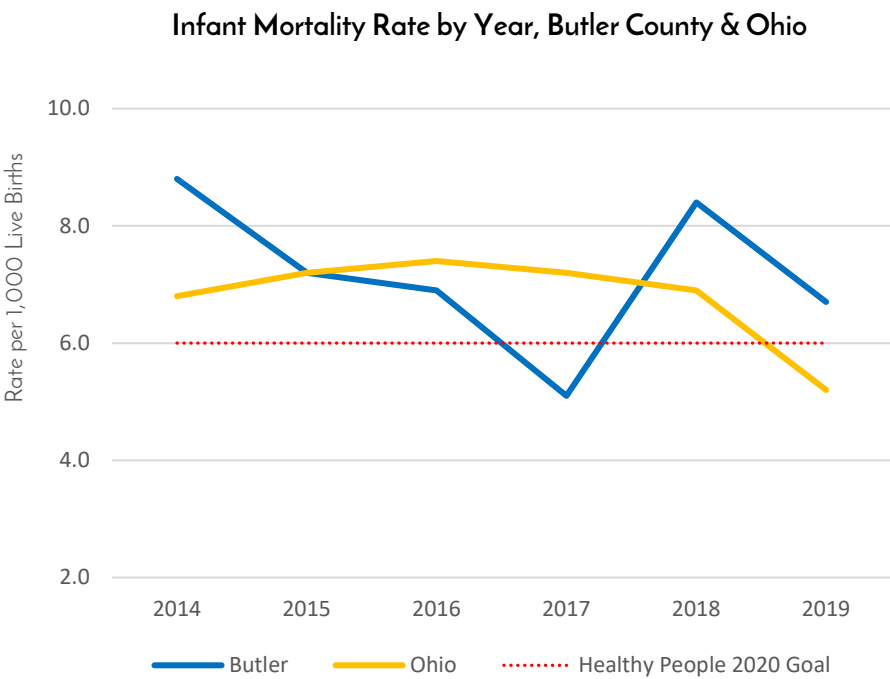
In Butler County, there are many evidence-based programs and interventions aimed at reducing infant mortality rates. This report highlights these initiatives and current community interventions working together to increase infant vitality and reduce racial disparities. Direct service interventions seek to support and care for women with high-risk pregnancies, connecting them to community resources and programs to improve birth outcomes. Infant mortality is also being addressed by organizations across Butler County that are coming together to tackle the social determinants of health through policy interventions, improving the conditions of our community that will allow for healthier mothers and infants.

This report includes health trends on birth outcomes and distribution of infant mortality within Butler County. This report also includes data on risk factors associated with infant mortality such as preterm birth, low birth weight, income status, maternal smoking, etc. An analysis of the Perinatal Period of Risk describe four periods of risk for infant death and determines in which period excess mortality is occurring. These data analyses serve to inform our community of the status of infant mortality, as well as informing programs and policies that reduce health inequity.



Infant Mortality Trends

The Infant Mortality Rate (IMR) is widely accepted as one of the most sensitive indicators of the health of a community. Infant mortality is the death of a live born 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. The infant mortality rate for Butler County decreased from 8.4 deaths per 1,000 live births in 2018 to 6.7 deaths per 1,000 live births in 2019.



6.0

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

6.7

Infant Mortality Rate for
overall Butler County in
2019

Overall, Butler County’s IMR has been decreasing since 2012. The infant mortality rate for Butler County in 2019 was higher than the state of Ohio and Healthy People 2020 goal of 6.0 deaths per 1,000 live births. The figure above shows the yearly infant mortality rate in Butler County and Ohio from 2014-2019 and the Healthy People 2020 Goal.



2019 Quarterly Year Infant Mortality Data

		2018		IMR	2019		IMR
		Infant Deaths	Live Births		Infant Deaths	Live Births	
Quarter 1	January	6	374	8.25 per 1000 live births	1	381	6.68 per 1000 live births
	February	2	331		1	320	
	March	1	386		5	347	
Quarter 2	April	0	324	5.49 per 1000 live births	1	348	4.45 per 1000 live births
	May	4	393		1	372	
	June	2	375		3	403	
Quarter 3	July	2	394	11.45 per 1000 live births	3	415	10.17 per 1000 live births
	August	6	454		4	369	
	September	6	375		5	395	
Quarter 4	October	6	419	8.11 per 1000 live births	2	369	4.15 per 1000 live births
	November	0	342		1	336	
	December	3	349		1	259	

