Public Health
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Butler County
General Health District

Infant Vitality Annual Report

Butler County, Ohio

Fiscal Year 2020

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INTRODUCTION

According to the Centers for Disease Control and Prevention, 21,467 infants died in the United States in 2018 (CDC, 2018). The national infant mortality rate is higher than that of any other developed country.

Infant mortality is the death of a live-born baby before his or her first birthday. The infant mortality rate (IMR) is calculated as the number of babies who died during the first year of life per 1,000 live births. In 2018, Ohio ranked 40th for the worst infant mortality rates among all US states (CDC, 2018). Ohio's infant mortality rate in 2019 was 7.3 per 1,000 live births preliminary, which was higher than the 2018 national rate of 5.7 per 1,000 live births (CDC, 2018). Although Ohio's infant mortality rate is declining, there are still significant disparities among racial and ethnic groups. In 2018, African American infants in Ohio died at a rate 2.5 to 3 times the rate of White infants (ODH, 2018). Ohio's goal is 6.0 infant deaths per 1,000 live births for all racial groups, which aligns with the Healthy People 2020 objective. Healthy People 2020 is a federal plan that provides national objectives for improving the health of Americans.

The Ohio Equity Institute (OEI) 2.0 launched on October 1, 2018 to address inequities that impact infant mortality and prioritize the population most at risk for poor birth outcomes. "Health equity is achieved when all people in a community have access to affordable, inclusive and quality infrastructure and services that, despite historical and contemporary injustices, allows them to reach their full health potential" (Ohio State Health Improvement Plan, 2019). OEI teams work to achieve equity in their local communities by ensuring African American pregnant women have access to services that will support healthy pregnancies, and by improving the physical and social infrastructure that impact health outcomes for African American women, children, and families.

OEI is a partnership between the Ohio Department of Health (ODH) and nine counties with the highest infant mortality rates in Ohio. The goal of this partnership is to reduce racial disparities in birth outcomes. The nine OEI counties accounted for close to two-thirds (60%) of all Ohio infant deaths, and 88% of African American infant deaths in 2018 (ODH Infant Mortality report, 2018).

- Butler County
- Canton-Stark County
- Lucas County
- Hamilton County
- Mahoning County
- Montgomery County
- Cuyahoga County
- Summit County

• Nine OEI Counties

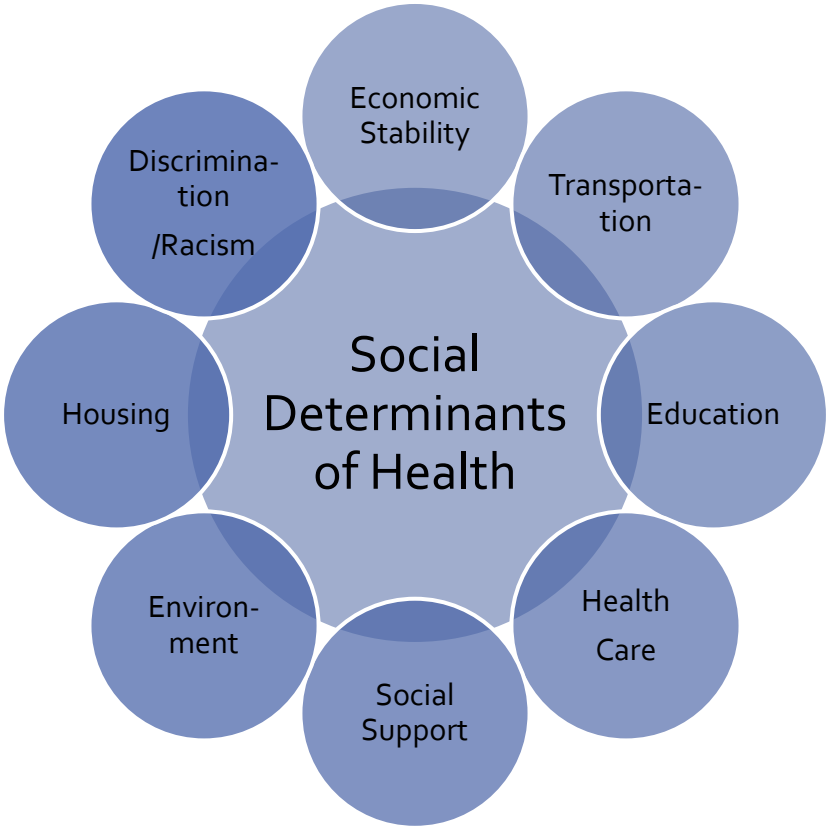
BUTLER COUNTY OEI

Butler County OEI coordinates partnerships with local agencies for infant vitality efforts. Partnerships include a robust group of dedicated individuals and organizations that focus on health education, home visiting with Certified-Community Health Workers, group-facilitated prenatal care, safe sleep education, tobacco cessation, breastfeeding support, centering, and community engagement activities. Butler County OEI has close partnerships with Moms and Babies First, a home visiting program dedicated to African American moms in the community, and with the Women's Worksite Wellness program, which focuses on preconception health.

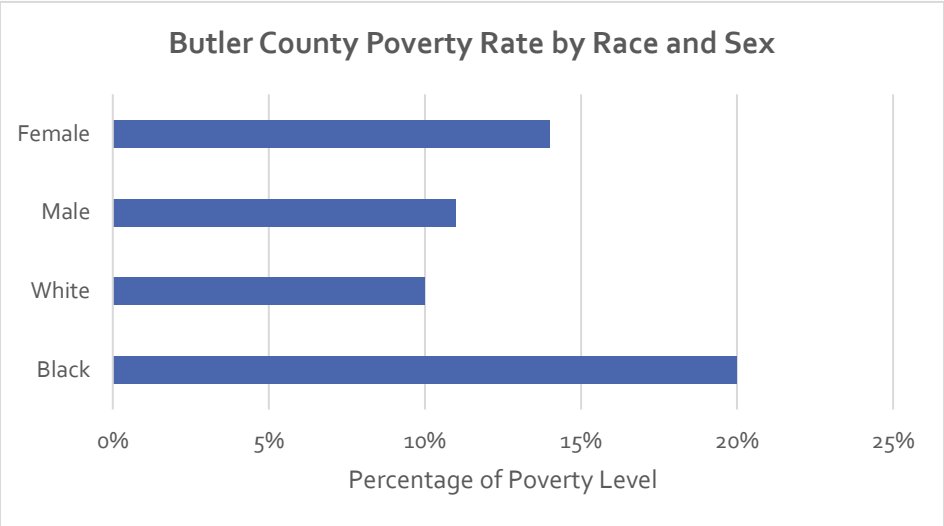
Per OEI programming, Butler County has a two-pronged strategy for serving women and infants in the community. The strategy includes downstream and upstream interventions. Upstream intervention is the focus on policy and practice changes that impact a large population. Downstream interventions focus on the individual and behavioral changes of unique individuals. The upstream strategy includes a community coalition whose mission is to reduce infant mortality rates and health inequities. The coalition, Leading Infant Vitality Equitably (LIVE), facilitates the development and adoption of policies affecting the social determinants of health related to preterm birth and low birth weight, the driving factors of infant death, in our county. The downstream intervention focuses on the Neighborhood Navigation (NN) services. The NN connects with pregnant women who are eligible for services and assesses their needs and gaps in support. The NN serves pregnant moms by connecting them to resources, services, and needed items to improve outcomes for pregnancy and infants.

BUTLER COUNTY SOCIAL DETERMINANTS OF HEALTH

Infant mortality is widely used as a key measure of the overall health of a population. If a county has high rates of infant mortality, then there are typically multiple social determinants of health plaguing the community.



According to the US Census Bureau, of Ohio's 88 counties, Butler County is the seventh most populous, with an estimated population of 383,134. The 2019 American Community Survey (ACS) showed 13% of Butler County residents living in poverty. Butler County racial composition was 85% White and 8% African American. However, 20% of African American residents live below the poverty level compared to 10% of White residents. Of the Butler County residents living below the poverty level, 21% had less than high school education. By sex, females (14%) were more likely to be in poverty than males (11%).

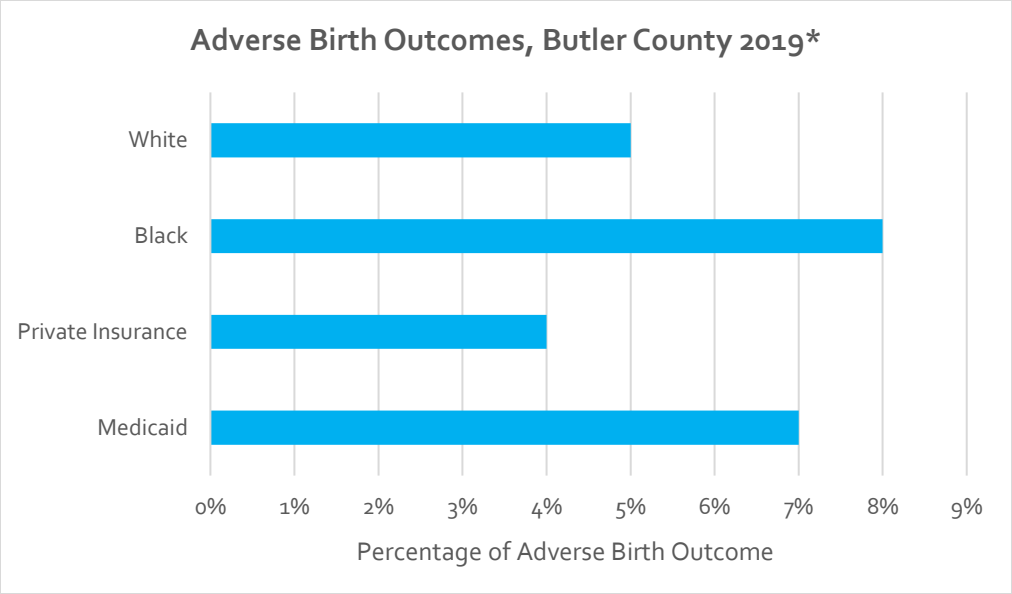


Source: https://www.census.gov/quickfacts/butlercountyohio

Economic stability and poverty are important social determinants of health that contribute to child health disparities. Poverty has an adverse effect on birth outcomes, including preterm births, low birth weight, and injury and chronic illness that can lead to higher rates of infant mortality.

The social determinants of health, such as access to health care, transportation, education, and employment, affect the health potential of our residents. However, due to a history of discrimination and racism in our country, African American residents disproportionally suffer the burden of social determinants of health, which negatively affect one's well-being. The City of Hamilton, the county's largest city, is made up of 85% White residents and 9% African American residents; however, 42% of African American residents live in poverty compared to 15% of White residents in 2019 (ACS, 2019). Redlining, a systematic process of denying people of color services and resources, such as mortgages, is one of many reasons why African American residents have been historically left out of the middle class and subjugated to poverty. Both institutionalized racism, such as redlining, and individual bias can affect an African American woman's access to quality care. In 2019, babies born to African American mothers (21%) with associate degrees and higher were 1.2 times more likely to have a lower birth weight than babies born to White women with less than a high school diploma (18%) in Butler County (Ohio Vital Statistics).

