Infant Vitality Annual Report 2022

Ohio Equity Institute

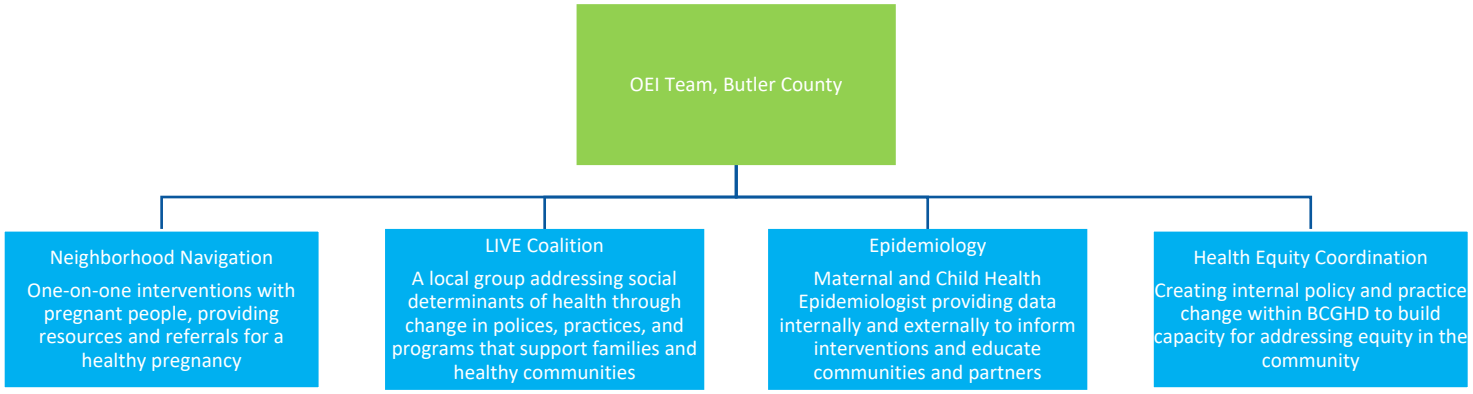
Public Health
Prevent. Promote. Protect.

Butler County
General Health District

Table of Contents

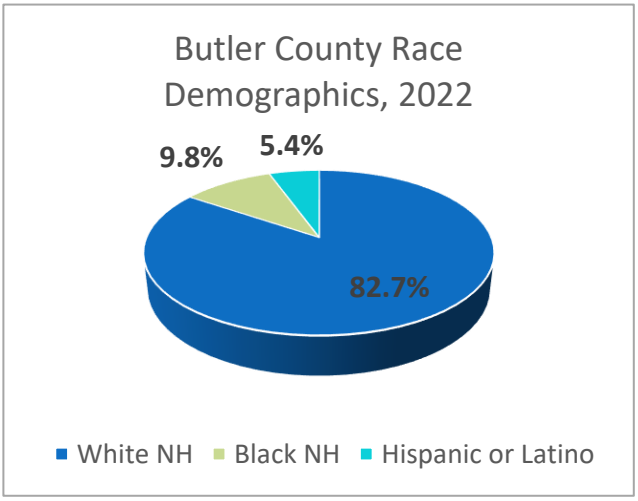
Introduction

The Ohio Equity Institute (OEI), an Ohio Department of Health grant tasked with reducing infant mortality and increasing opportunities for families to thrive, can be found in 10 counties in the state of Ohio including Butler County. According to the CDC, infant mortality is defined as the death of an infant before their first birthday. The infant mortality rate (IMR) is the number of infant deaths for every 1,000 live births. The IMR is an important marker of the overall health of a society and gives key information about maternal and infant health (CDC, 2022). Butler County has a history of high infant mortality rates and racial disparities including poor birth outcomes (prematurity and low birth weight of an infant). The OEI team at the Butler County General Health District (BCGHD) aims to reduce infant mortality through multiple strategies.



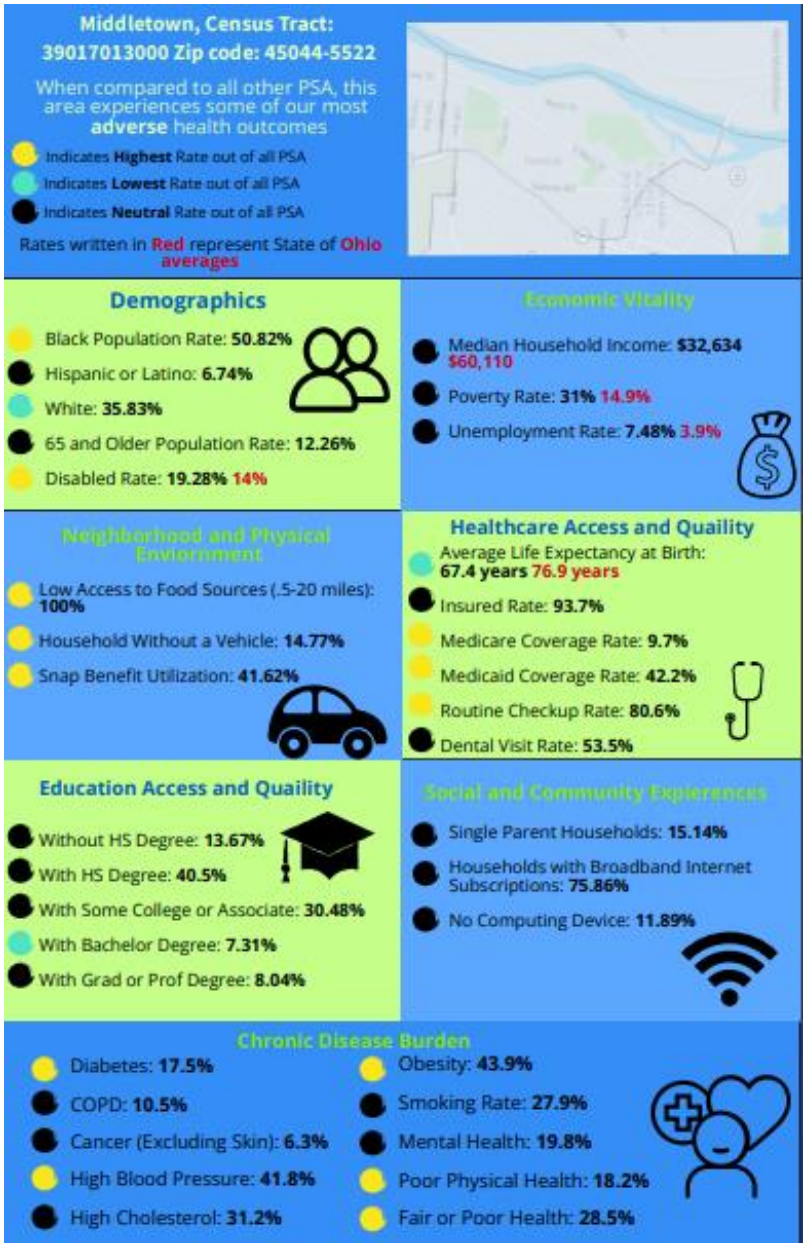
Demographics of Butler County

Of the 88 counties in Ohio, Butler County ranked the seventh most populated county with the population of 390,234. The median age of residents is 39.9 and the largest racial and ethnic groups are Non-Hispanic white (82.7%), followed by Black or African American (9.8%) and Hispanic (5.4%) (US Census, 2021). The median household income grew from $66,117 to $69,023 from 2017-2021. However, 11.6% of Butler County families live in poverty, which is lower than the state (13.4%) and the national averages (12.8%) (US Census, 2021). Nearly 10% of all white and Black residents live below the poverty line and 24.4% of Hispanic residents live below the poverty line (US Census, 2021).



