Hamilton County Ohio Equity Institute
Annual Report 2020

EVERY BABY MATTERS

OEI

OHIO INSTITUTE FOR EQUITY IN BIRTH OUTCOMES

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And the women and families of Hamilton County

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1.0 Introduction

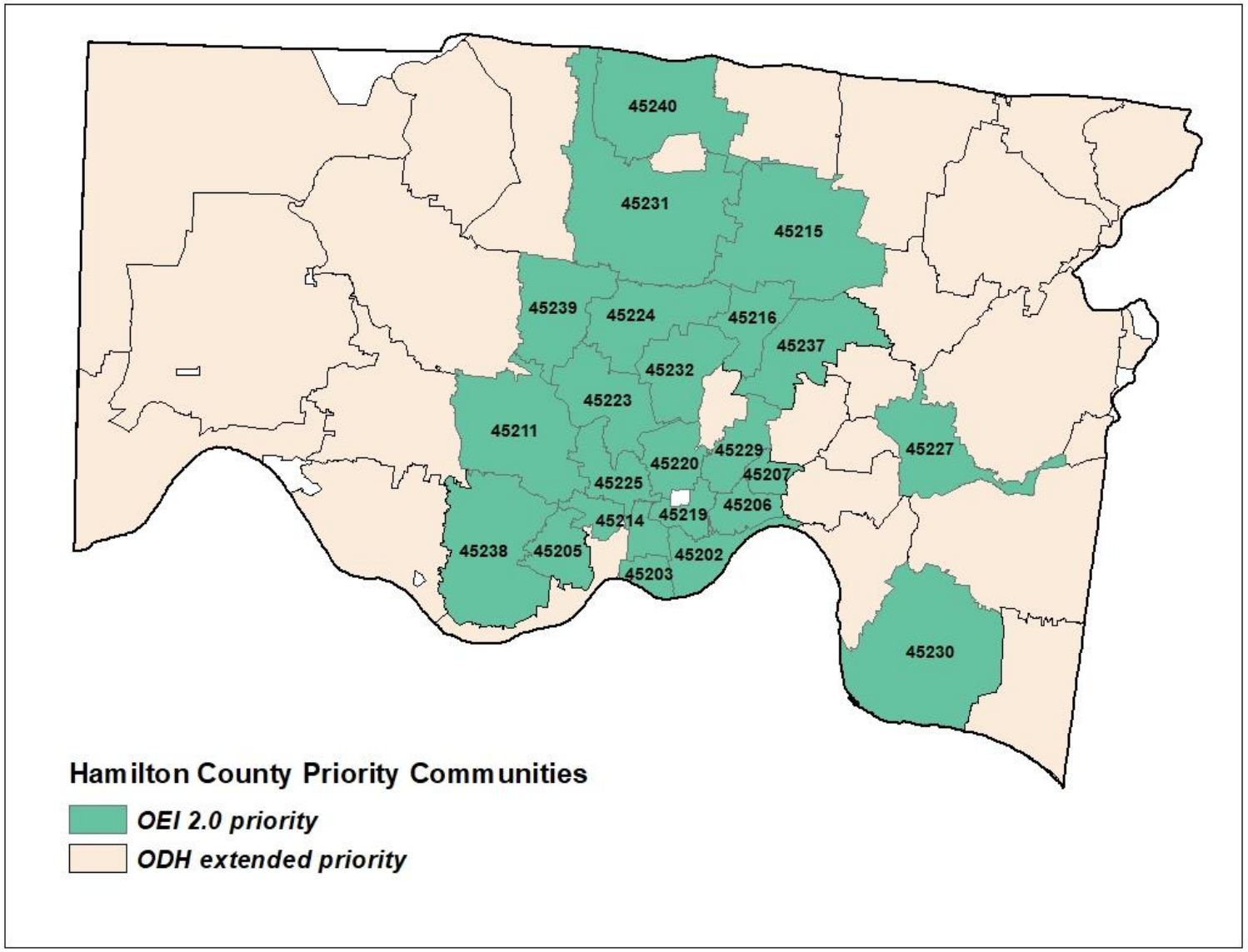
Overview of OEI

The Ohio Equity Institute (OEI) is a statewide program, managed by the Ohio Department of Health (ODH) and implemented locally by Hamilton County Public Health (HCPH). Created in 2012, OEI uses population data to prioritize areas for outreach in nine urban Ohio counties with the highest infant mortality rates and largest racial/ethnic health disparities. OEI 2.0 launched on October 1, 2018 and implemented a revised structure to ensure that the program addresses the biggest drivers of infant mortality and directly serves the populations most vulnerable to poor birth outcomes like prematurity and low birthweight.

Goal and Purpose of OEI 2.0

The grant employs downstream and upstream strategies. In the downstream approach, Neighborhood Navigators work within 23 priority ZIP codes to identify a portion of the county's Black prenatal population and connect them to needed clinical and social services (**Figure 1**). The upstream component uses the data collected by the Neighborhood Navigators to facilitate the development, adoption, or improvement of policies and/or practices, which influence the social determinants of health (SDOH), related to preterm birth and low birthweight birth in Hamilton County. Together these two approaches aim to contribute to the reduction of preterm birth and low birthweight birth rates and ultimately infant mortality in Hamilton County.

Figure 1. Outreach Prioritization Map of OEI 2.0 in Hamilton County



"OEI teams work to achieve equity in their local communities by ensuring Black pregnant women have access to services that will support healthy pregnancies, and by improving the physical and social infrastructure that impact health outcomes for Black women, children and families."

2.0 Community Context

History of OEI in Hamilton County