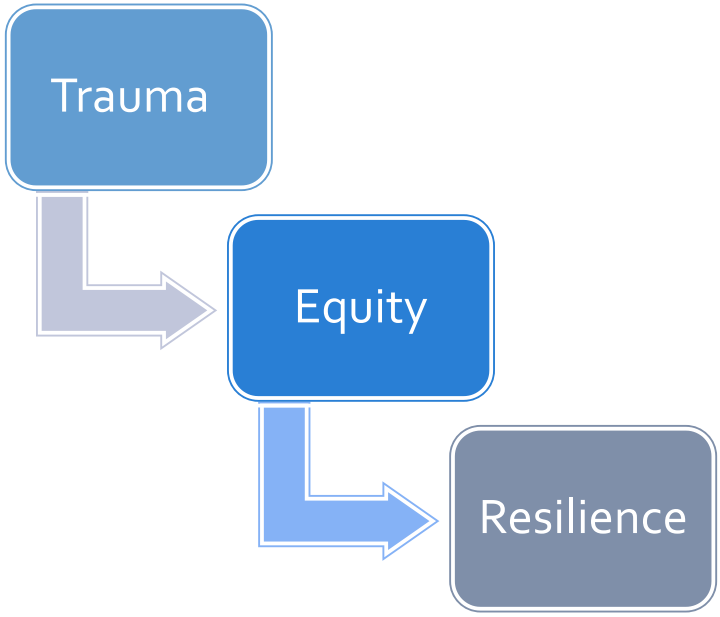
In 2019, 5% of infants born in Butler County were to mothers with high risk factors for adverse birth outcomes. Adverse birth outcomes include preterm births (less than 37 weeks of gestation) and low birth weight (less than 5.5 pounds). African American women (8%) had a higher rate of adverse birth outcomes than White women (5%). By payer source, mothers covered by Medicaid (7%) were more likely to have higher risk factors for adverse birth outcomes than women with private insurance (4%), (ODH vital statistics).



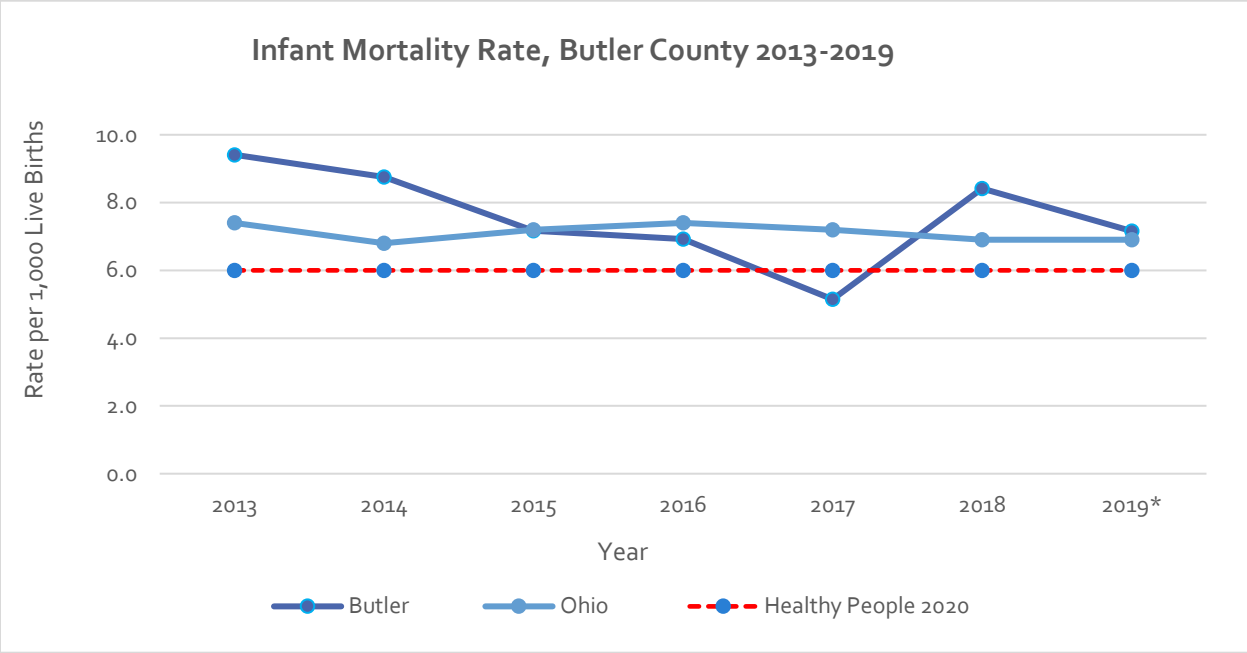
Source: 2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.
2019* is provisional; ODH finalizes data by fall of the subsequent year.

Despite the challenges faced by Butler County, there has been an increase in efforts to reduce infant mortality, end homelessness and the opioid crisis, increase food security, and improve access to transportation. Butler County is a resilient community, with a sense of pride that encourages people to come together to improve the lives of all residents.

Resilience through Equity



INFANT MORTALITY AND BUTLER COUNTY



Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.

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Overall, Butler County's infant mortality rate has been decreasing since 2012. From 2007-2012, Butler County's infant mortality rate for all races was 7.1 per 1,000 live births, compared to Ohio's IMR of 7.7 and the United States' IMR of 6.3. In 2019, 32 infants in Butler County died before their first birthday. The overall infant mortality rate decreased from 8.4 deaths per 1,000 live births in 2018 to 7.6 deaths per 1,000 live births in 2019.

QUARTERLY INFANT MORTALITY TREND

One way to measure infant health in Butler County is to track the number of infant deaths per month. The number of deaths was highest in the months of quarter 4. This type of surveillance allows for quick intervention and programmatic shifts when there is an increase in infant deaths.

		(Oct 2018- Sept. 2019)			**(Oct. 2019-Sept 2020)**		
		Infant Deaths	Live Births	**IMR**	Infant Deaths	Live Births	**IMR**
Quarter 1	October	6	419	**8.1 per 1000 live births**	2	370	**7.2 per 1000 live births**
	November	0	342		1	345	
	December	3	349		5	401	
Quarter 2	January	6	374	**8.2 per 1000 live births**	1	381	**6.7 per 1000 live births**
	February	2	331		1	320	
	March	1	386		5	347	
Quarter 3	April	0	324	**5.5 per 1000 live births**	1	348	**4.5 per 1000 live births**
	May	4	393		1	372	
	June	2	375		3	403	
Quarter 4	July	2	394	**11.4 per 1000 live births**	3	415	**10.2 per 1000 live births**
	August	6	454		4	372	
	September	6	375		5	394	
	Total	38	4516		32	4468	

11.4

Infant Mortality Rate
2018 (Quarter 4)

10.2

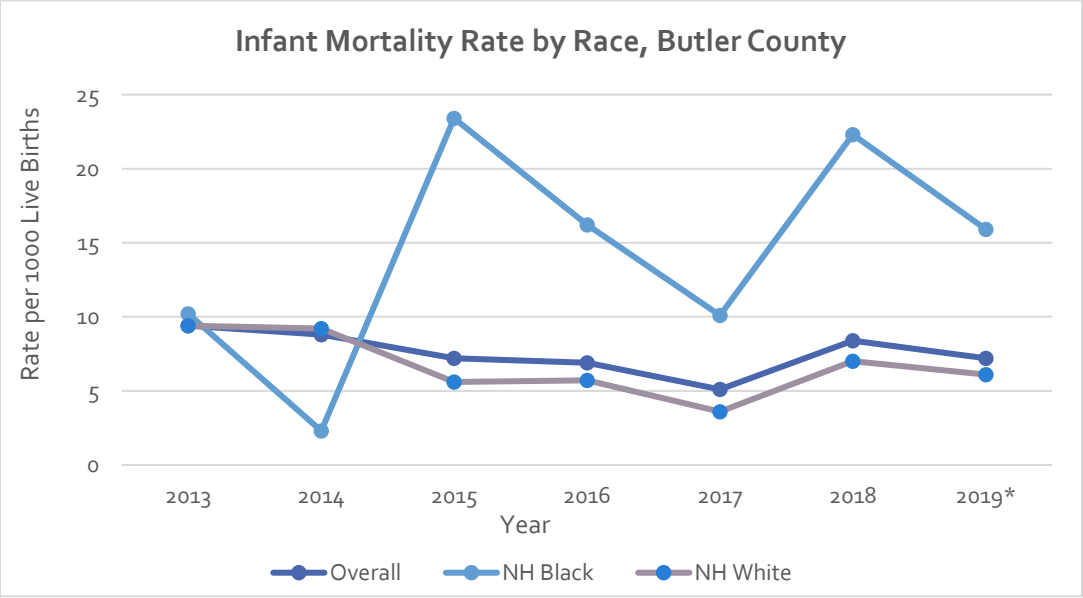
Infant Mortality Rate
2019 (Quarter 4)

Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.
2019* is provisional; ODH finalizes data by fall of the subsequent year.

RACIAL DISPARITY IN INFANT MORTALITY

Although Butler County's overall infant mortality rate (IMR) is decreasing, there are substantial differences in the infant mortality rate for babies of different racial groups. The IMR for non-Hispanic Black infants is consistently more than twice that of non-Hispanic White infants.

In 2019, the IMR for non-Hispanic Black infants was 15.9 per 1,000 births compared to 7.2 per 1,000 births for non-Hispanic White infants. The IMR for non-Hispanic Black people decreased 6.4% from the previous year. The significantly higher infant mortality rate in non-Hispanic Black infants highlights the need for interventions.



Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.

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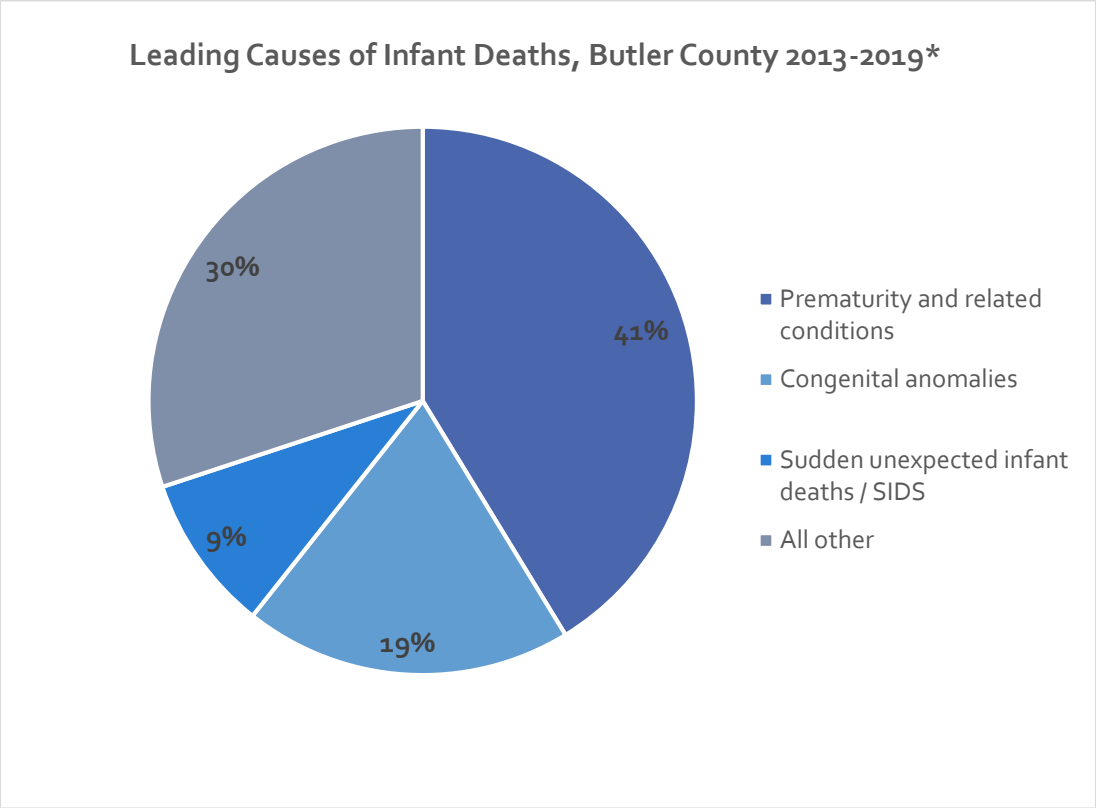
LEADING CAUSES OF INFANT MORTALITY

The top three causes of infant deaths in Butler County for the period 2013-2019 were prematurity and related conditions, congenital abnormalities, and sudden unexpected infant deaths (SUID). SUID are deaths in infants younger than 12 months of age that occur suddenly, unexpectedly, and without obvious cause. SUID includes sudden infant death syndrome (SIDS) and other sleep-related infant deaths due to unknown cause, as well as accidental suffocation and strangulation in sleeping environment (CDC, 2019). A diagnosis of SIDS is made if the

cause of the baby's death remains unexplained after investigation and autopsy. Prematurity, congenital abnormalities, and SUID accounted for 70% of all infant deaths. All other causes accounted for 30% of all infant deaths in 2013-2019.



Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.
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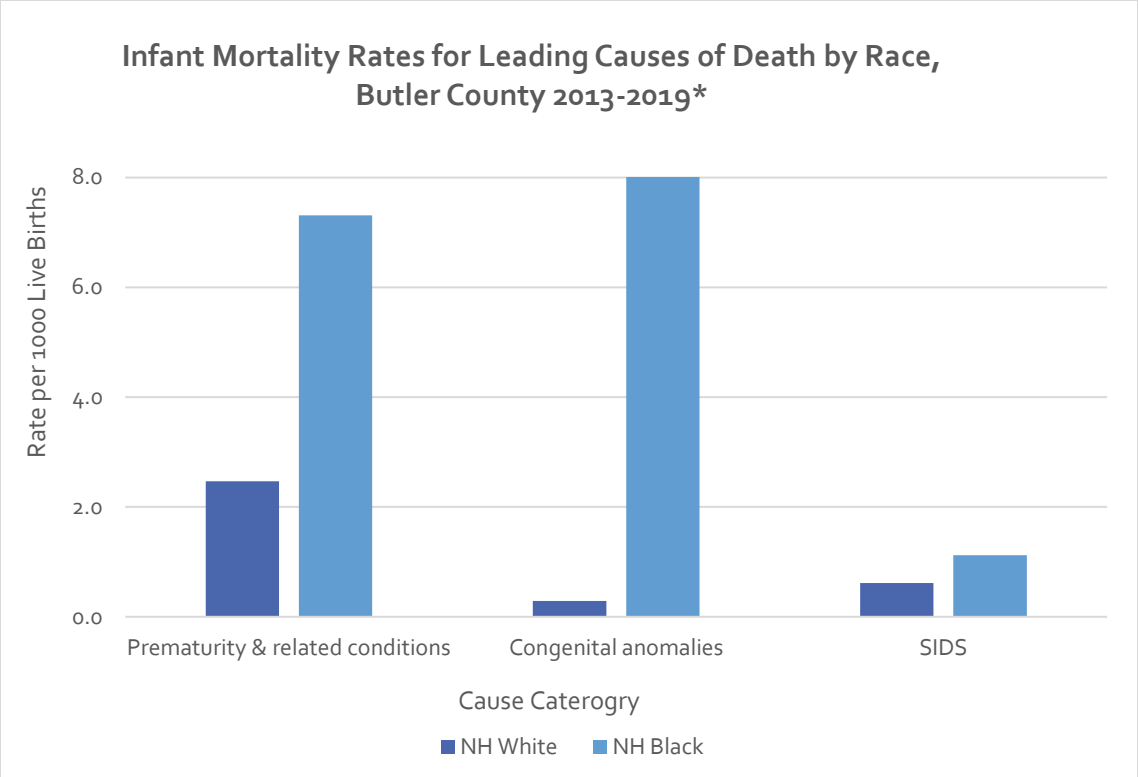
LEADING CAUSES OF INFANT MORTALITY RATE BY RACE

Within each of the three leading causes of infant death in Butler County, infants of non-Hispanic African American mothers had the highest infant mortality compared to infants of non-Hispanic White mothers. The biggest disparities are seen with prematurity-related conditions and congenital anomalies. Infants of non-Hispanic African American mothers are almost 5 times more likely to die from prematurity-related conditions, and over 8 times more likely to die from congenital anomalies.



Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.

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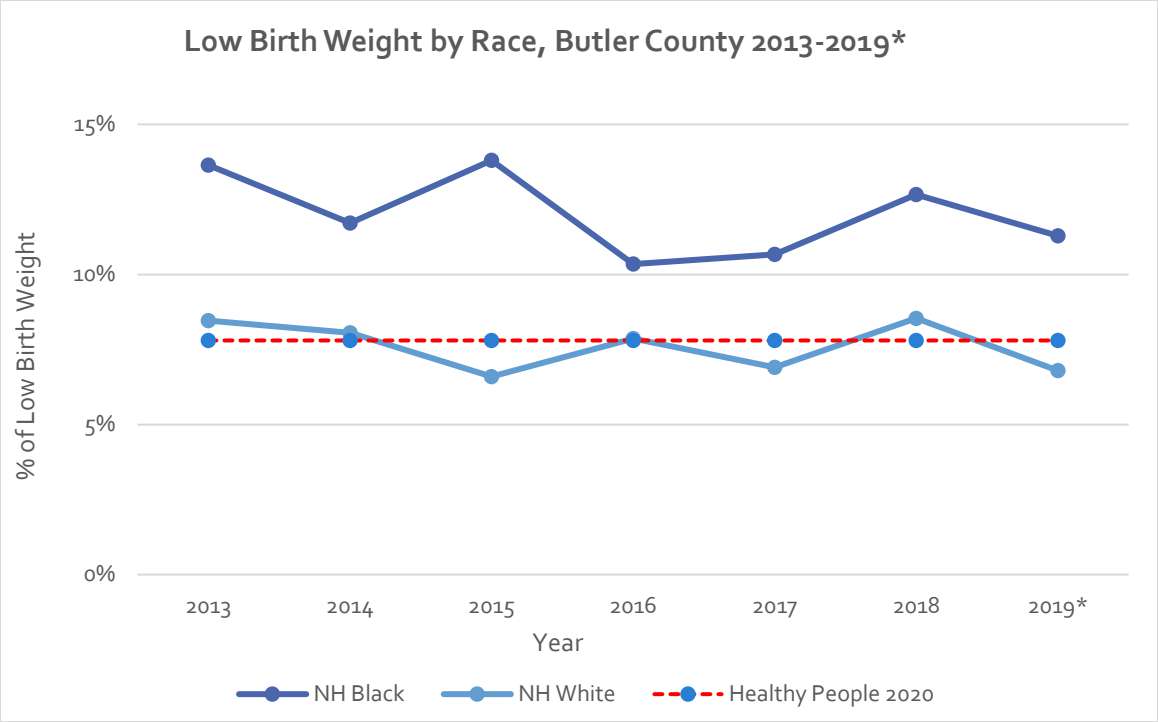
LOW BIRTH WEIGHT

Low birth weight (LBW) is when a baby is born weighing less than 5 pounds, 8 ounces (2,500 grams). Most babies born between 37 and 40 weeks weigh somewhere between 5 pounds, 8 ounces (2,500 grams) and 8 pounds, 13 ounces (4,000 grams). Premature birth and fetal growth restriction are the most common causes of low birthweight. The earlier a baby is born, the lower the birthweight of the baby.

In 2019, the LBW rate for non-Hispanic Black infants decreased from 13% in 2018 to 11% in 2019. The average low birth weight for non-Hispanic Black infants in Butler County was 1.5 times higher than non-Hispanic White infants from 2013-2019. The Healthy People 2020 goal is to reduce low birth weight to 7.8% of live births.



Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.

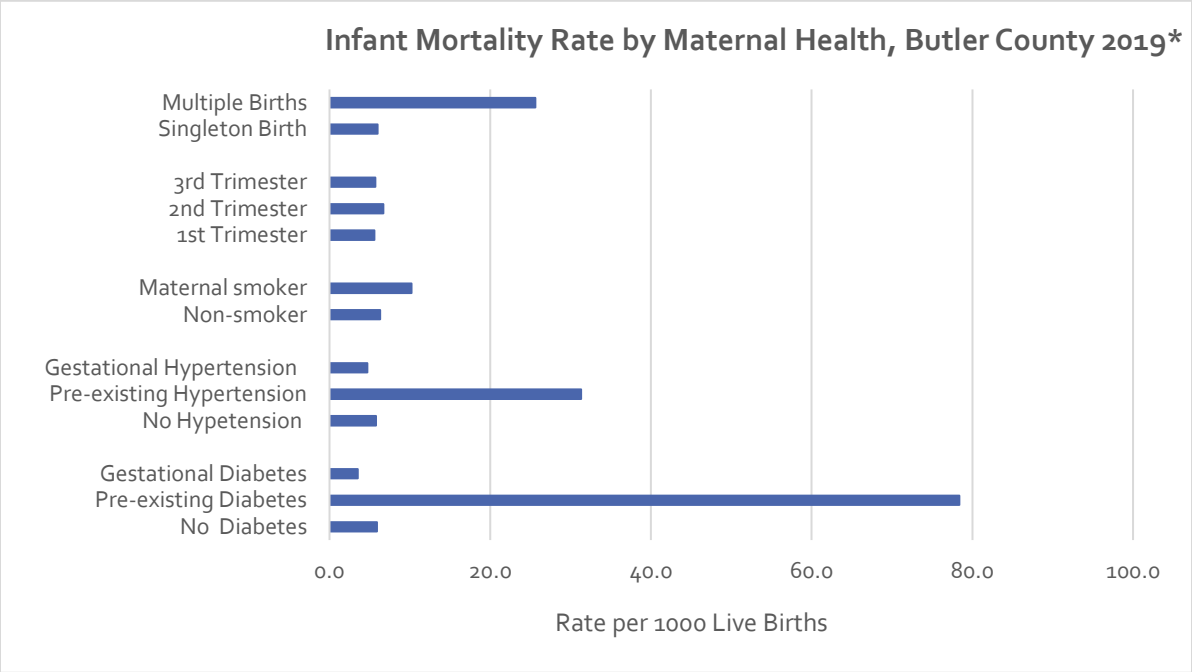
2019* is provisional; ODH finalizes data by fall of the subsequent year.

INFANT MORTALITY BY MATERNAL HEALTH

Maternal health is the health of women during pregnancy, childbirth, and the postnatal period (WHO). Some women have health problems before pregnancy, while others experience health problems that arise during pregnancy that could lead to complications. Pregnancy-related complications are closely linked to infant deaths. The following data reflect the maternal health of Butler County:

- **Hypertension**: Infants born to women with pre-existing hypertension had a higher infant mortality rate (31.3) than infants of women with no hypertension (5.8) and gestational hypertension (4.7).
- **Diabetes**: Infants born to women who had preexisting diabetes before pregnancy had a higher mortality rate (78.4) than infants born to women with no diabetes (5.9) and gestational diabetes (3.5).

- **Prenatal Care**: Infants of women with late prenatal care (6.2) had higher rate of infant mortality than women with early prenatal care (5.6). Late prenatal care is defined as mothers who reported receiving prenatal care in their second and third trimester.
- **Smoking**: Infant mortality rate was higher of women who smoked (10.2) during pregnancy than women who did not smoke (6.3). Smoking is defined as smoking one or more cigarettes during any of the three trimesters of pregnancy.
- **Plurality**: Infant mortality rate was higher of women with multiple births. Infants of multiple births (25.6 IMR) were more than four times likely to die before their 1st birthday than singleton births (6.0 IMR).



Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.