Social Determinants of Health

To address infant mortality, social determinants of health must also be understood, examined, and improved. Social determinants of health (SDOH) are the conditions in the environment where people are born, live, work, worship and age that affect a wide range of health and the quality of life outcomes. Determinants such as income, transportation, housing, racism, and other characteristics of a community impact the health of pregnant people, their children, families, and the community. To address many inequities and poor health outcomes for a community we must start with birthing people and their babies.



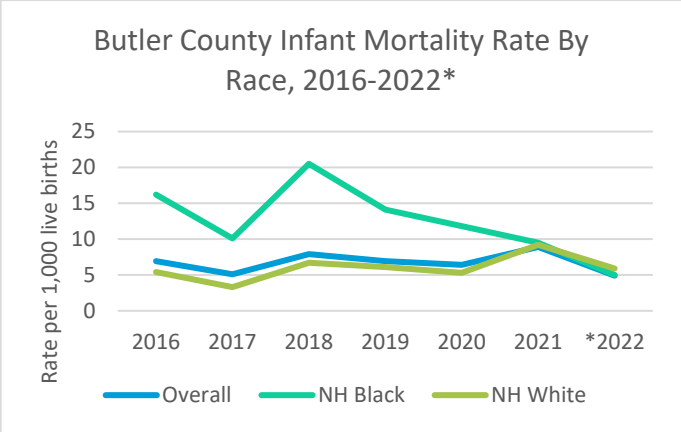
Priority Service Areas (PSA) in Butler County are determined by identifying which communities and locations have the highest rates of preterm birth and low birth weight of Black infants. The SDOH of these census tracts were mapped and compared. Locations with the highest rates of poor birth outcomes of Black infants were found to also have higher rates of poverty, chronic disease, decreased access to transportation, and shorter life spans as compared to other census tracts within the county. SDOH risk factors for the PSA of Middletown, zip code 45044-5522 are summarized.

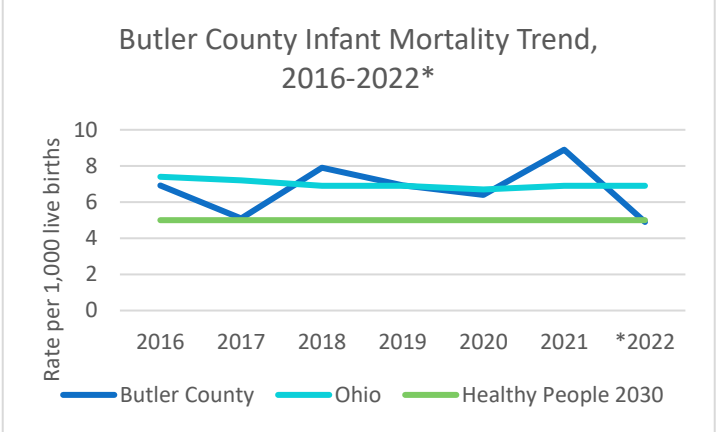
The OEI Epidemiologist's role has evolved over the years, as more data on SDOH has been collected, analyzed, and shared. More than ever in 2022, SDOH data was shared with county agencies to inform their work programmatically and to aid in securing funding for local projects.

Infant Mortality and Racial Disparities

Of 4,265 live-born babies in 2022, 21 infants died before their first birthday in Butler County. The overall infant mortality rate for all races in 2022 is 4.9 deaths per 1,000 live births. For comparison, in 2021 there were 4,262 live-born babies and 38 infant deaths. In 2022, Butler County experienced a sharp decrease in infant mortality with 17 less infant deaths from the year prior. The 2022 rate is also currently on target with the Healthy People 2030 goal of 5. Between the period of 2016 to 2022, Black infants were 2 times

more likely to die than white infants. In 2022, the infant mortality rate for non-Hispanic Black infants was 5 per 1,000 live births compared to 5.9 per 1,000 live births among non-Hispanic white infants. Overall, the infant mortality rate trends over the years show that Black infants in the county are consistently more than twice likely to die before their first birthday than white infants. (Asterisks next to year 2022 in graphs refers to data provided by The Ohio Public Health Information Warehouse that is provisional and subject to change by fall of the subsequent year as data is finalized).



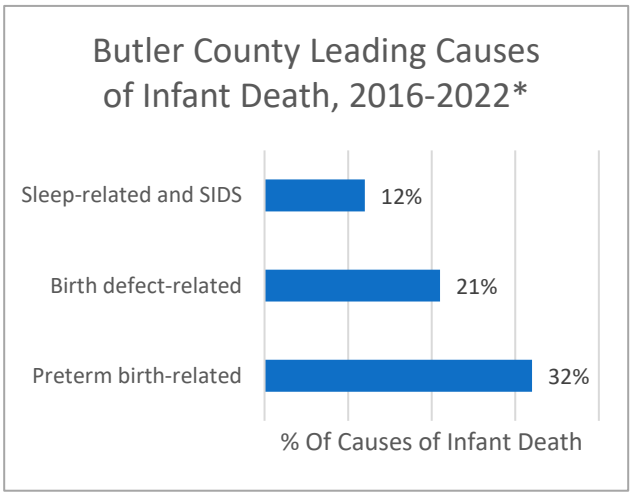


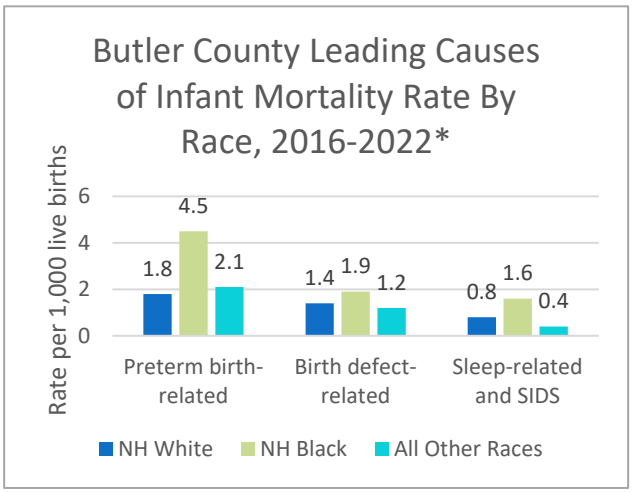
Leading Causes of Infant Death

The three leading causes of infant deaths in Butler County between the periods of 2016-2022 were:

- preterm birth related conditions,
- birth defect related conditions, and
- Sleep Related/Sudden Unexpected Infant Death (SUID).

These leading causes contributed to around 70% of all infant deaths in 2016-2022.





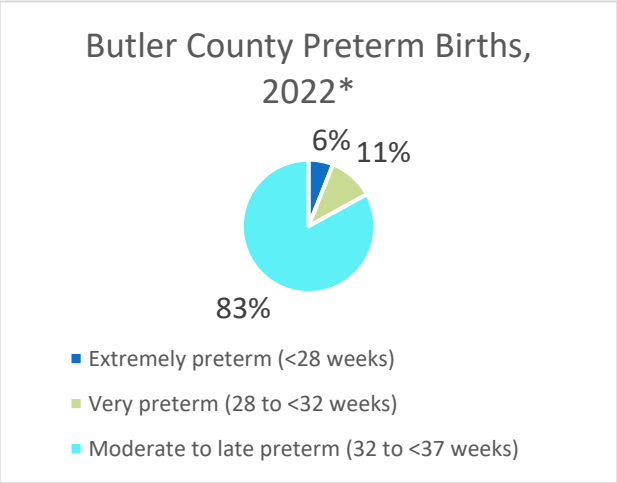
Leading Causes of Infant Death by Race

Babies born to non-Hispanic Black mothers in Butler County had the highest infant mortality rate across all the leading causes of infant death compared to babies born to mothers of other races. The biggest disparities are seen with preterm birth-related conditions. Non-Hispanic Black infants are 2.5 times more likely to die from prematurity-related conditions than non-Hispanic white infants and about 3 times more likely to die compared to babies born to mothers of other racial backgrounds.