8.41

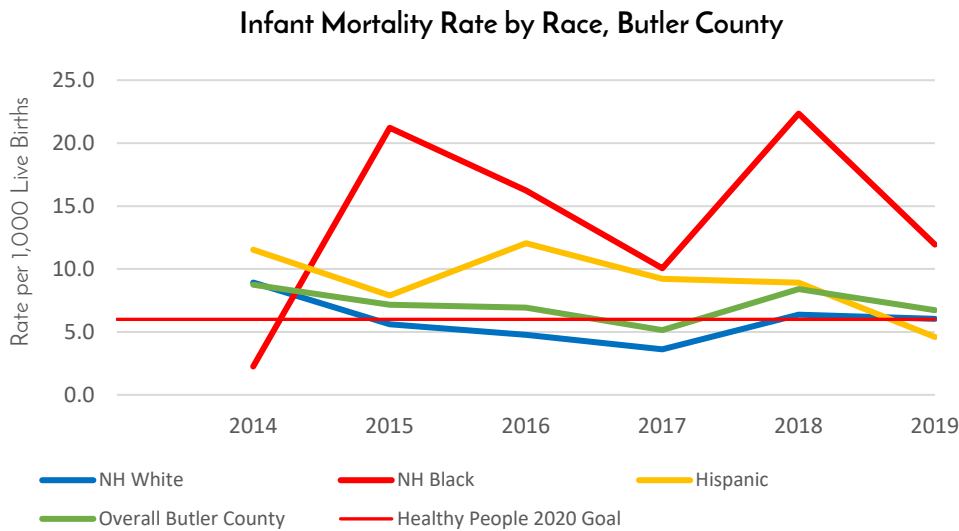
Infant Mortality Rate
2018

6.7

Infant Mortality Rate
2019

Infant Mortality Rate by Race

Although infant mortality has decreased as a whole in Butler County, there is significant racial and ethnic disparities among birth outcomes. Black infants are dying at over two times the rate of White infants. The IMR for non-Hispanic Black infants in Butler County for the period 2014-2019 was 14.0 deaths per 1,000 live births compared to non-Hispanic White IMR of 5.9 deaths per 1,000 live births.

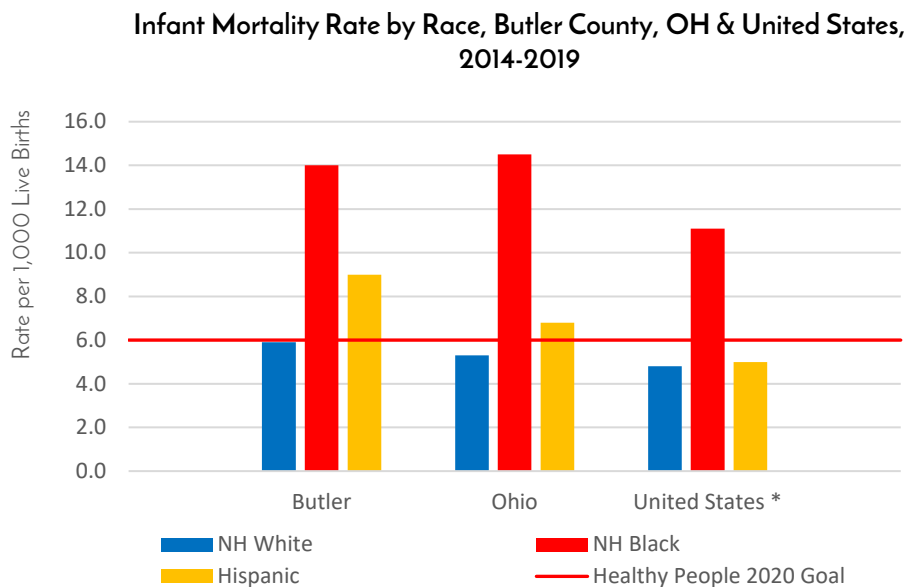


5.9

Infant Mortality Rate
for non-Hispanic
White in Butler
County, 2014-2019

14.0

Infant Mortality Rate
for non-Hispanic **Black**
in Butler County, 2014-
2019



14.5

Infant Mortality Rate
for non-Hispanic **Black**
in Ohio,
2014-2019

14.0

Infant Mortality Rate
for non-Hispanic **Black**
in United States,
2014-2017

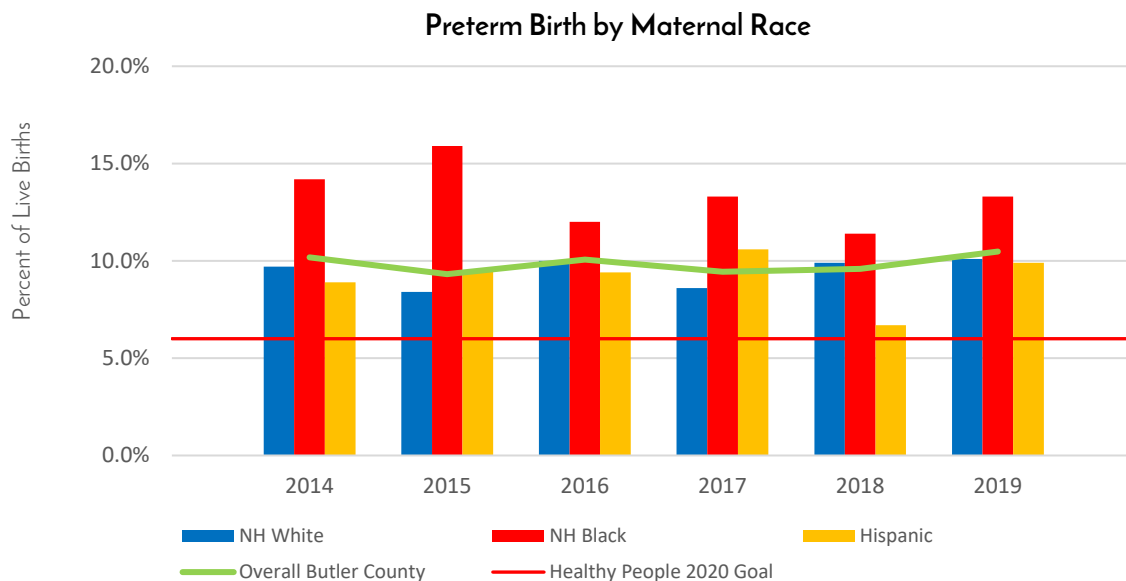
State and Nationwide data show very similar trends in infant mortality. In the United States, the infant mortality rate for non-Hispanic White and Hispanic babies is below the Healthy People 2020 goal of 6.0 deaths per 1000 live births. However, in Ohio and Butler County the infant mortality rate for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