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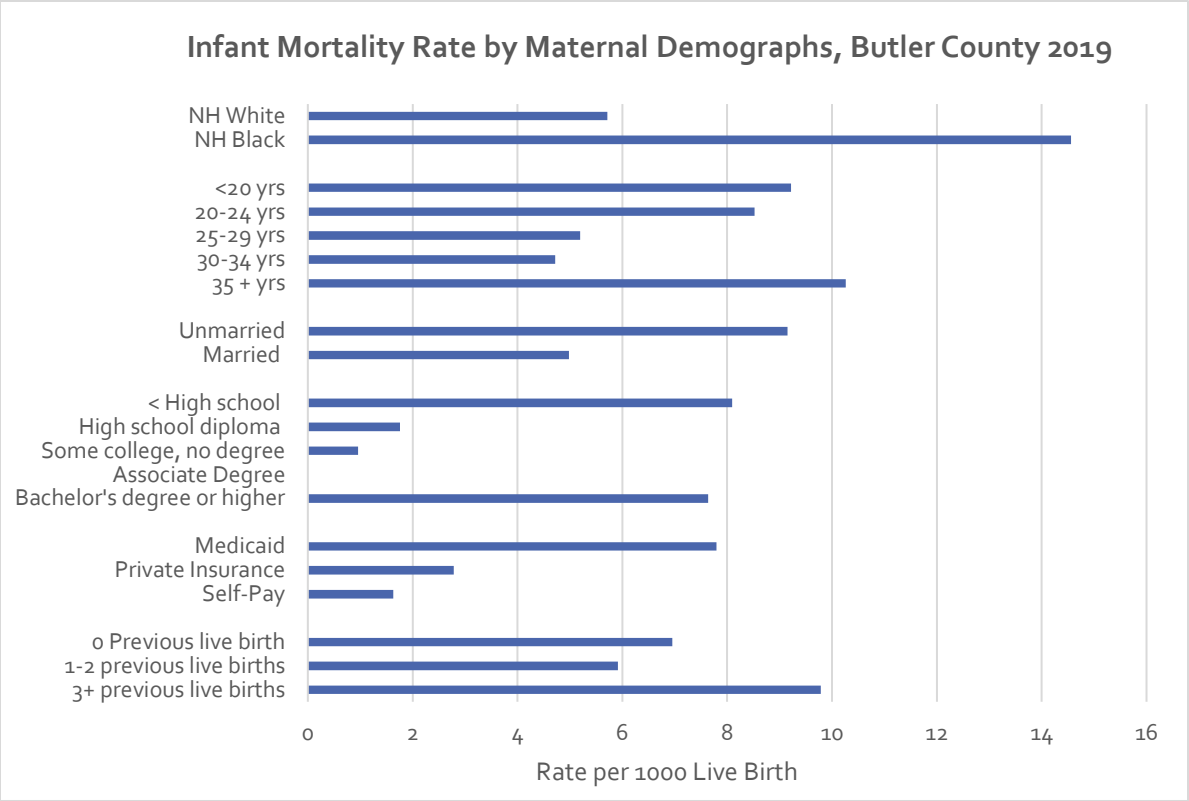
INFANT MORTALITY BY MATERNAL DEMOGRAPHICS

Maternal demographics include the race and ethnicity, age, education, marital status, health insurance type, and family income of the mother during pregnancy. The following data reflect the maternal demographics of Butler County:

- **Race**: The infant mortality rate was higher for infants born to non-Hispanic African Black mothers (14.6) than non-Hispanic White (5.7).
- **Age**: Babies born to older women, age 35 years and over, had a higher infant mortality rate (10.3) than babies born to younger women (6.9 average).
- **Marital Status**: Infants born to unmarried women (9.1) had a higher mortality rate than those born to married women (5.0). Marital status is defined as the mother being married during conception, birth, or any time in between.
- **Education**: The infant mortality rate was higher among women with less than a high school education (8.1) than women with bachelor's degrees or higher (7.6).
- **Insurance Payer Source**: The infant mortality rate was higher of mothers covered by Medicaid (7.8) than infants of privately insured women (2.8).



Source: 2013-2019 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data.

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NEIGHBORHOOD NAVIGATION SERVICES

Neighborhood Navigation is a downstream intervention that serves women in Butler County who are eligible for services. The Neighborhood Navigator (NN) connects with women who are pregnant and who have a risk factor for a poor birth outcome, such as having a previous miscarriage or stillbirth. The NN works closely with clients to understand which supports, resources, and items are needed to improve the health of mom and baby, in an effort to improve infant vitality.

The NN conducts extensive outreach in the community, searching for pregnant women who are in need of support and at risk for poor birth outcomes. "Hotspots," or areas in which concentrated numbers of babies were born too early or too small in Butler County, were identified using census tract data. Outreach efforts include emphasis within the identified hotspots.

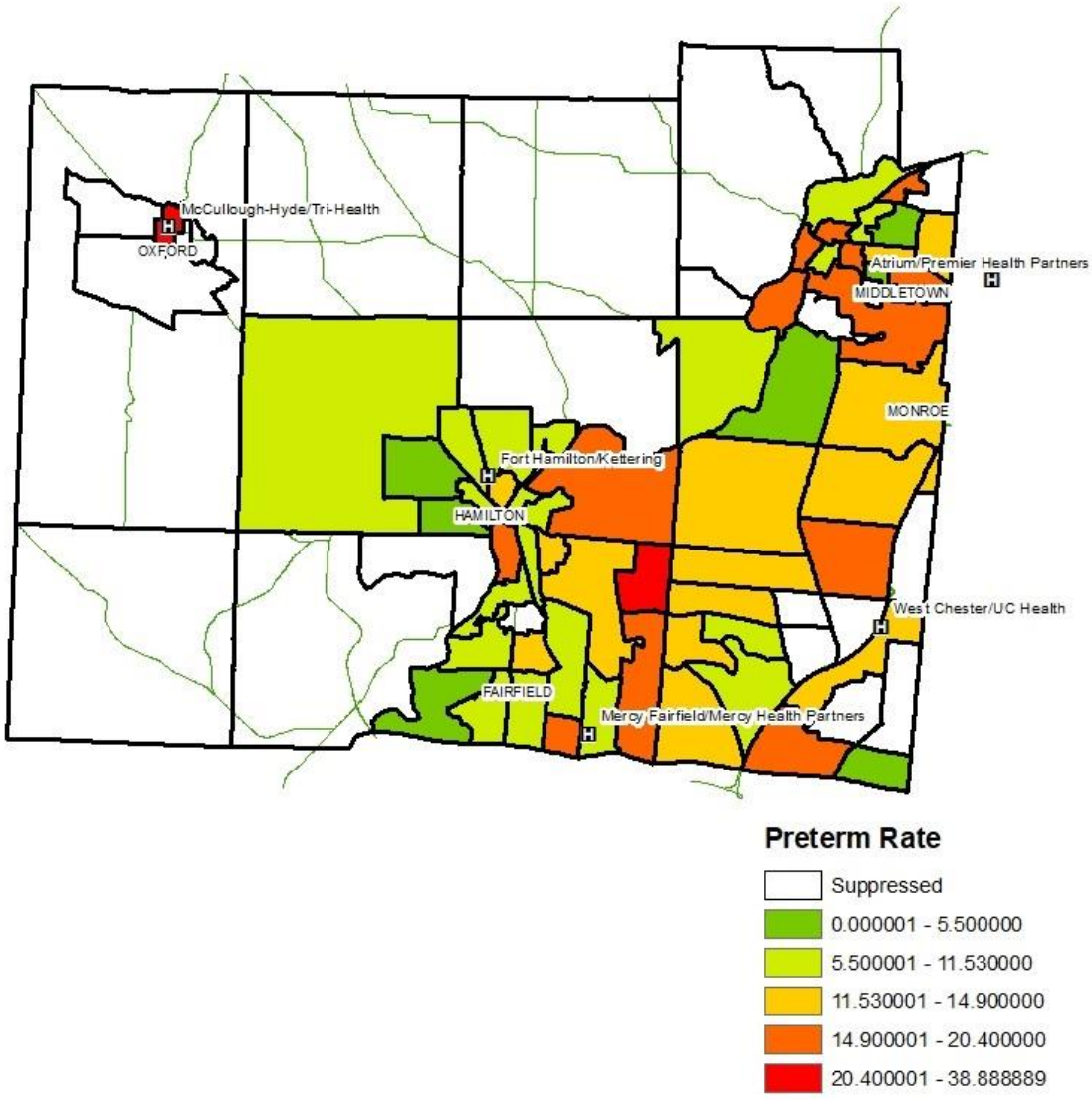
To be eligible for OEI 2.0 services, a woman must be a Butler County resident, pregnant, and have an annual household income below 200% federal poverty level. In addition, a woman must meet one of the following risk factors:

Risk Factors
Previous preterm birth (gestation <37wks)
Previous low birth weight birth (<2,500g)
Under age 25
User of tobacco products in home
History of unstable housing or homelessness
Current diagnosed medical condition
History of child abuse or neglect

NON-HISPANIC PRETERM BIRTH RATE BY CENSUS TRACT, BUTLER COUNTY, 2008-2019

Butler County has disparate health outcomes in different parts of the county. The maps show the 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 the non-Hispanic Black preterm birth rate during the period 2008-2019 were tracts 101.01 (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%).

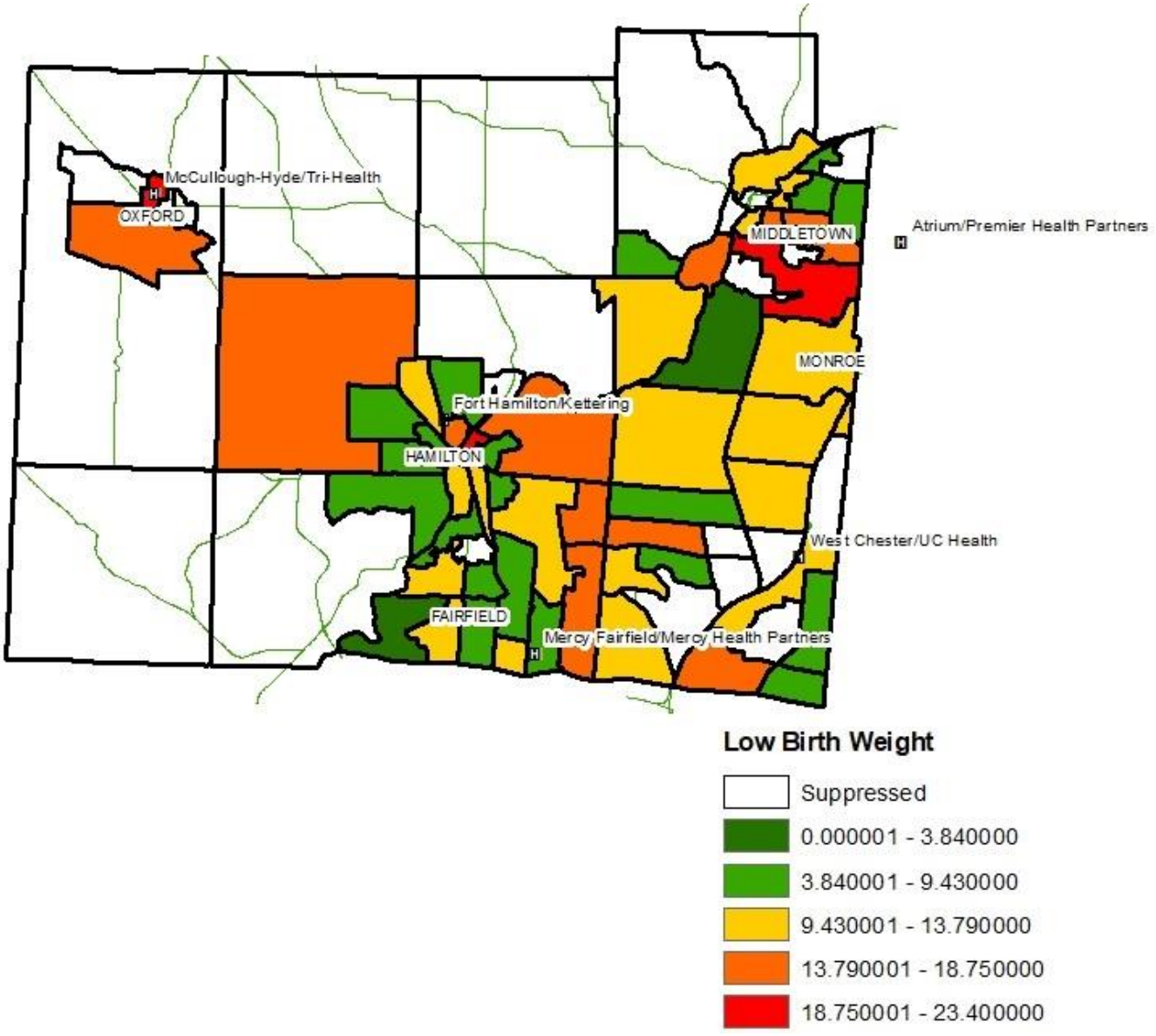
Non-Hispanic Preterm Birth Rate by Census Tract, Butler County, 2008 - 2019