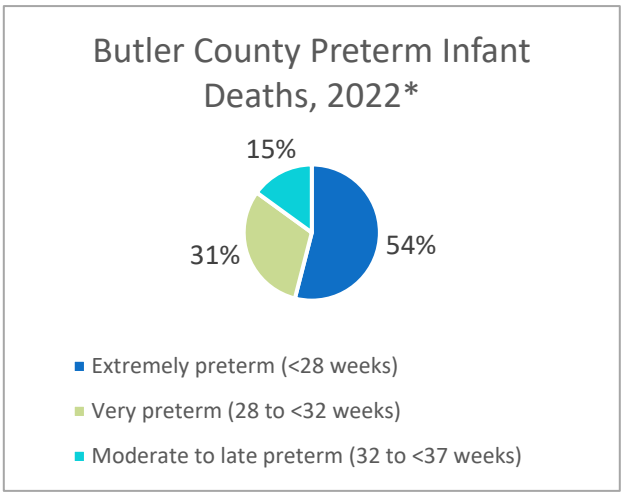
Source: 2016-2022 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data. 2022 data is provisional; ODH finalizes data by fall of the subsequent year.

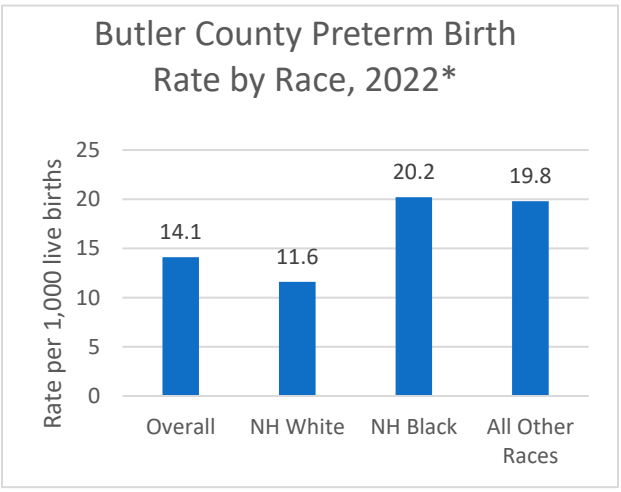
Prematurity

Prematurity was the leading cause of all infant deaths in Butler County in 2022. Prematurity or preterm birth is when a baby is born too early, before 37 weeks of gestation age. Of all babies born in 2022, 11% were less than 37 weeks. Of these births 6% were considered extremely preterm less than, 11% considered very preterm, and 83% moderate to late preterm.



Of all infant deaths in 2022, 54% were considered extremely preterm. In Butler County, the rate of babies being born preterm in 2022 was 14.1 per 1,000 live births. Of all preterm births 58% were Non-Hispanic white with a birth rate of 11.6 compared to 18% Non-Hispanic Black with a birth rate of 20.2.



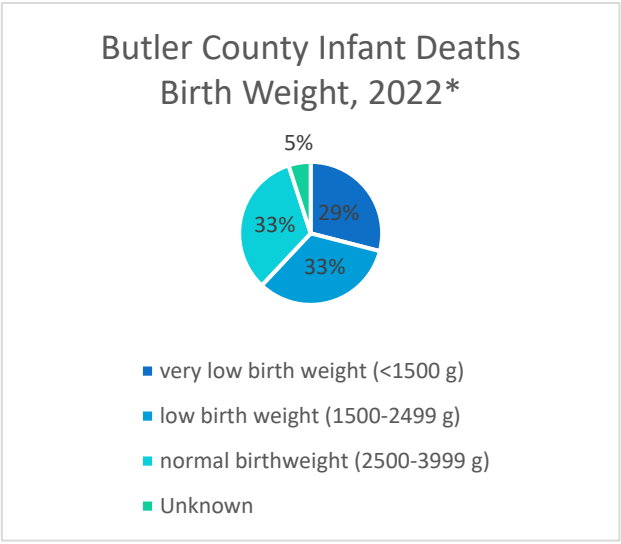


Low Birth Weight

Low birth weight (LBW) is defined as a baby born weighing less than 5 pounds, 8 ounces (2,500 grams). The two main factors for LBW are preterm birth and fetal growth restriction.

Factors that can cause low birth weight include maternal high blood pressure, diabetes, obesity, cigarette smoking and alcohol or drug use.

In 2022, 8% of live births had a low birthweight less than 2499g. Of these infants with a low birthweight and 18% were considered very low (less than



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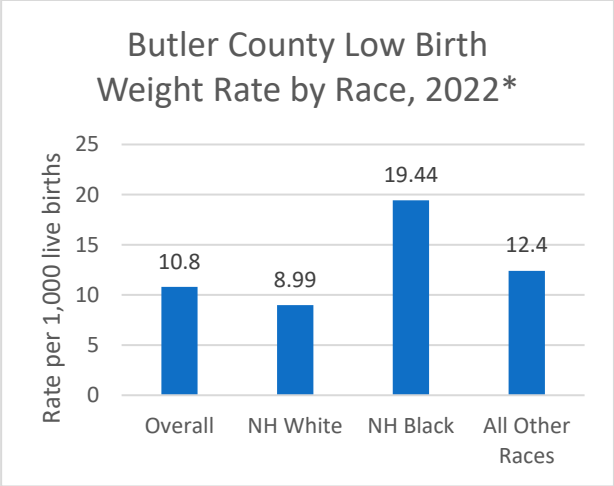


1500g), and 82% were considered low (1500-2499g). In 2022, 62% of infants that died were considered to have a low birth weight of less than 2499g. Of all infant deaths in 2022, 29% were considered to have a very low birth weight of less than 1500g, 33% had a low birth weight of 1500-2499g, 33% had a normal birthweight of 2500-399g, and 5% were unknown. The rate of babies born in Butler County with a low birth weight less than 2499g in 2022 is 10.8 per 1,000 live births. For NH white the rate is 8.99 compared to the NH Black rate of 19.44.

Infant Mortality Rate by Maternal Health

Maternal health refers to a woman's health and well-being before, during, and after pregnancy. Pregnancy related complications are closely linked to infant deaths. The OEI Team works closely with other maternal and child health initiatives that prioritizes preconception health. It's well known that if we want to take care of infants within our community, we must start with women and mothers. The following data reflect the maternal and infant health outcomes of Butler County in 2016-2022:

Parity: Infants born to women with multiple births were at 2.3 times more likely to die before their first birthday than infants born to women with singleton births.

Breastfeeding Status: Infants born to women who did not breastfeed at the time of their discharge were about 9 times more likely to die than infants born to women who breastfed at time of discharge.