The Ohio Equity Institute plays a pivotal role in ensuring that the needs of women in Hamilton County who are most at risk for infant mortality are met. The program recognizes how integral combating infant mortality is for both mom and baby, and the community it serves. The presence of OEI in Hamilton County has been long-standing, and over the course of seven consecutive grant years has worked continuously to improve and address the needs of Hamilton County as it relates to poor birth outcomes and infant mortality.

The first five years of the grant were spent planning, promoting, and managing interventions, and much of that entailed community engagement. Families living in identified areas were prioritized and received training that provided them with the skills to protect their infants and make informed decisions around family planning. At the time, this was considered the downstream approach. In addition to that, an evidenced informed reproductive health curriculum was implemented within Cincinnati Public Schools as an early intervention. It was recognized as an important gateway for effecting changes in infant mortality by moving upstream to provide education and resources to youth. In more recent years, OEI has adopted the aforementioned strategies for program implementation, and continues to engage the priority population, while the upstream approach utilizes data collected within the downstream approach to inform practices and polices needed to address inequities in birth outcomes.

OEI 2.0 is the most recent example of how the program strategically works to prioritize the goals of the grant by tailoring its objectives to serve as many women as possible. In the previous grant year, OEI implemented a revised structure from ODH for their outreach prioritization strategy. This new strategy permitted the HCPH OEI team to provide services to women in communities outside the 23 priority ZIP codes. While those areas are still high priority and where outreach efforts primarily take place, Neighborhood Navigators consider women from other ZIP codes as being eligible for services. Another important aspect of the program are the relationships built with partnering organizations, which has proven to be an essential piece for identification efforts.