PLACE MATTERS

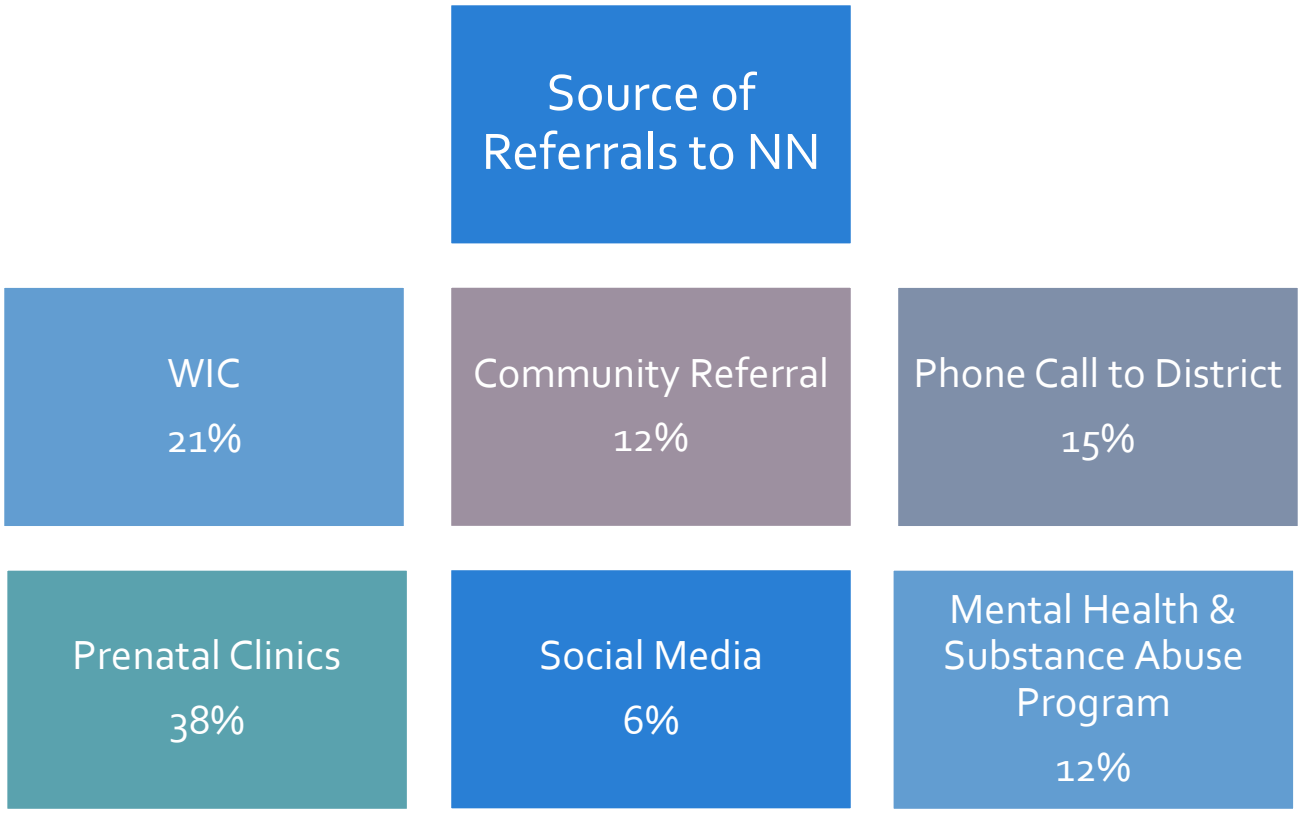
The map shows the non-Hispanic Black low birth weight rate by census tract in Butler County. The top ten census tracts for the non-Hispanic Black low birth weight rate during the period of 2008-2019 were tracts 144 (23.4%), 101.01 (22.2%), 146 (22.2%), 141 (21.4), 133(18.8%), 111.31 (18.2%), 134 (16.7%),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



AVENUES OF OUTREACH

The OEI outreach plan includes many avenues to connect with women who are underserved, lacking services or pregnancy support. Partnerships include hospitals, prenatal clinics, WIC, local businesses, and the faith community. Outreach tools including social media, canvassing on foot in hotspot locations, and the participation in local events have been utilized as outreach tools.



The NN built partnerships with prenatal clinics and WIC to help support their mission of serving pregnant women in the county. Both of these avenues of outreach, through staff meeting visits, presentations, consistent communications, and exceptional service from the NN, were most successful in referring pregnant moms. These two avenues also saw the largest volume of pregnant women out of all of our referring partners.

OEI used outreach strategies that focused on communities of color to increase the identification of African American moms for our Navigation services. When canvassing neighborhoods, OEI focused efforts on neighborhoods where the population was

predominately made up of African American residents. OEI also fostered a close partnership with Mercy Fairfield Hospital, which delivers the most African American babies in the county. We also aimed to reach African American families by posting our social media content in Facebook groups made for and by African American residents.

With a small number of Facebook followers, outreach efforts through social media have yet to be fruitful. The NN increased OEI social media presence on Facebook, starting March of 2020. Most recently, there has been an increase in posting a variety of infant vitality and maternal health materials outside of NN. Increasing the number of posts and including an assortment of topics of interest, such as safe sleep and breastfeeding, will create a greater appeal to a larger community of women.

OEI has closed gaps in community outreach by connecting pregnant women, who would have otherwise been unaware of this resource, to home visiting programs. Of all women served, 78% were interested in and referred to home visiting programs. The follow up calls the NN made helped to ensure that each woman was connected to a program and receiving services. OEI also has a boots-on-the-ground approach to outreach as team members go door-to-door advertising for services and bringing awareness to infant mortality in the county.

NEIGHBORHOOD NAVIGATION EVOLUTION FROM OEI 19 TO OEI 20

Data-driven NN strategies for fiscal year (FY) 20 have increased significantly with emphasis in hotspot locations. More time has been spent reaching into Middletown, Fairfield, and Hamilton. Efforts include door-to-door canvassing in apartment complexes and neighborhoods. OEI partnered with United Way and coordinated volunteers to canvass multiple Butler County locations, handing out marketing materials, talking with neighbors, and educating the public about infant vitality efforts. Materials included Neighborhood Navigation and Home Visiting Flyers. During canvassing, volunteers communicated the inequities in health outcomes between African American and White babies and encouraged families to share our flyers widely. This canvassing event correlated with infant mortality awareness

month. During this month, OEI also connected with local churches to raise awareness about infant mortality and health inequities.

The OEI team and Navigation efforts are becoming well known for using the latest data to guide our work and outreach strategies. We have visited three county hospitals, presenting on hospital-specific data and how hospitals can better connect moms to NN services.

Butler County OEI is committed to quality improvement and is continuously monitoring and evaluating programming to better serve families. Neighborhood Navigation outreach is always evolving and changing to better suit our community needs and to meet moms where they are. New partnerships are being built with local homeless shelters, food banks, refocusing our efforts on churches with younger congregations, and working alongside a county hospital that serves the largest number of African American patients.

As OEI focuses on reducing health disparities, as African American women face a greater burden of poor birth outcomes, outreach efforts have been tailored to specifically serve women of color. African American and Brown women have been identified through various methods of outreach including canvassing in predominantly African American neighborhoods, posting marketing materials in Facebook groups created by and for people of color.

NEIGHBORHOOD NAVIGATION, A SUCCESS STORY

"I started working with Alison in early January this year. She was a referral that was sent over from a partner agency. During our first conversation, she expressed concern for being able to keep her baby after birth. She had been working with community behavioral health consistently to treat her addiction. But she felt as if she was in a toxic relationship, was in the process of leaving her boyfriend and getting her own apartment and actively trying to stay sober. She was struggling to keep her employment and was dealing with guilt. Alison has a daughter that has been in the custody of her grandparents for the last few year as Alison was moving through recovery. Alison was willing to do anything to keep her baby. I was

able to refer her to Cribs for Kids and get her a safe sleep option, help her find housing, set her up with a home visiting service and also connect her with further mental health services. Alison kept attending parenting classes, moved into her new place and eventually birthed a healthy baby boy. She has kept in touch with the OEI team and is still sober, employed and parenting!" – Neighborhood Navigator

NEIGHBORHOOD NAVIGATION, WOMEN SERVED (TWO-YEAR COMPARISON)

Butler County OEI team served 80 women in FY19, meeting 77% of grant goals compared to 46 women served in FY20, with 46% goal met.

Number of Women Served Requirements in Butler County OEI, FY 19 – FY 20

	FY 19	FY 20
Required Number of Women Served	104	100
Average Monthly Goal to Meet Requirement	8.6	8.3

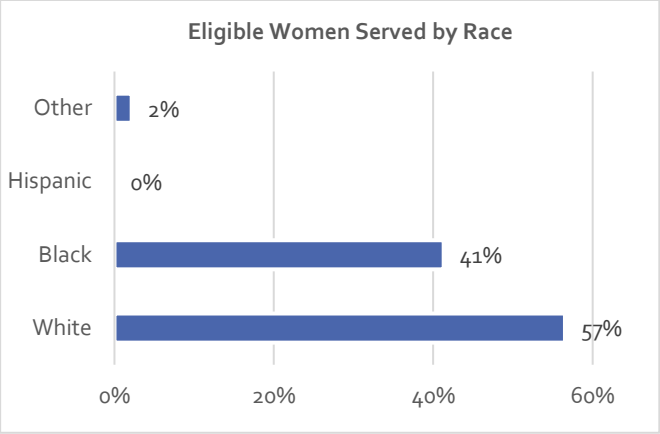
Actual Number of Women Served in Butler County OEI, FY 19 – FY 20

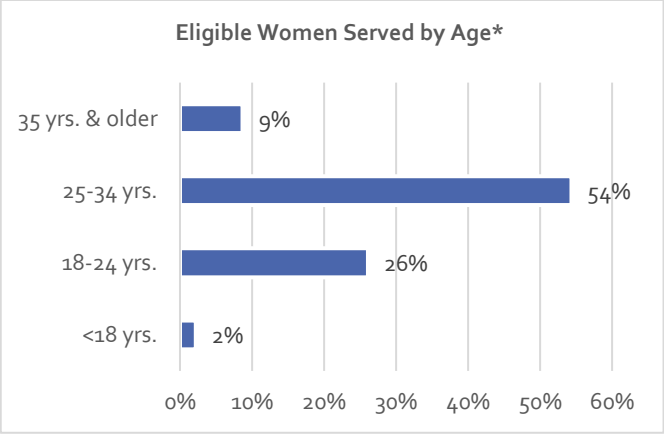
Month and Quarter	Number of Women Served FY 19	Number of Women Served FY 20
Oct.	0	11
Nov.	0	4
Dec.	0	8
Quarter 1	**0**	**23**
Jan.	2	7
Feb.	6	3

Mar.	6	3
Quarter 2	**14**	**13**
Apr.	5	1
May	6	0
June	9	3
Quarter 3	**20**	**4**
July	17	2
Aug.	25	3
Sept.	4	1
Quarter 4	**46**	**6**
Total	**80**	**46**
% of Goal Served	**77%**	**46%**

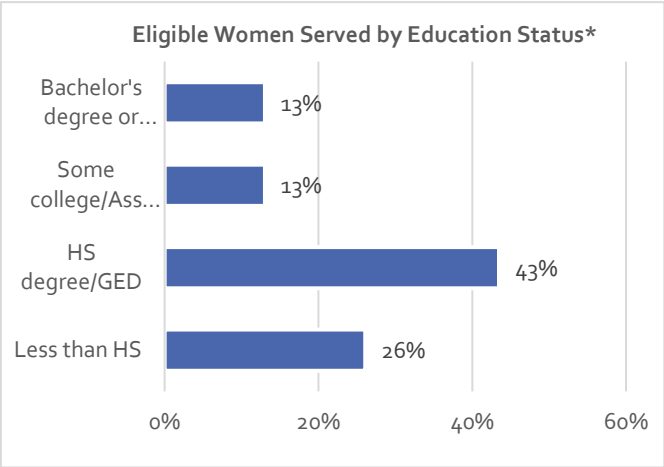
DEMOGRAPHICS FY20

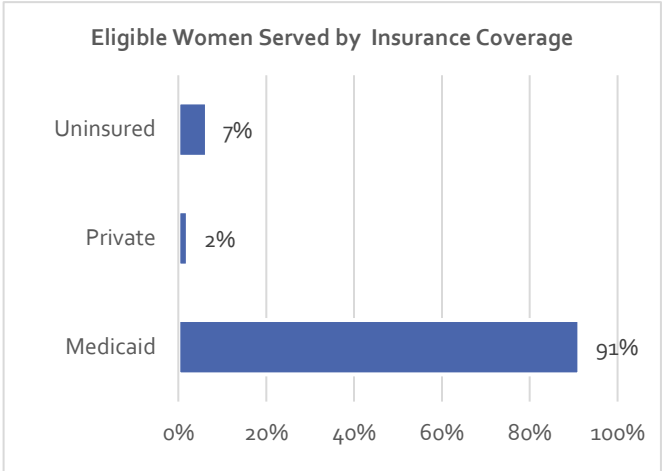
The majority of the women served in Butler County were White (57 %), between the ages of 25 and 34 years (54 %). Of all the women served, 43% had a high school degree or GED, and 91 % reported Medicaid as their primary insurance. A majority (95%) of the women served reported having access to prenatal care.