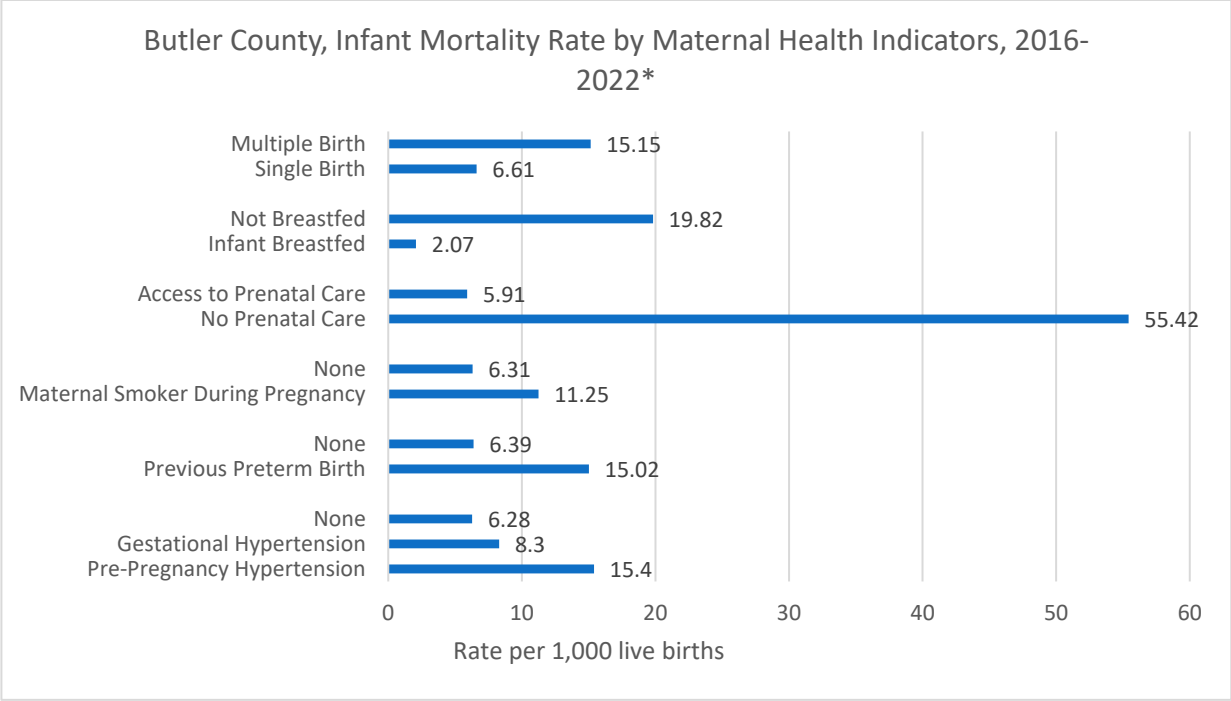
Prenatal Care: Infants born to women with no prenatal care were about 9 times more likely to die than infants born to women with access to prenatal care.

Maternal Smoking Status: Infants born to women who smoked tobacco during pregnancy were 1.8 times more likely to die than infants born to mothers that do no smoke tobacco.

Previous Preterm Birth: Infants born to women who had a previous preterm birth, had an infant mortality rate 2.4 times higher than infants born to women with no history of preterm birth.

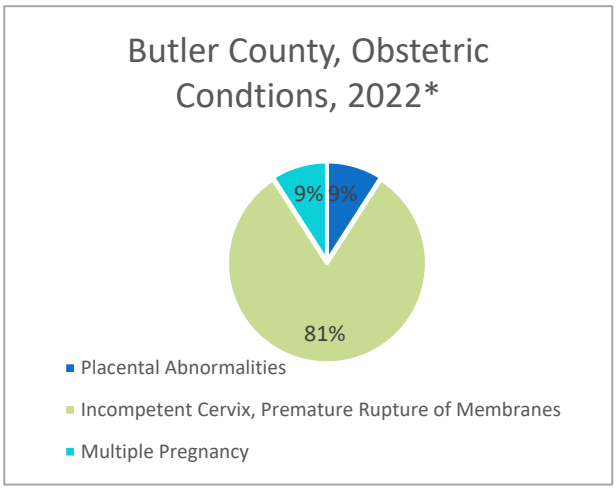
Hypertension: Infants born to women with no history of hypertension were about 4 times less likely to die than infants born to women with pre-pregnancy and/or gestational hypertension. Infants born to women with pre-pregnancy hypertension were about 2 times more likely to die than infants born to women with gestation hypertension.

Source: 2016-2022 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data. 2022 data is provisional; ODH finalizes data by fall of the subsequent year.



Obstetric Conditions

Defined as "diseases or conditions affecting conception, pregnancy or childbirth," obstetric conditions are health problems that are life threatening to pregnant people and their babies (HME, 2022). The CDC states that complications from chronic conditions are a key driver of rising obstetric morbidity and mortality in the United States (CDC, 2022). The most common types of obstetric conditions include eclampsia, pre-eclampsia, gestational diabetes, hypertension, etc.



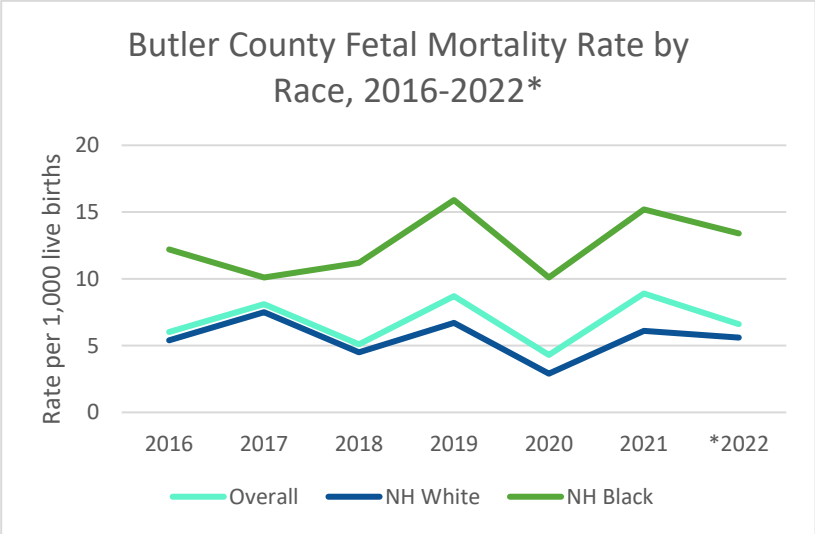
In Butler County from 2016-2022 of all infant deaths reported, around 10% of pregnant people were categorized as having experienced an obstetric condition which included placenta previa, separation, and placental abnormalities (9%), incompetent cervix, premature rupture of membranes (81%), and multiple pregnancy (9%). There are disparities between Black and white infants across all causes of death. In the state of Ohio specifically, the number two leading cause of death for Black infants in 2020 was listed as obstetric conditions compared to the fifth leading cause of death for white infants and overall for all races (ODH, 2020).

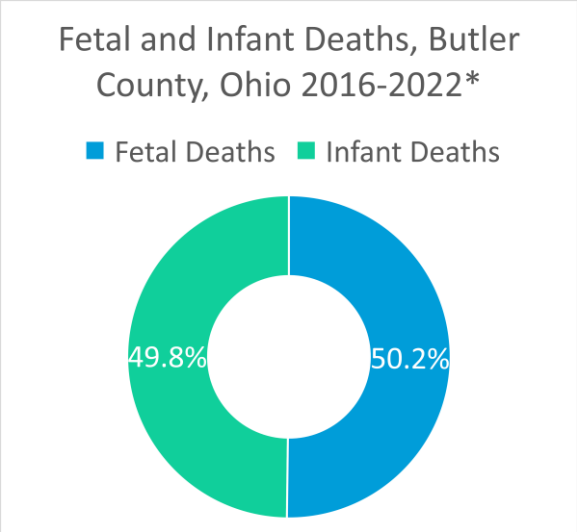
Source: 2016-2022 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data. 2022 data is provisional; ODH finalizes data by fall of the subsequent year.