Preterm Birth

Preterm birth is the birth of an infant before 37 completed gestational weeks. Preterm birth is one of the greatest contributors to infant death. The last few weeks of pregnancy are when the baby goes through some of the most important growth. In Butler County, there is significant racial and ethnic disparities among birth outcomes for non-Hispanic Black infants. In 2019, the overall preterm birth rate for Butler County was 10.5%. However, 13.3% of non-

Hispanic Black infants were born preterm, compared to 9.5% non-Hispanic White infants and 9.2% Hispanic infants. Preterm birth rates in Butler County for all races were higher than the Healthy People 2020 goal (6.0%).



13.3%

Preterm Birth Rate for non-Hispanic **Black** in Butler County, 2014-2019

9.5%

Preterm Birth Rate for non-Hispanic **White** in Butler County, 2014-2019

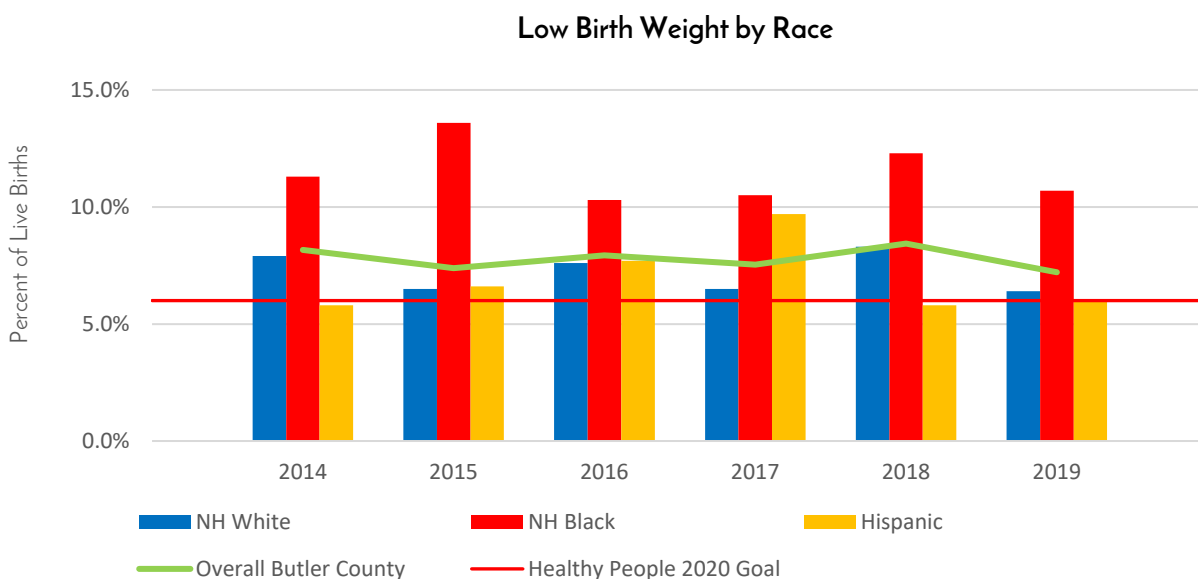
9.2%

Preterm Birth Rate for **Hispanic** in Butler County, 2014-2019



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. The overall low birth weight for Butler County decreased from 8.4% in 2018 to 7.2% in 2019. However, non-Hispanic Black infants have significantly higher rates of low birth weight compared to other races. In 2019, non-Hispanic Black infants (11.5%) had a higher low birth weight compared to non-Hispanic White (7.2%) and Hispanic infants (6.9%). The low birth weight for non-Hispanic Black and non-Hispanic White infants were higher than the Healthy People 2020 Goal (6.0%).