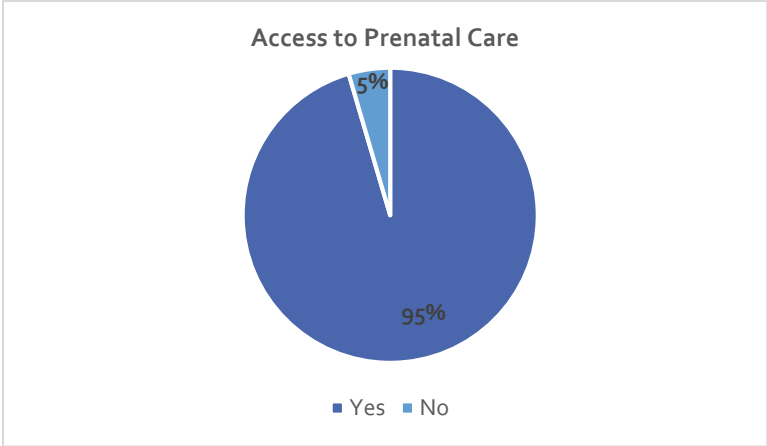


*The above graph includes 42 of the 46 women served, as 4 clients did not report their age.



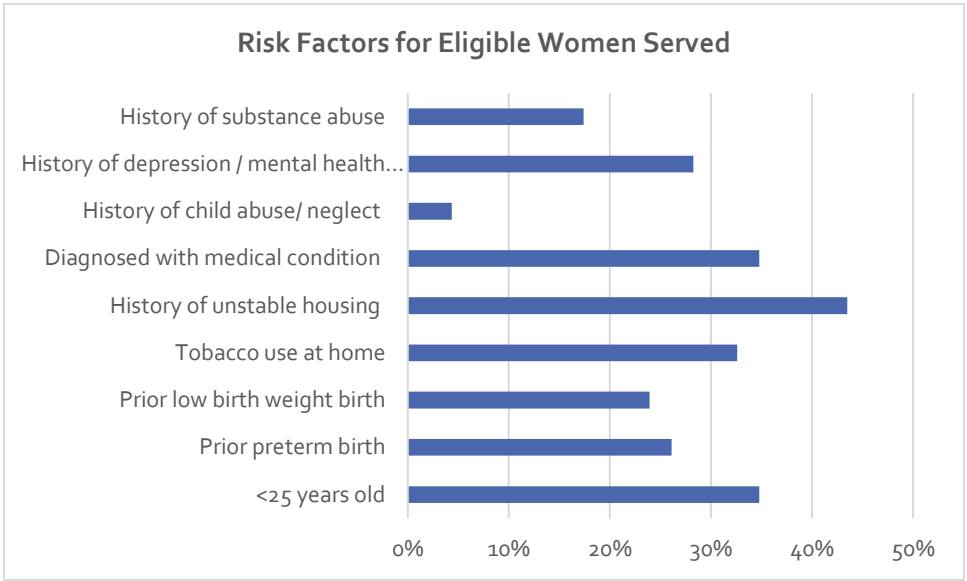


* The above graph includes 44 of the 46 women served, as 2 clients did not report their education status.



RISK FACTORS

The majority of women served for OEI 2.0 were over the age of 25 years old (65%) and 43% reported having unstable history of housing. Many women had more than one risk factor, therefore, the percentages do not sum to 100%.



NEEDS/REFERRAL IDENTIFIED

A total of 121 women were identified, of whom 93 were screened, and 46 were eligible to participate in OEI FY20. Of the 150 needs identified by the women served, 88% of the needs were met with applicable referrals.

Indicators	
Number of women identified	**121**
Number of women screened	**93**
Number of eligible women served with 3 follow-ups	**46**
Total number of needs identified (eligible women)	**150**
Total number of referrals offered (eligible women)	**132**
% of needs met by referral	**88%**
Total number of referrals utilized	**86**
% of referrals utilized	**65%**

REFERRALS

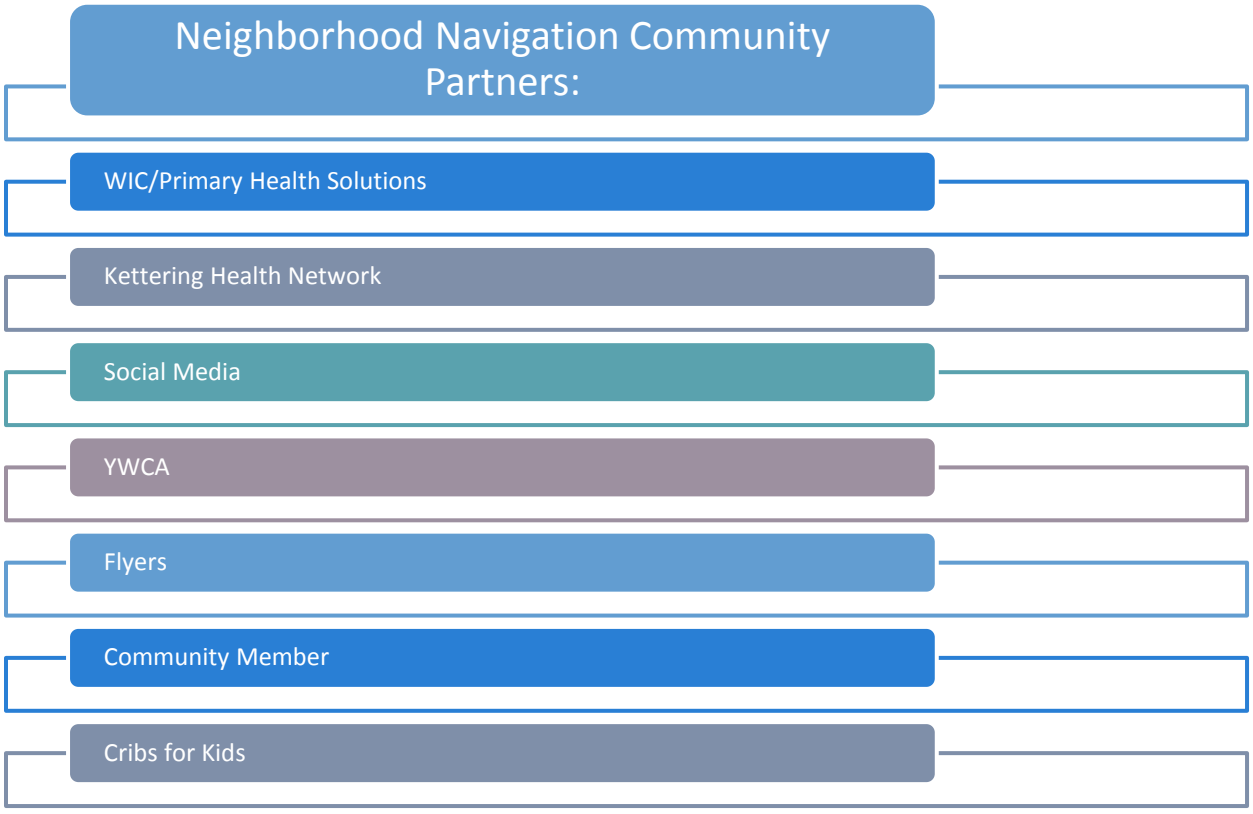
A total of 132 referrals were provided in FY20, (88%) of needs identified were addressed by referrals. The NN referrals highlighted a continued need in the community for home visiting programs. Many of the pregnant women served had various needs and multiple barriers to positive birth outcomes and would benefit from long-term support of Community Health Workers. The NN has built a close partnership with Central Intake and home visiting programs, referring pregnant women to their services, and getting them connected with continuous support. Due to the diversity and multiple needs of the women served, the Project Coordinator met with Community Health Workers to receive input on shaping policy in the community. The NN also frequently referred pregnant women to locations where they could receive baby items, car seats, cribs, etc. Women of Butler County are finding it difficult to

purchase baby essentials and prepare for baby's arrival. This highlights they need for income equality, employment stability, and an increase in wages, allowing mothers to provide for their infants.

TYPES OF REFERRALS MADE, PERCENTAGE OF REFERRALS OFFERED

COMMUNITY PARTNERS

Neighborhood Navigation has a network of community partners who refer pregnant women for OEI services. Through outreach efforts, we have gained partnerships with organizations that frequently connect with pregnant women in the county. These partners trust our NN to assess the needs of and to improve the health and wellness of both mom and baby.



NEIGHBORHOOD NAVIGATION SUCCESSES AND CHALLENGES:

The Navigation program saw many successes and challenges throughout FY20. The NN effectively connected clients with resources with a 65% of referral utilization rate. The NN was exceptional at creating trusting relationships with clients and having meaningful conversations about the needs of pregnant women and gaps in services that would be of great benefit to clients. The NN built close relationships with many programs in our county, including Moms Quit for Two smoking cessation resource, Baby Café breastfeeding program, various shelters with recovery programs for mothers with substance abuse issues, and Jobs and Family Services. These partnerships increased the already robust resources OEI referred mothers to and helped to serve individual needs of our clients. New in FY 20 is the incentive program, created and led by the NN. Each mother served is given a $25 gift card in lieu of her time. The incentive program is another way the OEI is serving moms, helping to provide families with essential baby items.