Fetal Deaths

Fetal deaths defined by the CDC as, "the spontaneous intrauterine death of a fetus at any time during pregnancy (also sometimes referred to as stillbirths)," represented around 50% of all reportable pregnancy and infant losses in Butler County from 2016-2022 (CDC, 2022). From 2016-2022, there were 210 fetal deaths in Butler County. Specifically, 28 deaths in 2022 making the Fetal Mortality Rate 6.6 fetal deaths per 1,000 live births. The amount of fetal deaths is nearly the same as the 208 infant deaths that occurred in this same time period. The rate of non-Hispanic Black fetal deaths (13.4) has remained consistently higher compared to all other races and is about 2.4 times higher than the rate for non-Hispanic white fetal deaths (5.6).

When looking at maternal and child health, it is important to understand fetal death causes, risk and protective factors. It is also imperative to support families who experienced a death by taking the time to listen and share their stories, understand what could have prevented the death, and sharing those findings with partners. Two maternal interviews with mothers who experienced stillbirths were completed by the Fetal Infant Mortality Review Coordinator.





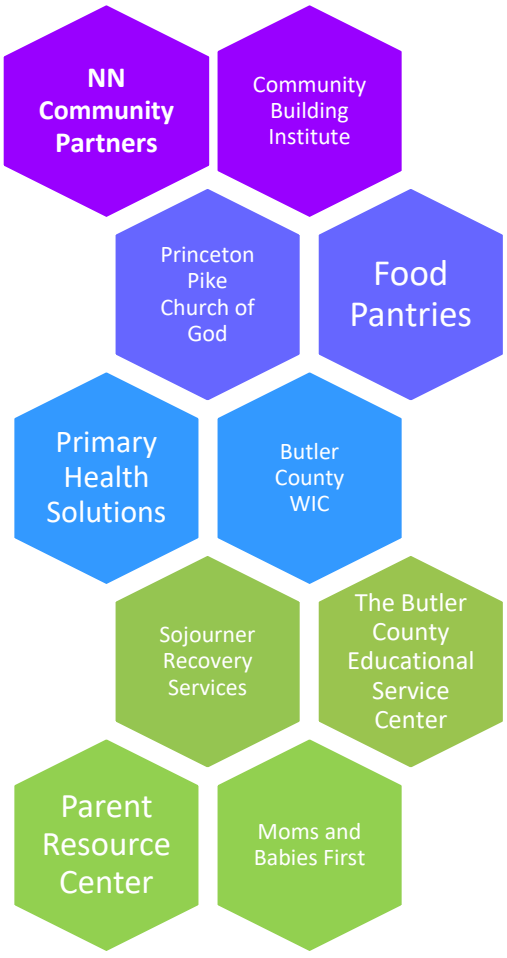
WHAT WE HEARD FROM MATERNAL INTERVIEWS

- Felt medical providers were insensitive during appointments
- Guilt and self blame after baby's death
- Lack of affordable mental health and housing resources
- Stigmatizing medical jargon used
- Felt family, friends, doctors didn't know how to talk about infant's death appropriately
- Want other mothers to speak up for themselves
- Post partum urgent maternal warning signs ignored
- Felt their voices were silenced

Source: 2016-2022 Ohio Department of Health, Ohio Public Health Information Secure Data Warehouse Data. 2022 data is provisional; ODH finalizes data by fall of the subsequent year.

Neighborhood Navigation (NN) Services

Butler County's NN serves pregnant people in the community by listening to their needs and stories, connecting them to resources, and services, and providing pertinent information and education to improve their birth outcomes. The OEI NN prides herself on not only being in the community, but being a member of the community. The NN prioritized non-traditional avenues of outreach (83% of clients came from non-traditional avenue of outreach) to connect with community members that are not currently enrolled in services and programs that support a healthy pregnancy. The NN could frequently be seen in the community by attending local events, connecting with agencies and businesses, sharing contact information on social media, canvassing neighborhoods, and speaking with community member's one-on-one. The NN closed gaps between clients needing and receiving resources by doing grassroots work in the community, meeting families where they are. A great success in 2022 was when the NN spoke to families and pregnant people at a community baby shower, sharing information and tactics on self-advocacy.



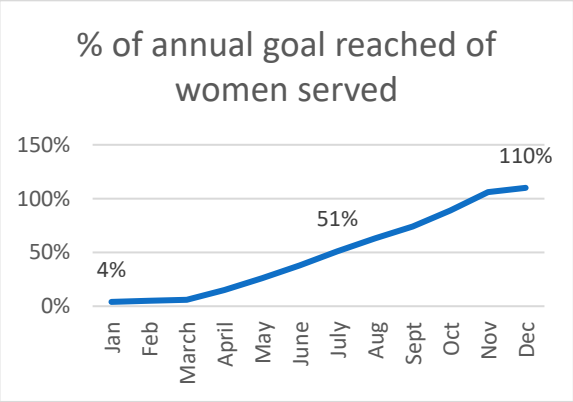
The NN must be a known ally in the community so people feel comfortable sharing their needs and receiving resources. The NN works to empower clients by affirming and uplifting their voices, concerns, and desires known in and out of prenatal care appointments.

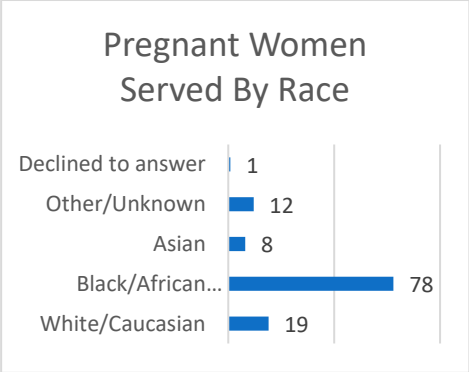
The NN exceeded the OEI team's goal of serving 120 people by becoming a trusted resource and familiar face in the county. Due to the NN being so embedded in the community, many families were connected to Navigation services through referrals from word of mouth. Satisfied clients shared their experiences with pregnant family members and friends and referred them to the NN.

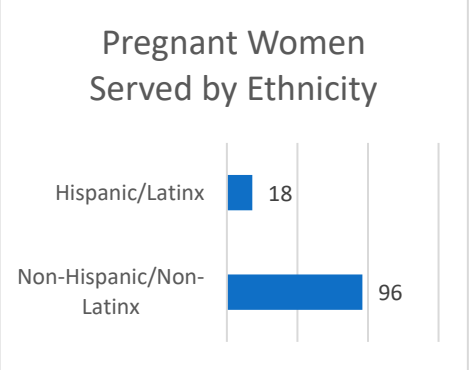
To battle racial disparities in maternal and child health outcomes, the NN focused outreach efforts specifically to Black families in the county. Mapping the Priority Service Areas with the highest rates of preterm birth and low birth weight of Black infants, guided where the outreach needed to be conducted. Many families provided feedback about outreach efforts guiding where and when the NN spent time.