11.5%

Low Birth Weight for non-Hispanic **Black** in Butler County, 2014-2019

7.2%

Low Birth Weight for non-Hispanic **White** in Butler County, 2014-2019

6.9%

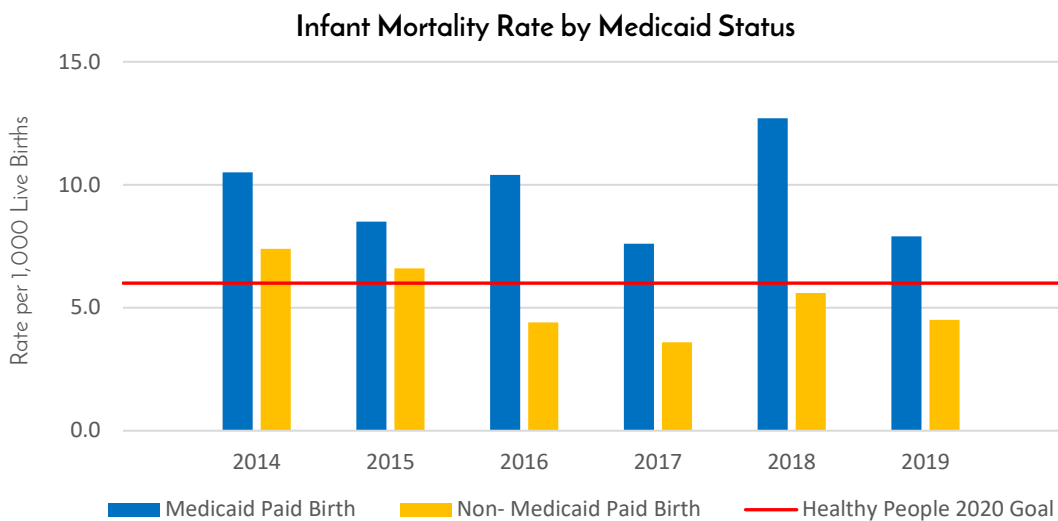
Low Birth Weight for **Hispanic** in Butler County, 2014-2019



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.

One way to measure income is by looking at Medicaid status. Medicaid status in this report is defined as the primary source of payment for a birth in Butler County. Overall, non-Medicaid paid births (5.4 deaths per 1,000 live births) had a significantly lower risk of infant death than Medicaid paid births (9.6 deaths per 1,000 live births) in Butler County from 2014-2019.



9.6

Infant Mortality Rate for **Medicaid Paid** Births in Butler County, 2014-2019

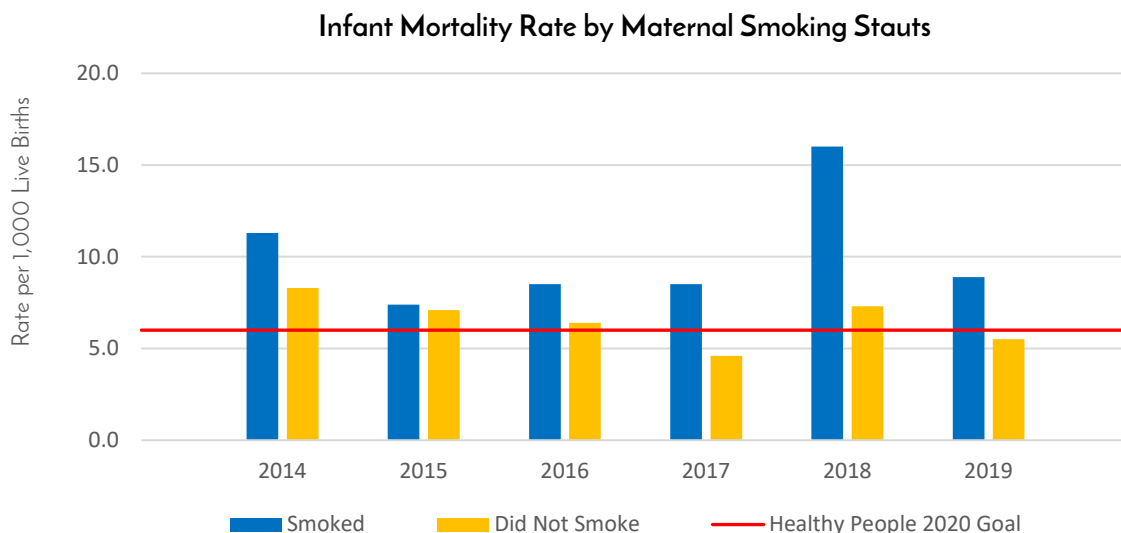
5.4

Infant Mortality Rate for **non-Medicaid Paid** Births in Butler County, 2014-2019



Infant Mortality Rate by Smoking Status

Maternal smoking increases the risk of preterm birth, low birth weight, and Sudden Infant Death Syndrome, which are all causes of infant mortality. The figure below shows infant mortality rate by smoking status in Butler County from 2014-2019. Overall, mothers who smoked during pregnancy had a much higher rate of infant mortality (10.1 deaths per 1,000 live births) than non-smoking mothers (6.5 deaths per 1,000 live births) in Butler County. Smoking during pregnancy is defined as smoking one or more cigarettes during any of the three trimesters of pregnancy.