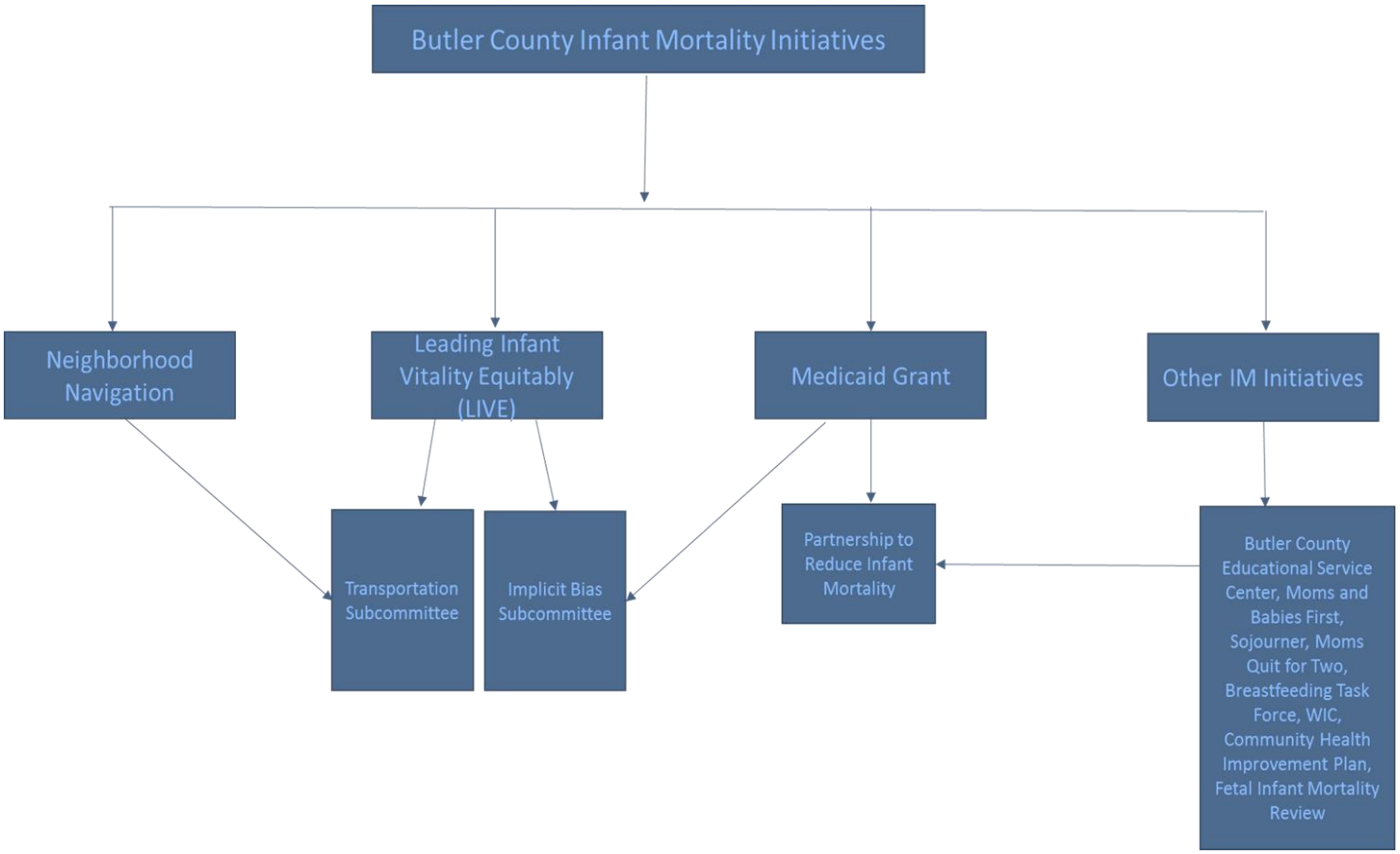
The Navigation program began to face myriad challenges in March of 2020 when the COVID 19 pandemic hit our county. The NN had a sharp decrease in referrals from partnering agencies as programs were shutting down and mothers social distanced. During this time, OEI increased social media efforts and connected with a local food bank to reach out to moms in need. Another challenge occurred when resources for mothers were no longer available due to the pandemic. In FY 19 the NN had great success connecting with pregnant women through community events and making in-person connections with clients. With the presence of COVID19, community events have been rare and one-on-one visits have ceased. This has caused a decrease in the number of women the OEI team have been able to reach and connect with. Although outreach efforts have adapted to our current crisis, OEI has served fewer women through FY 20.

LEADING INFANT VITALITY EQUITABLY

OEI of Butler County has strengthened its infant mortality coalition, Leading Infant Vitality Equitably (LIVE), by forming two sub-committees with a unique focus. The first sub-committee created was an implicit bias work group, whose goal is to reduce racism in our county, specifically targeting health care professionals through training and educational materials. LIVE gained three new coalition members, each representing a local hospital. These coalition members participate on the implicit bias sub-committee to inform the work and bring implicit bias materials to hospital staff. The second LIVE sub-committee focuses on transportation. LIVE has collaborated with the Butler County Regional Transit Authority to advocate for bus routes and bus stops that better serve our pregnant women and mothers. LIVE is working to add hospitals and prenatal offices to bus routes, while also advocating for neighborhoods that are underserved by public transportation. The transportation sub-committee is also creating a resource pamphlet, outlining transportation options including bus routes and stops, to educate pregnant women on transportation avenues. These pamphlets will be used by the Neighborhood Navigator, Community Health Workers, and medical providers.
Butler County OEI and LIVE has also become a well-known source of reliable and relevant data on infant mortality, social determinants of health, and statistics on our hospitals. The OEI

Epidemiologist and Project Coordinator have facilitated conversations and presentations on infant mortality. OEI has presented to several hospitals, coalitions and partners. It has also presented at community events to educate the public on infant mortality, to show how the social determinants of health affect the lives of mothers and infants, and to explain the initiatives of both LIVE and Neighborhood Navigation. The OEI Epidemiologist, by fulfilling data requests, writing reports, and giving presentations, is helping to shape programming of local coalitions and organizations focusing on maternal and child health.

OEI upstream strategies have evolved since OE 19 as the structure of the LIVE team has improved. A space has been created for each subcommittee to meet individually and both LIVE co-leads participate in each subcommittee. LIVE has had great success with the invention of two sub-committees and is making great strides in creating real change in the community. LIVE has also begun working on building an advisory board, consisting of African American women and mothers, who will guide our work and help us advocate for change.



"I've been dealing with back and pelvic pain during my pregnancy, which isn't getting better and has been increasing. I shared this with the doctors but often felt dismissed. I didn't feel my voice of reason regarding my pain was heard until a doctor who looked like me understood and gave me tips to help, instead of telling me there's nothing they can do." - African American Mother living in Butler County

DATA DISSEMINATION

OEI and LIVE have created a reputation for analyzing and disseminating local, current, and meaningful data to inform infant vitality efforts. OEI has presented to hospitals, at community events, to coalitions, and during partner meetings. OEI has created reports, data visualizations, and briefs given to the community to educate the public and partners about the state of infant mortality, what is being done to combat infant deaths, and what can be done to improve future efforts.

Maternal and Infant Health Data Dissemination in Butler County, FY19 – FY20

Training Topics/Presentations	Code
Local Infant Mortality Data	DAT
Local Infant Vitality Resources	IVR
Social Determinants of Health Data	SDD
Implicit Bias	IMB

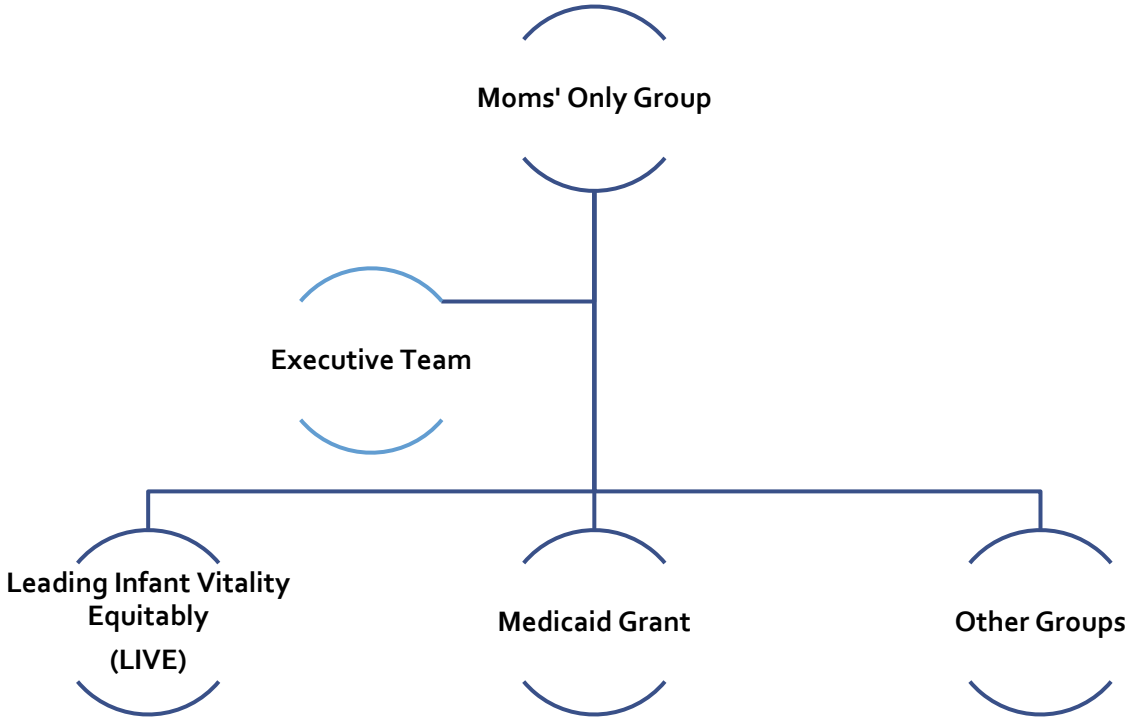
Agency/Organization	2019 Oct - Dec	2019 Jan - Mar	2019 April - June	2019 July - Sept	2020 Oct - Dec	2020 Jan - Mar	2020 April - June	2020 July - Sept
Mercy Health Hospital - Fairfield	DAT IVR IMB							DAT IVR IMB
Community Health Works, Direct Service Providers, Medical Professionals	IMB					IMB		
Family and Children First Council	DAT IVR IMB					DAT IVR		
Fort Hamilton Hospital	DAT							DAT

	IVR IMB							IVR SDD
PRIM	DAT SDD IMB							
BCESC, Community Health Workers, Direct Service Providers, Medical Professionals		DAT SDD IMB						
UC West Chester								DAT IMB
LIVE						DAT SDD		

PLANS FOR THE FUTURE

Butler County's OEI has new initiatives for fiscal year 2021 in regards to outreach, data collection, and the structure of LIVE. OEI is working closely with Partnership to Reduce Infant Mortality (PRIM) to create a Mom's Only Group to inform the work of LIVE and advocate for change in maternal and child health care. The Mom's Only Group is intended for African American moms to gather, share experiences, guide LIVE in policy and practice change efforts, and to advocate for policies that affect African American moms and infants for the better. This group will not only offer support for the moms of our county but will serve as a springboard for change. Our local Community Health Workers and our Neighborhood Navigator will be imperative to recruiting and engaging moms. LIVE also looks to create an Executive Team to support LIVE's mission and goals. This team will be comprised of local leaders, such as County

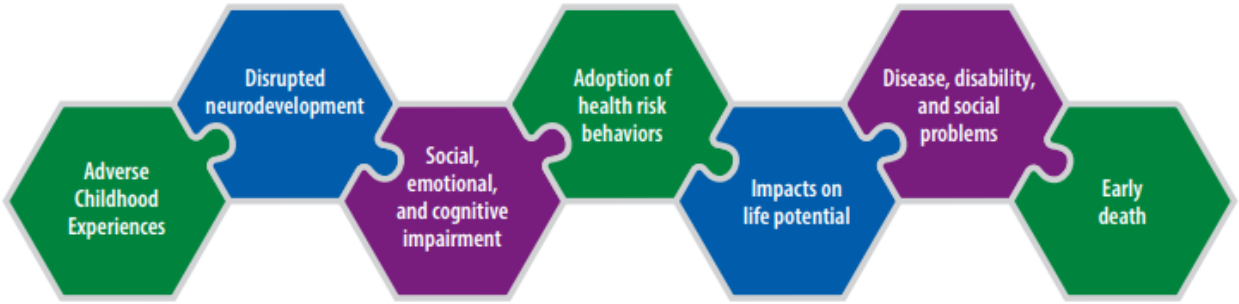
and Health Commissioners, who can use their influence to advocate for LIVE's work and to further our message and efforts. The Moms' Only Group will also be able to provide local initiatives with much needed qualitative data to help shape all infant vitality programs in the county.