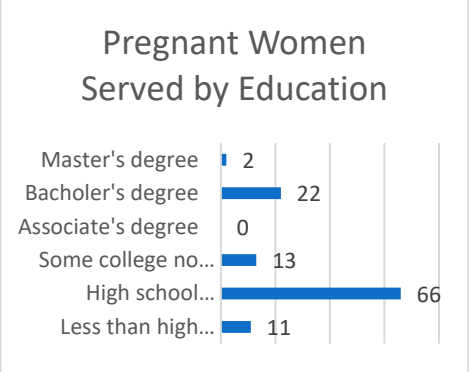
Neighborhood Navigation Women Served

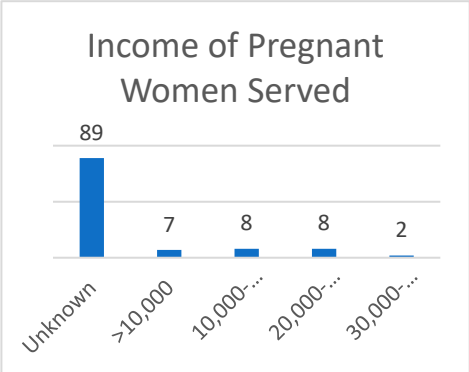
The Neighborhood Navigator served 132 women total which of 114 that were pregnant in 2022. Of all women served 67% identified as Black/African American and 16% identified as Hispanic. The Navigator served women from a range of educational attainment, insurance provider, varying previous birth outcomes, and risk factors. Pregnant women served through navigation were shown to have experienced an average of 3 risk factors at a given time. Although there are racial disparities in birth outcomes and there are risk factors for a family experiencing an infant loss, women from all walks of life should have access to every resource available for a health pregnancy.

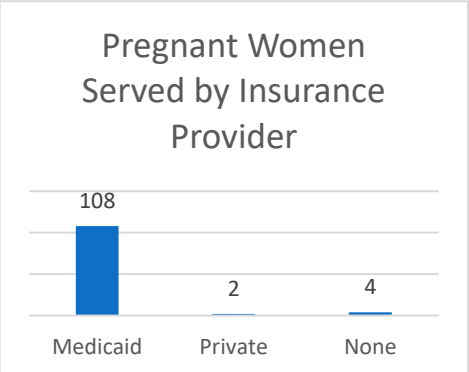


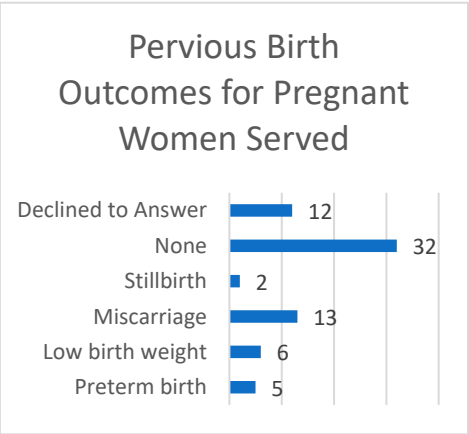






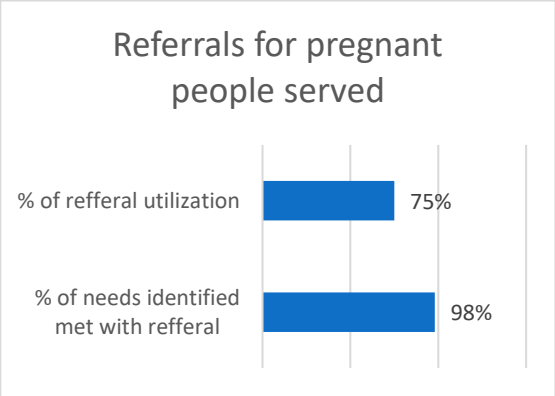


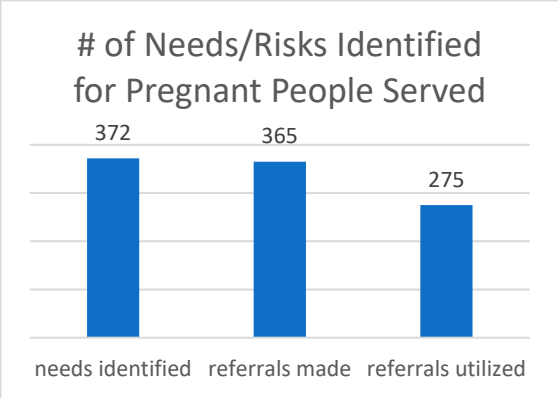




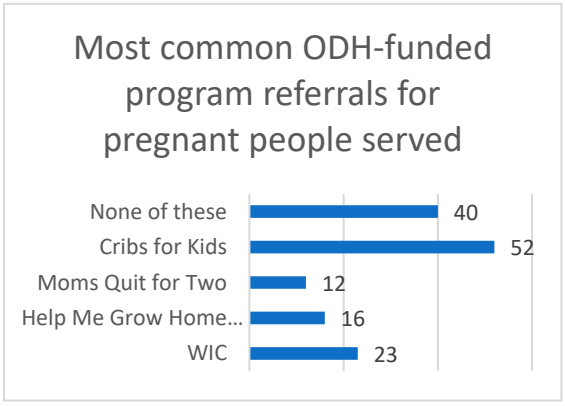
Neighborhood Navigation Referrals

Of pregnant women served, 372 total needs were identified and 98% of those needs were met with an appropriate referral from the NN. Of the referrals made, 75% were utilized by pregnant clients. The most common ODH-funded program referral for pregnant people served in NN was Cribs for Kids. SUID and unsafe sleep practices is a top cause of infant death in the county. Safe sleep education, access to cribs, and supporting caregivers in their safe sleep practices is an important piece of ending infant mortality.





With an 89% success rate of connecting with each client for a third follow up, the NN was able to walk through the process of referral utilization with clients and ensure that they were able to make the appropriate connections in a timely manner. One way OEI practices have evolved is the NN frequently meets in-person with the client to ensure all needs are met. Initial contact with the client may be via telephone or text. Meeting with client during a follow-up allows the Navigator to better connect and has encouraged word of mouth referrals to NN services.



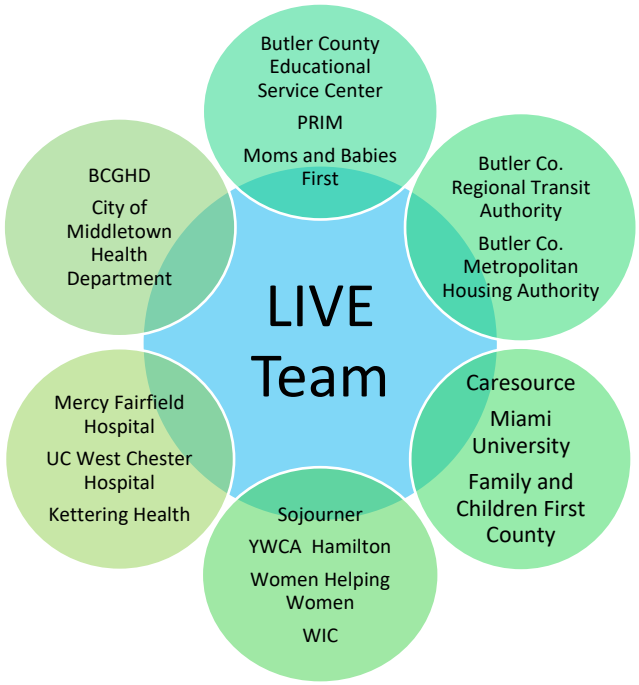
Leading Infant Vitality Equitably (LIVE) Coalition

LIVE is a local coalition in Butler County, made up of community partners, that aims to change policies and practices to improve population health. The LIVE coalition is made up of four subcommittees, each having a unique action plan that addresses root causes of infant mortality.