10.1

Infant Mortality Rate for **maternal smokers** in Butler County, 2014-2019

6.5

Infant Mortality Rate for **non-maternal smokers** in Butler County, 2014-2019



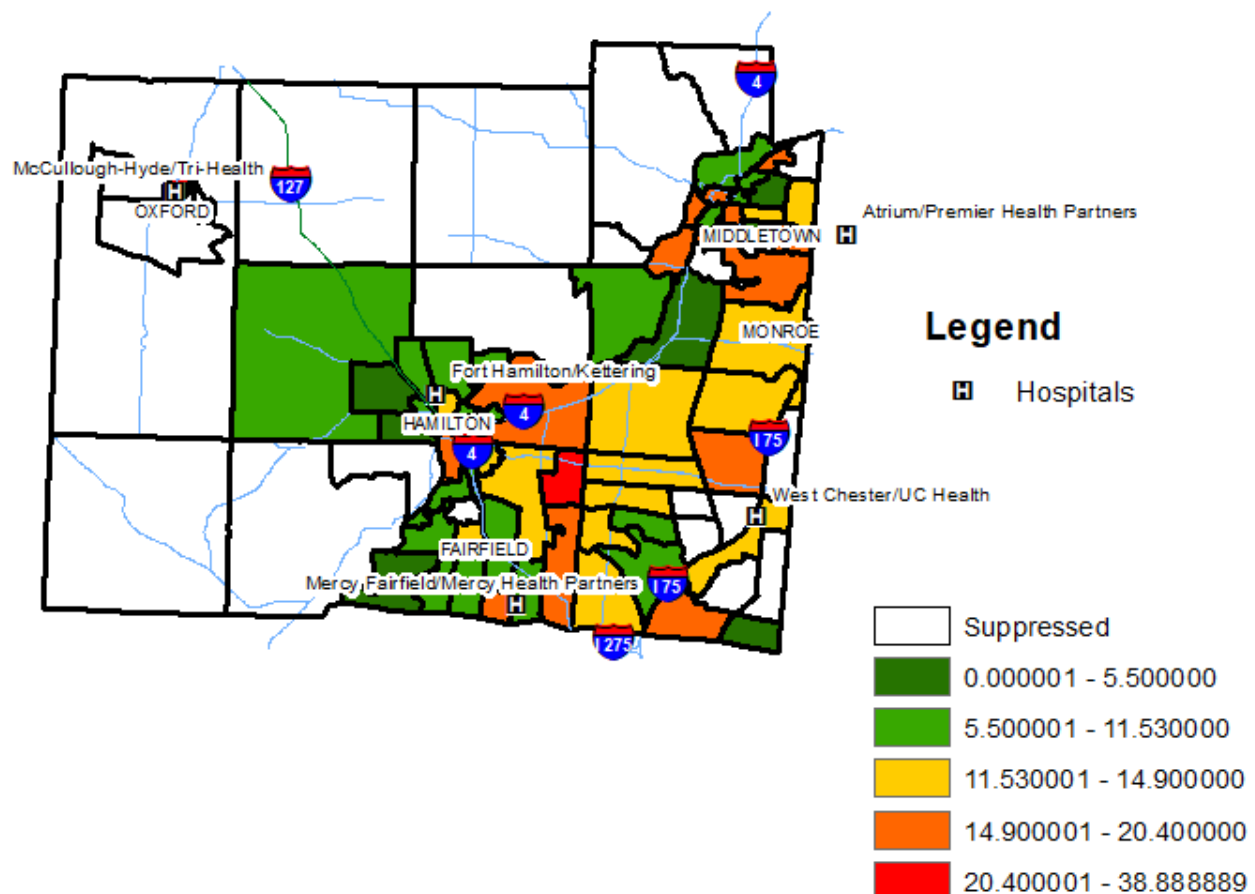
Place Matters

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 map shows non-Hispanic Black preterm 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.

The top ten census tracts in Butler County for non-Hispanic Black preterm birth rate during the period 2008-2019 were tract 1101.01 (38.9%), 110.03 (20.4%), 141 (19.6%), 111.2 (19.6%), 132 (18.6%), 111.31 (18.2%), 109.09 (17.9%), 140 (17.6%), 123 (17.4) and 144 (17%).