The OEI team will create two additional reports this coming year to highlight the need to impact the social determinants of health (SDOH) and move the needle on infant vitality efforts. The OEI Epidemiologist will prepare a report on racism and implicit bias to show how assumptions, prejudices, and racist structures affect the health of African American and Brown moms and babies. This report will serve to educate the public on the deadly reality of racism, how African American and Brown residents suffer disproportionally, and how to make change within the community. This report will also serve to advocate for the work of LIVE's implicit bias subcommittee, educate hospitals and prenatal offices, and to spark change. The OEI team, with leadership from the Epidemiologist, will also prepare a report on trauma, adverse childhood experiences, and SDOH that cause poor birth and health outcomes. This report will highlight the struggles our moms and families face and will provide data and narratives to

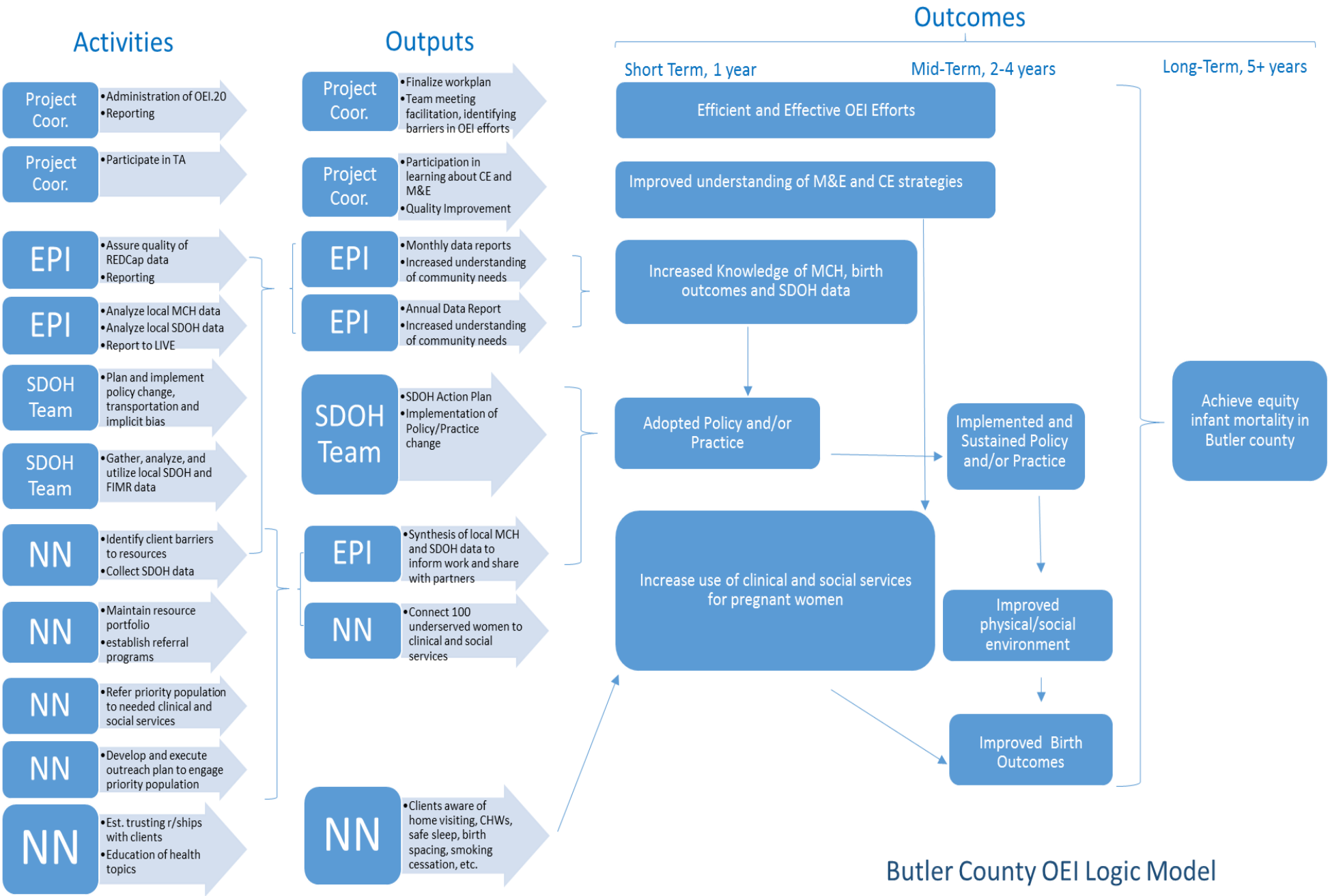
bring clarity to the intersection of SDOH, trauma, and health and will serve as a resource for program planning and county initiatives.

How Trauma and Adverse Childhood Experiences Lead to Poor Health



Outreach plans will also be updated to include more non-traditional avenues of outreach with the goal of reaching more African American moms and connecting underserved moms to resources. OEI will venture into avenues of outreach, seeking out moms who are often overlooked or have less access to resources. OEI will further increase partnerships with homeless shelters, the faith community, apartment complexes, contact-free community events such as a drive-thru resource event, and local businesses. OEI will also increase its social media presence and connect with food banks and Jobs and Family Services.

OEI continues to serve pregnant women and infants in the county to reduce infant mortality and improve both maternal and infant health. Neighborhood Navigation is continuously tailored and refined, and reaches into the community to connect underserved women to needed services and resources, supporting a healthy mother and infant. In addition, OEI recognizes that social determinants of health must be addressed to have profound changes in the health of our community. Leading Infant Vitality Equitably continues to change policies and practices to dismantle health inequities, focusing on eradicating racism, the root cause of inequities, and improving transportation accessibility, allowing pregnant women to receive needed care to support a healthy pregnancy.


Activities
Outputs
Outcomes
Short Term, 1 year
Mid-Term, 2-4 years
Long-Term, 5+ years
Project Coor.
•Administration of OEI.20
•Reporting
Project Coor.
•Participate in TA
EPI
•Assure quality of REDCap data
•Reporting
EPI
•Analyze local MCH data
•Analyze local SDOH data
•Report to LIVE
SDOH Team
•Plan and implement policy change, transportation and implicit bias
SDOH Team
•Gather, analyze, and utilize local SDOH and FIMR data
NN
•Identify client barriers to resources
•Collect SDOH data
NN
•Maintain resource portfolio
•establish referral programs
NN
•Refer priority population to needed clinical and social services
NN
•Develop and execute outreach plan to engage priority population
NN
•Est. trusting r/ships with clients
•Education of health topics
Project Coor.
•Finalize workplan
•Team meeting facilitation, identifying barriers in OEI efforts
Project Coor.
•Participation in learning about CE and M&E
•Quality Improvement
EPI
•Monthly data reports
•Increased understanding of community needs
EPI
•Annual Data Report
•Increased understanding of community needs
SDOH Team
•SDOH Action Plan
•Implementation of Policy/Practice change
EPI
•Synthesis of local MCH and SDOH data to inform work and share with partners
NN
•Connect 100 underserved women to clinical and social services
NN
•Clients aware of home visiting, CHWs, safe sleep, birth spacing, smoking cessation, etc.
Efficient and Effective OEI Efforts
Improved understanding of M&E and CE strategies
Increased Knowledge of MCH, birth outcomes and SDOH data
Adopted Policy and/or Practice
Implemented and Sustained Policy and/or Practice
Increase use of clinical and social services for pregnant women
Improved physical/social environment
Improved Birth Outcomes
Achieve equity infant mortality in Butler county
Butler County OEI Logic Model

REFERENCES

1. *Adverse birth outcomes*. (2013, November 1). MDRC. https://www.mdrc.org/adverse-birth-outcomes

2. *Butler County, Ohio population 2020*. 2020 World Population by Country. https://worldpopulationreview.com/us-counties/oh/butler-county-population

3. *Sudden unexpected infant Death & sudden infant death syndrome.* (2019, April 29). Centers for Disease Control and Prevention. https://www.cdc.gov/sids/data.htm

4. *Explore infant mortality in Ohio 2019 annual report*. America's Health Rankings. https://www.americashealthrankings.org/explore/annual/measure/IMR/state/OH

5. *Hamilton, Ohio population 2020 (Demographics, maps, graphs)*. 2020 World Population by Country. https://worldpopulationreview.com/us-cities/hamilton-oh-population

6. *How we improve maternal health*. (2020, March 6). Official web site of the U.S. Health Resources & Services Administration. https://www.hrsa.gov/maternal-health

7. *Medicaid's impact on health care access, outcomes and state economies*. RWJF. https://www.rwjf.org/en/library/research/2019/02/medicaid-s-impact-on-health-care-access-outcomes-and-state-economies.html

8. *Ohio Infant Mortality Annual Report.* (2018). Ohio Department of Health. https://odh.ohio.gov/wps/wcm/connect/gov/dd1865c0-909c-4378-a8e0-61e28364bbae/2018+Ohio+Infant+Mortality+Report.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JO00QO9DDDDM3000-dd1865c0-909c-4378-a8e0-61e28364bbae-n1Z1tQk

9. *Ohio Department of Health*, Center for Public Health Statistics and Informatics. 2013-2019. https://odhgateway.odh.ohio.gov/

10. Staff, B. (2017, July 23). *Low birth weight babies and African American women: What's the connection?* African American Women's Health Imperative. https://bwhi.org/2017/07/23/low-birth-weight-babies-African American-women-connection/

11. *Stats of the states - Infant mortality*. (2020, April 27). Centers for Disease Control and Prevention.https://www.cdc.gov/nchs/pressroom/sosmap/infant_mortality_rates/infant_mortality.htm

12. *Maternal Health.* (2020). World Health Organization. https://www.who.int/health-topics/maternal-health#tab=tab_1

DATA TABLES

Table 1. Butler County Infant Mortality Rate by Race, 2013-2019*

		Infant Deaths	Live Births	Infant Mortality Rate
Non-Hispanic African American	2013	5	491	**10.2**
	2014	1	444	**2.3**
	2015	11	471	**23.4**
	2016	8	493	**16.2**
	2017	5	497	**10.1**
	2018	12	537	**22.3**
	2019*	9	567	**15.9**
Non-Hispanic White	2013	33	3464	**9.5**
	2014	32	3474	**9.2**
	2015	20	3562	**5.6**
	2016	19	3356	**5.7**
	2017	12	3316	**3.6**
	2018	23	3302	**7.0**
	2019*	19	3136	**6.1**
Butler County (Total)	2013	42	4463	**9.4**
	2014	39	4457	**8.8**
	2015	33	4604	**7.2**
	2016	31	4478	**6.9**
	2017	23	4471	**5.1**
	2018	38	4516	**8.4**
	2019*	32	4469	**7.2**

Table 2. Butler County Leading Causes of Infant Mortality Rate by Race, 2013-2019*			
	Infant Deaths	**Live Births**	**Infant Mortality Rate**
Prematurity and related conditions			
NH White	60	24,300	**2.5**
NH African American	26	3,556	**7.3**
Congenital anomalies			
NH White	7	24300	**0.3**
NH African American	31	3556	**8.7**
SUID/SIDS			
NH White	15	24300	**0.6**
NH African American	4	3556	**1.1**

Table 3. Butler County Infant Mortality Rate By Maternal Health 2019*			
	Infant Deaths	**Live Births**	**Infant Mortality Rate**
No Diabetes	26	4423	**5.9**
Pre-existing Diabetes	4	51	**78.4**
Gestational Diabetes	2	572	**3.5**
No Hypertension	25	4314	**5.8**
Pre-existing Hypertension	5	160	**31.3**
Gestational Hypertension	2	426	**4.7**
Non-smoker	25	3977	**6.3**
Maternal Smoker	5	488	**10.2**
1st Trimester	17	3056	**5.6**
2nd Trimester	6	887	**6.8**
3rd Trimester	1	175	**5.7**
Singleton Birth	26	4311	**6.0**
Multiple Births	4	156	**25.6**

Table 4. Butler County Infant Mortality Rate By Maternal Demo graphs 2019*			
	Infant Deaths	Live Births	Infant Mortality Rate
NH White	19	3325	5.7
NH African American	9	618	14.6
<20 years	2	217	9.2
20-24 years	8	939	8.5
25-29 years	7	1348	5.2
30-34 years	6	1272	4.7

35 + years	7	682	10.3
Married	13	2610	5.0
Unmarried	17	1858	9.1
< High school education	8	988	8.1
High school diploma or GED	7	3986	1.8
Some college, but no degree	3	3139	1.0
Associate Degree	0	1789	0.0
Bachelor's degree or higher	11	1440	7.6
Medicaid	14	1796	7.8
Private Insurance	13	4667	2.8
Self-Pay	1	614	1.6
0 Previous live birth	11	1582	7.0
1-2 previous live births	14	2367	5.9
3+ previous live births	5	511	9.8