The focus of the LIVE coalition for 2022, was gathering data, understanding existing policies, and speaking with the community. In addition, the Implicit Bias and Anti-Racism subcommittee held implicit bias trainings for the community and direct service providers. This subcommittee is working toward influencing orientations and mandatory trainings for providers and staff at prenatal clinics. These trainings would address racism, discrimination, and bias in the healthcare setting.

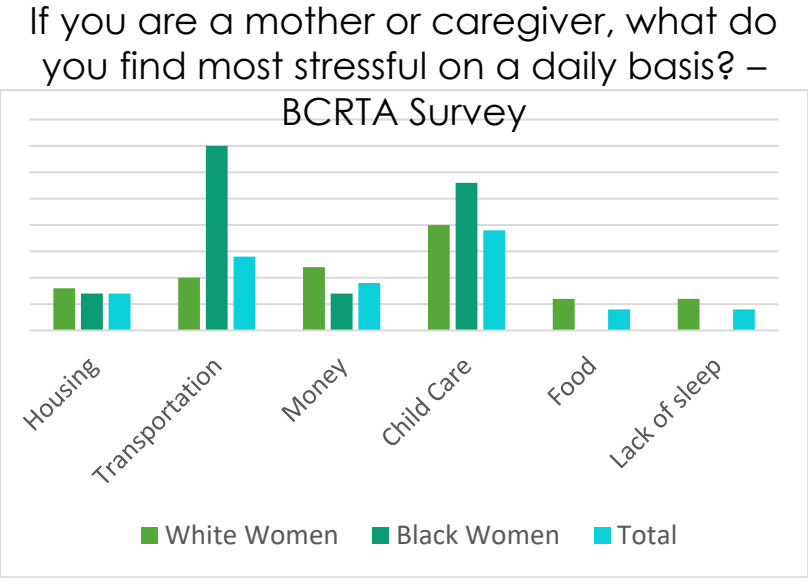
Community Voice

LIVE, co-led by OEI and the YWCA Hamilton, is made up of a wide variety of community partners, each coming together to impact SDOH and create more opportunities for families to reach optimal health. Each partner plays a critical role in moving health equity forward in Butler County. Also, LIVE recognizes that county residents play a vital role and policy changes should not be implemented without community input. In 2022, the OEI Team deepened their commitment to listening to the community and shaping efforts based on what was learned. Over the years LIVE has evolved to be more data driven, through SDOH dashboard and reports. LIVE has also taken a look at transportation data, been involved in community forums, and participated in local listening sessions led by the YWCA Hamilton.



Policy Change

OEI, the LIVE coalition, and Butler County Regional Transit Authority (BCRTA) requested community input on transportation needs and status of the county. BCRTA is creating a county wide mobility plan and has asked extensively for feedback from residents and agencies. LIVE attended a community forum and shared transportation data and advocated for easier access to hospitals and prenatal clinic's. While gathering both qualitative and quantitative data the overall resounding feedback from mothers and caregivers in the community is that transportation is a daily stressor and they prefer curb-to-curb services, especially when traveling with children. The Transportation Accessibility Subcommittee recoginized this need and is working toward creating partnerships with local agencies and BCRTA to implement free transportation services for families.



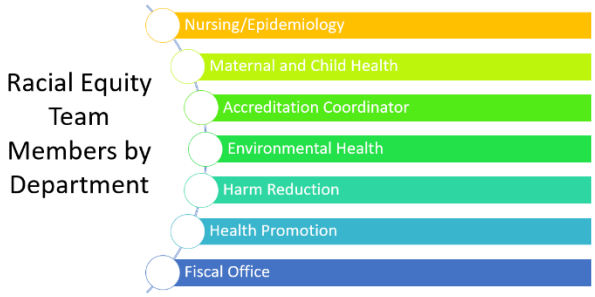
In a community input survey, BCGHD found 52% stated poverty and low income as the biggest issue that affects Butler County. Pregnant women stated, "discrimination at work," "lack of health insurance," "low income, surviving is difficult," and "going back to work in the winter" as top stressors. It's also known, from NN and speaking with women, that paid maternity leave is non-existent for many and that women have to return to work shortly after birth.

LIVE has partnered with WIC to aide in advocating that local businesses adopt written policies to guarantee adequate breaks and designated spaces for lactation support and pumping within the workplace. Breastfeeding is a protective factor against infant mortality and also reduces the risk of SUIDS, a death that usually occurs during sleep, and where racial disparities also exist within the data. Breastfeeding premature infants also reduces the likelihood of illness and hospitalizations. To increase the occurrence of breastfed babies, economic gains and access to resources, and to help secure health insurance, LIVE is prioritizing policy in the workplace. Policy in the workplace for postpartum women, along with increased access to transportation for families to secure essential items and services, will be the focus for 2023. The LIVE coalition plans to address these policies over the next two years through representation on BCRTA's Board, speaking with the Chambers of Commerce, and outreaching to local businesses and agencies to advocate for and aid in the implementation of new policies and programs.

These policies will address what community members identified as the most influential SDOH that cause poor health outcomes for women and their children. While selecting a policy change to pursue, the LIVE coalition reviewed data that pointed to root causes of poor health outcomes. Data was shared on the state of infant mortality, disparities in SUID, disparities in the occurrence of preterm birth, breastfeeding as a protective factor in the reduction of infant mortality, and disparities in rates of breastfeeding. This data, along with the input we received from community members, led to LIVE's policy initiatives.

Health Equity and The Racial Equity Team

The previous OEI NN transitioned into the Health Equity Coordinator (HEC) position in July of 2022. The Racial Equity Team (RET), led by the HEC, is comprised of team members from all departments with the exception of plumbing. RET conducted an internal equity self-assessment survey and an external collaborating partner survey in 2022. The internal self assessment, administered and anayzled by the YWCA, was successfully completed by 97% of staff including the Board of Health. The data gathered shaped the RET Action Plan to be

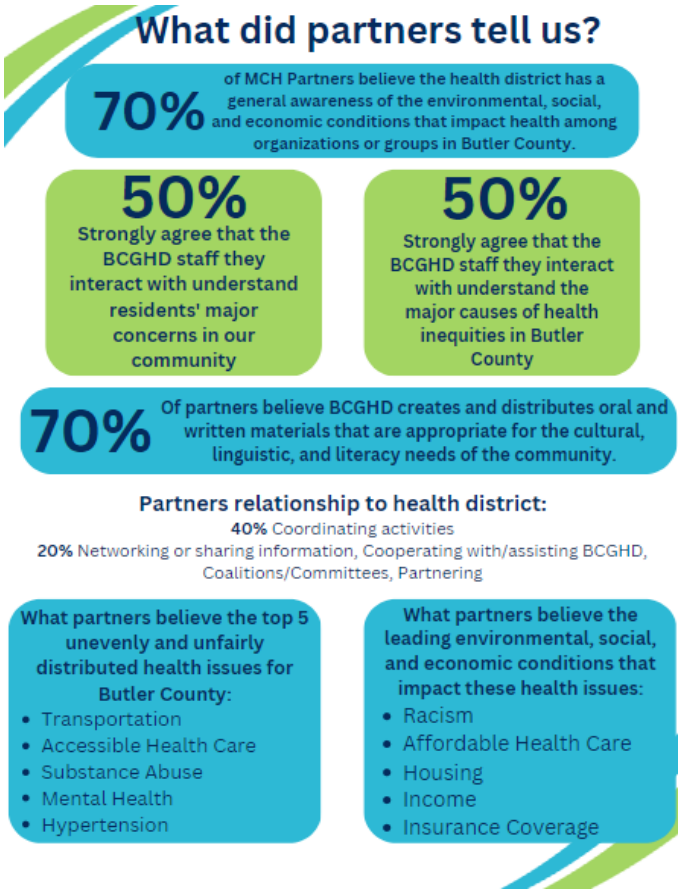


implemented 2023-2024. The internal self assessment and external partner survey mirrored one another and created three themes for the action plan; policy, communication, and customer service.