Non-Hispanic Preterm Birth Rate by Census Tract, Butler County, 2008-2019

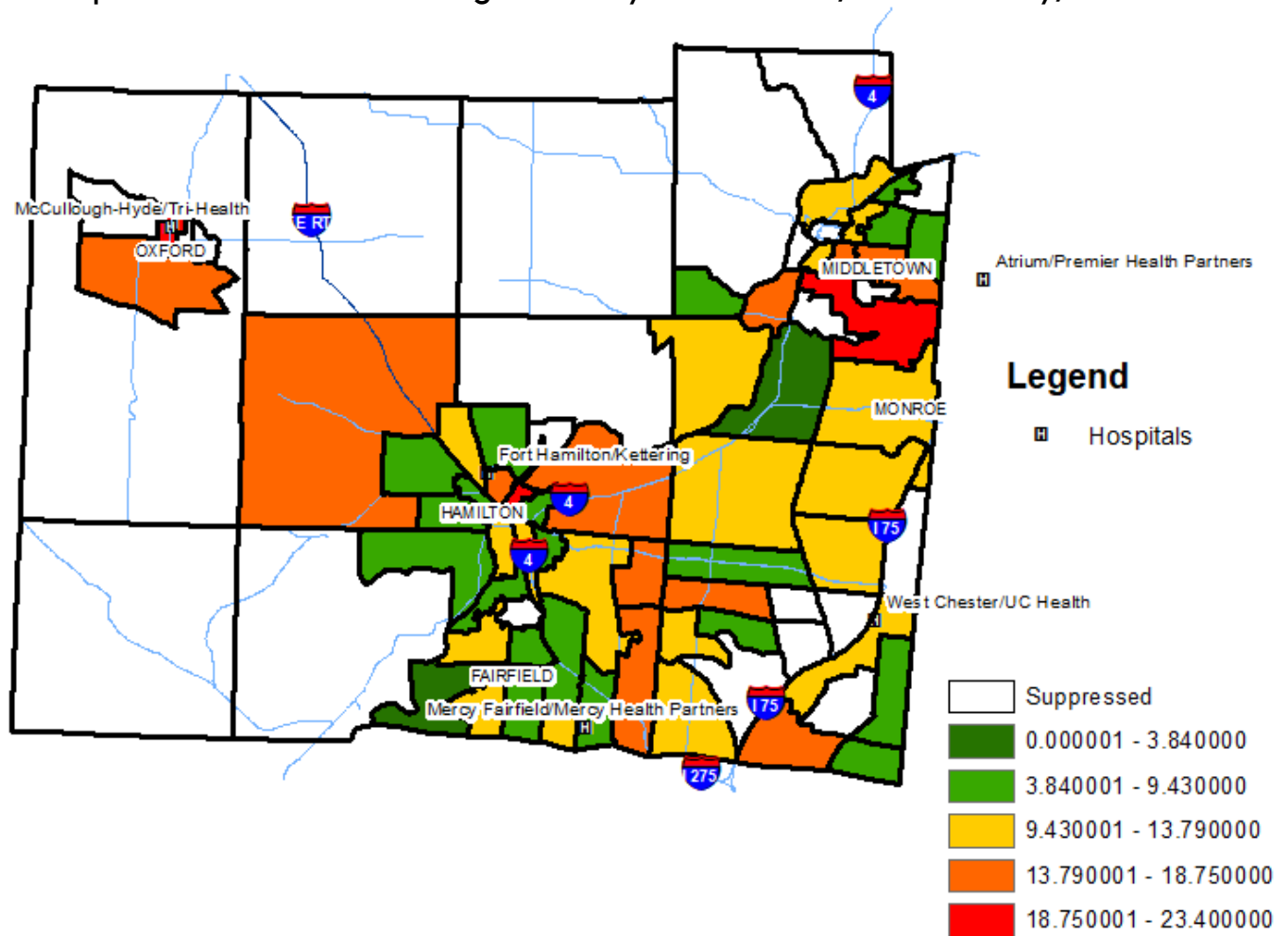




Place Matters

The map shows non-Hispanic Black low birth weight rate by census tract in Butler County. The top ten census tracts for non-Hispanic Black low birth weight rate during the period of 2008-2019 were tract 144 (23.4%), 101.01 (22.2%), 146 (22.2%), 141 (21.4%), 133 (18.8%), 111.31 (18.2%), 134 (16.7%), 150 (16.7%), 110.03 (16.3%) and 110.02 (16.1%).

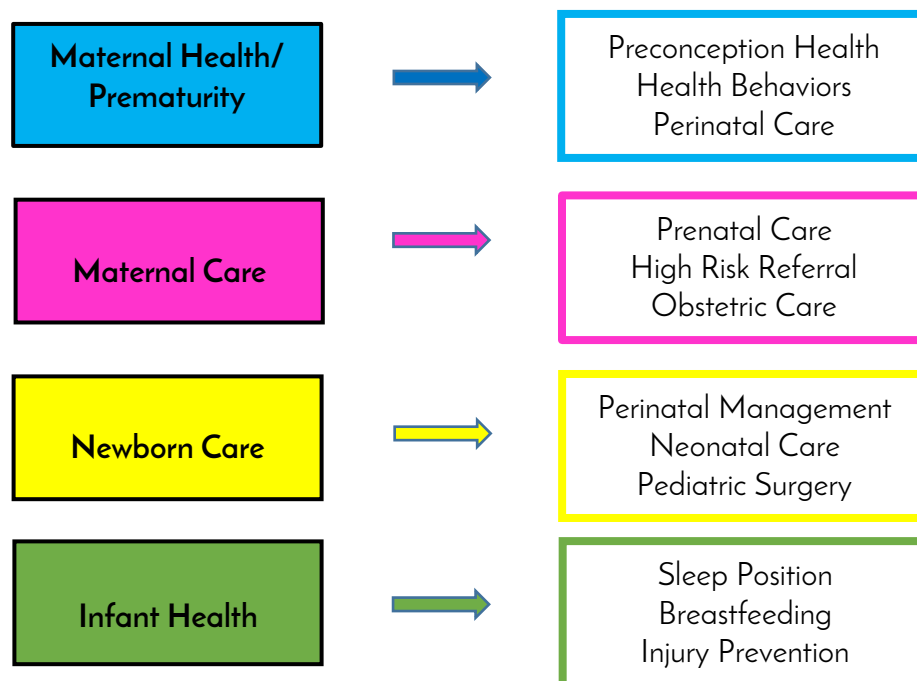
Non-Hispanic Black Low Birth Weight Rate by Census Tract, Butler County, 2008-2019