In order to advance these changes the HEC works closely with the Human Resource Manager (HR) to write, review, and edit policies. The HEC and RET has normalized organizational change through continous communication with the Health Commissioner, attending Leadership and Board of Health meetings, and by creating processes with HR to embedd equity in all policies and practices.

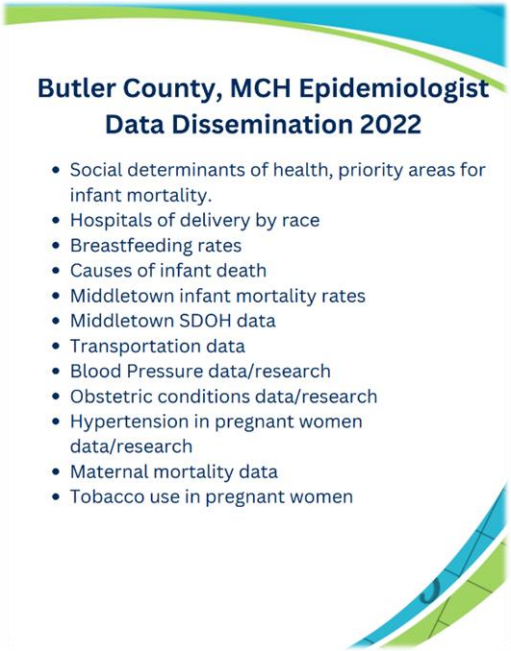
The Racial Equity Team at the Butler County General Health District is committed to strengthening the organizational capacity to address health disparities in our community by promoting a racial equity lens when reviewing policies and creating and implementing programs. Collaborating with community partners to advance a culture of diversity, equity, and inclusion for all Butler County residents will expand anti-racist initiatives and build trust within communities that have been historically excluded or marginalized.

The RET has learned, through the assessments, that within BCGHD there must be a greater understanding of health equity, how all positions and services have a role, and the impacts of SDOH. Additional feedback included partners wanting to be more involved in decision making, program planning, and conversations outside of maternal and child health. RET is advocating for a deeper commitment to actively listen to communities most adversely affected and to invest in improvements to solve issues of equities with all voices heard.



OEI Data Dissemination and Research

The OEI Epidemiologist created and disseminated multiple reports internally throughout the health district. Some of this data has been posted on BCGHD's webpage, presented to RET, and discussed at LIVE coalition meetings. A press release was written in November 2022 to share data and raise awareness on prematurity, birth outcomes, and racial disparities in Butler County. Data has also been disseminated to ODH via monthly reports and shared with other OEI epidemiologists at the monthly meetings. Data was also shared externally with the two city local health departments in Butler County and partners at UC Health, YWCA, and the Educational Service Center.



The Future of OEI in Butler County

The OEI team spent 2022 grounded in data, data sharing, gathering community input, and building a Racial Equity Team in BCGHD. Advocacy is another theme for the OEI team in 2022. The Neighborhood Navigator spoke on self-advocacy to families in Butler County and is always willing to sharing the experiences of families during coalition and partner meetings. The Health Equity Coordinator used qualitative data from the equity self-assessment to uplift staff voices and share messages with the Leadership Team on proposed changes and improved processes. The Epidemiologist provided data that supports the need for policy and programmatic changes in regards to SDOH. By sharing pertinent data with organizations, needed changes can be justified and made. Beginning in January 2023, OEI Project Coordinator will serve on the Board for BCRTA. This is a success for the coalition, as the Project Coordinator will carry out the purpose of LIVE when participating on the Board and will bring an equity and public health lens into decision making.

The year 2023 will see the OEI team and the LIVE coalition put data into action by implementing the RET Action Plan and by living out the mission of each coalition subcommittee. The OEI team will continue to work together, improve processes, and build capacity to address disparities in health outcomes and to help more babies reach their first birthday.

Logic Model

Butler County General Health District (BCGHD) OEI Logic Model, 2022

Inputs What resources will be invested?	Outputs What do you plan to do? Activities		Outcomes/Performance Measures Intended results: How will progress be measured? What are the planned results?		
			Short	Medium	Long
Project Coordinator	Finalize workplan and logic models, complete reporting, and coordinate deliverables, team meeting facilitation, and team supervision	Co-lead SDOH team, coordinate activities, design and implement policy and practice change through the LIVE coalition Build and maintain partnerships	Effective and efficient OEI Team Efforts Deliverables and grant requirements met Team coordinated and goals met	SDOH policies implemented, increased access to transportation, decreased implicit bias in the workplace, increased lactation support in the workplace Team and partners empowered to fulfill roles and impact IM	Decrease Black Infant Mortality Rate in alignment with Ohio SHIP goal 2028 (6 per 1,000 deaths) Eliminate the IMR disparity gap between Black and white infant deaths by 2028 Eliminate disparity in prematurity, low birth weight, SUIDS, and fetal deaths between Black and white infants by 2028 Improved access to public transit system by adding bus routes and stops at local hospitals, including UC West Chester Medical Center Reduce racial disparities in breastfeeding initiation rates and increase # of breastfed babies by 2024 Reduction of implicit bias and racism in health care settings through self-report of Navigation, FIMR , and Home Visiting clients by 2024 Increased early detection of Urgent Maternal Warning Signs in postpartum women causing a decreased rate of maternal mortality Increased capacity of BCGHD's ability to address equity and racism through the revision and writing of workplace policies rooted in equity by December 2023 Increase public satisfaction of BCGHD's services through client satisfaction surveys by January 2024
Epidemiologist	Analyze local MCH data, birth outcomes, and SDOH data, Report to SDOH Coalition Track OEI performance measures, facilitate quality improvement projects	Create and disseminate reports and data products Respond to external data requests, present IM/SDOH data to 3 groups and/or partners to influence policy and educate community	Increased understanding of MCH, birth outcomes, and SDOH data Improved OEI programming through quality improvement projects/performance measures Educated community and partners in MCH and SDOH impact Data products created and shared to influence county programs	Community aware of impact of SDOH and IM SDOH agencies aware of IM and resolved to address health inequities	
Neighborhood Navigator	Maintain resource portfolio, meet with partners and establish referral programs Execute outreach plan Advocacy of client's experiences at partner and coalition meetings	Serve pregnant people by providing resources, education, and referrals Gather data to inform decision making in coalitions or services Participate and co-lead Butler County Queens Village	Goal met for # of people served through NN Pregnant people connected to services Partners connected to MCH resources Qualitative data and community voice shared	Improved birth outcomes for NN clients Increase # of residents aware of and connected to resources Reduce preterm and low birth weight rates	
Health Equity Coordinator	Utilize internal survey data to identify needs, create health equity action plan Guide new workplace processes and procedures rooted in equity	Lead the Racial Equity Team, and build capacity for addressing equity in the community Provide equity trainings to staff and leadership Participate and co-lead Butler County Queens Village, uplift community voice	Health Equity Action plan created New/improved workplace policies implemented Racial Equity Team spearheads policy implementation with Health Commissioner Staff educated on equity Black women heard and cared for through Queens Village	All workplace policies reviewed and rooted in equity Improved staff retention and satisfaction Improved communication between departments and leadership Improved accessibility to building Increased access to health information and resources for Queens Village participants	

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