Perinatal Periods of Risk Analysis

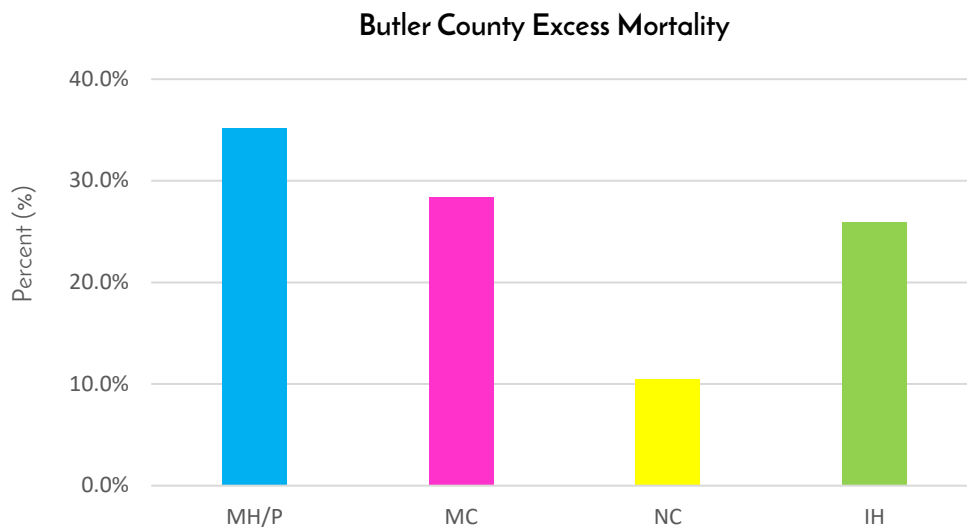
Perinatal Periods of Risk (PPOR) is a comprehensive approach to help communities use data to reduce infant mortality. PPOR provides an analytic framework that helps a community investigate and address specific causes of local infant mortality rates and disparities. The analysis, Phase 1 of PPOR, divides fetal and infant deaths into four periods of risk, based on birth weight and age at death. The four periods of risk are Maternal Health/Prematurity, Maternal Care, Newborn Care, and Infant Health.





Summary of PPOR Analysis

In Butler County, a PPOR analysis was conducted for the period 2014 to 2018. Results identified that Maternal Health/Prematurity period of risk had the greatest percentage of excess fetal and infant death (35.2%), followed by Maternal Care (28.4%) and Infant Health (25.9%) among all Butler County residents.



Maternal Health/Prematurity	MH/P	35.2%
Maternal Care	MC	28.4%
Newborn Care	NC	10.5%
Infant Health	IH	25.9%

Based on these findings, prevention strategies for reducing infant death within Maternal Health/Prematurity period should focus on preconception health issues such as chronic diseases, health behaviors such as smoking and drug abuse, and the need to improve women's access to specialized perinatal care.

Within Maternal Care, prevention should focus on quality of prenatal care, referral of high-risk pregnancies and good medical management of conditions like diabetes, seizures, and post-maturity.



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 2,500 grams).

% of Butler County Births with Poor Birth Outcomes 2014-2019	
Race	
White	16.7%
Black	24.7%
Medicaid Status	
Medicaid	20.8%
Private Insurance	15.0%
Uninsured	19.3%
Weight Status	
Normal Weight	17.9%
Obese (BMI > 30)	20.4%
Smoking Status	
Smoker	24.4%
Non-smoker	16.6%
Marital Status	
Married	15.6%
Unmarried	20.5%
Prenatal Care	
Early (During 1 st Trimester)	15.6%
Late (2 nd or 3 rd Trimester)	18.0%
None	59.2%



Butler County Infant Mortality Interventions



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Butler County General Health District, 513-863-1770

Ohio Equity Institute 2.0

- Neighborhood Navigator connects pregnant moms to community resources
- Leading Infant Vitality Equitably (LIVE) is a policy focused coalition addressing health inequalities that impact infant mortality



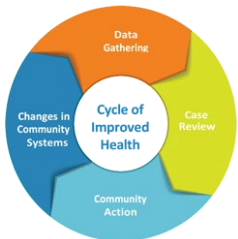
MOMS & BABIES FIRST
Ohio's Black Infant Vitality Program

Moms and Babies First

- Home visiting specifically for African American pregnant women
- Community Health Workers meet regularly with moms and ensure baby thrives throughout their 1st year of life

Cribs for Kids

- Ensuring infants have a safe sleep environment by providing free Cribettes,[™] education, and literature to eligible families



Fetal Infant Mortality Review (FIMR)

- Review of all fetal (20 weeks gestation+) and infant deaths
- Develop and implement prevention focused initiatives

Women's Worksite Wellness Program

- Create workplace policies to support women's preconception health



Envision Partnerships, 513-296-2448

Moms Quit for Two

- Smoking Cessation Program for pregnant moms and their partners



Primary Health Solutions, 513-454-1111

CenteringPregnancy[™]

- Prenatal care and support group



Butler County Infant Mortality Interventions

Butler County Educational Service Center, 513-785-6850



Help Me Grow

- Home visiting services for expectant parents, newborns, infants and toddlers
- Provide health and developmental services

Ohio Department of Medicaid: Infant Mortality Grant

- Community Health Worker/home visiting programs
- Community outreach
- CenteringPregnancy™ at Atrium Medical Center: 513-974-5235 and CenterPoint Health: 513-318-1188



Family and Children First Council: From Me to We Campaign

- Targeted education and advocacy efforts related to reducing infant mortality



WIC Hamilton, 513-896-7022

Breastfeeding Project, WIC Hamilton

- Create workplace policies to support breastfeeding mothers



Data Tables

Table 1. Butler County Infant Mortality Rate by Race, 2014-2019

Race	Year	Infant Deaths	Total Births	Infant Mortality Rate
non-Hispanic White	2014	31	3,474	8.9
	2015	20	3,562	5.6
	2016	16	3,356	4.8
	2017	12	3,317	3.6
	2018	21	3,302	6.4
	2019	17	2820	6.0
non-Hispanic Black	2014	1	444	2.3
	2015	10	471	21.2
	2016	8	493	16.2
	2017	5	497	10.1
	2018	12	537	22.3
	2019	6	503	11.9
Hispanic	2014	4	347	11.5
	2015	3	380	7.9
	2016	5	415	12.0
	2017	4	434	9.2
	2018	4	449	8.9
	2019	2	435	4.6
Butler County (Total)	2014	39	4,457	8.8
	2015	33	4,604	7.2
	2016	31	4,478	6.9
	2017	23	4,471	5.1
	2018	38	4,516	8.4
	2019	27	4,008	6.7



Table 2. Butler County Infant Mortality Rate

Year	non-Hispanic Black IMR	non-Hispanic White IMR	Infant Mortality Ratio
2014	2.3	8.9	0.3
2015	21.2	5.6	3.8
2016	16.2	4.8	3.4
2017	10.1	3.6	2.8
2018	22.3	6.4	3.5
2019	11.9	6	2.0

Table 3. Butler County Preterm Birth Rate by Race, 2014-2019

Race	Year	Preterm Births	Total Births	Preterm Birth Rate
non-Hispanic White	2014	336	3,474	9.7%
	2015	300	3,562	8.4%
	2016	336	3,356	10.0%
	2017	286	3,317	8.6%
	2018	328	3,302	9.9%
	2019	286	2820	10.1%
non-Hispanic Black	2014	63	444	14.2%
	2015	75	471	15.9%
	2016	59	493	12.0%
	2017	66	497	13.3%
	2018	61	537	11.4%
	2019	67	503	13.3%
Hispanic	2014	31	347	8.9%
	2015	36	380	9.5%
	2016	39	415	9.4%
	2017	46	434	10.6%
	2018	30	449	6.7%
	2019	43	435	9.9%
Butler County (Total)	2014	454	4,457	10.2%
	2015	429	4,604	9.3%
	2016	451	4,478	10.1%
	2017	422	4,471	9.4%
	2018	433	4,516	9.6%
	2019	420	4,008	10.5%

Source: 2014-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse.
Data for 2019 is provisional; ODH finalizes data by fall of the subsequent year.



Table 4. Butler County Low Birthweight Birth Rate by Race, 2014-2019

Race	Year	LBW Births	Total Births	LBW Birth Rate
non-Hispanic White	2014	275	3,474	7.9%
	2015	230	3,562	6.5%
	2016	255	3,356	7.6%
	2017	216	3,317	6.5%
	2018	274	3,302	8.3%
	2019	181	2,820	6.4%
non-Hispanic Black	2014	50	444	11.3%
	2015	64	471	13.6%
	2016	51	493	10.3%
	2017	52	497	10.5%
	2018	66	537	12.3%
	2019	54	503	10.7%
Hispanic	2014	20	347	5.8%
	2015	25	380	6.6%
	2016	32	415	7.7%
	2017	42	434	9.7%
	2018	26	449	5.8%
	2019	26	435	6.0%
Butler County (Total)	2014	364	4,457	8.2%
	2015	340	4,604	7.4%
	2016	355	4,478	7.9%
	2017	337	4,471	7.5%
	2018	381	4,516	8.4%
	2019	289	4,008	7.2%



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