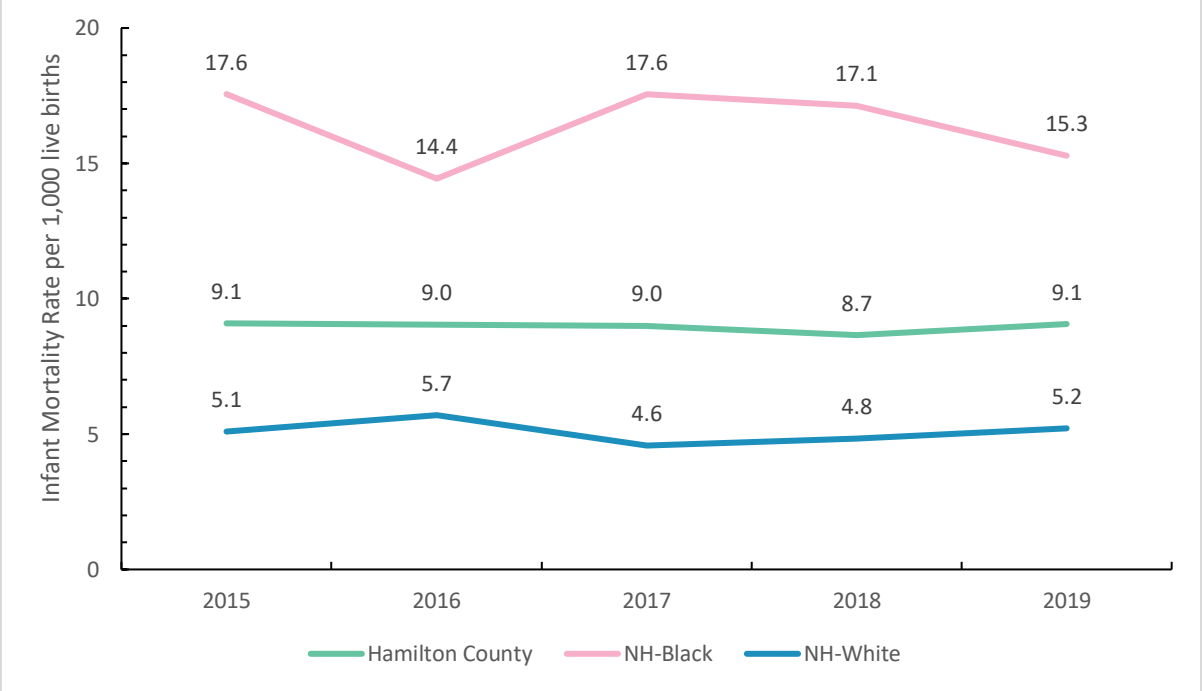
One of the newest changes made during the FY20 grant year, was an established partnership with the University of Cincinnati (UC) Health. Both improvements, along with past strategies have strengthened the presence of OEI in Hamilton County and serve as examples for how OEI can continue to advance its efforts while prioritizing the needs of Hamilton County in years to come.

Infant Mortality, Preterm Birth, and Low Birthweight in Hamilton County

Health disparities in infant mortality, preterm birth, and low birthweight, remain a pervasive issue within the communities of Hamilton County and across racial and ethnic differences. The following figures display the state of infant mortality and birth outcomes in Hamilton County from the years 2015 to 2019. Disaggregating the data by race/ethnicity helps to identify which groups are impacted the most, and furthermore where efforts should be focused.

Non-Hispanic Black babies tend to have poorer birth outcomes compared to Non-Hispanic White babies and relative to the overall population. Additionally, Non-Hispanic Black babies – the group with the poorest outcome, have a higher infant mortality rate (**Figure 2**), preterm birth rate (**Figure 3**), and low birthweight birth rate (**Figure 4**) when compared to Non-Hispanic White babies - the group with the best outcome. The trends for preterm birth and low birthweight are similar to that of the infant mortality rate. This is because preterm birth and low birthweight are common risks factors on the casual pathway to infant mortality. [1]

Figure 2. Infant Mortality Rate in Hamilton County by Race/Ethnicity, 2015-2019



[1] Ely, D. M., & Driscoll, A. K. (2019). *Infant mortality in the United States, 2017: Data from the period linked birth/infant death file*.

Figure 3. Preterm Birth Rate in Hamilton County by Race/Ethnicity, 2015-2019

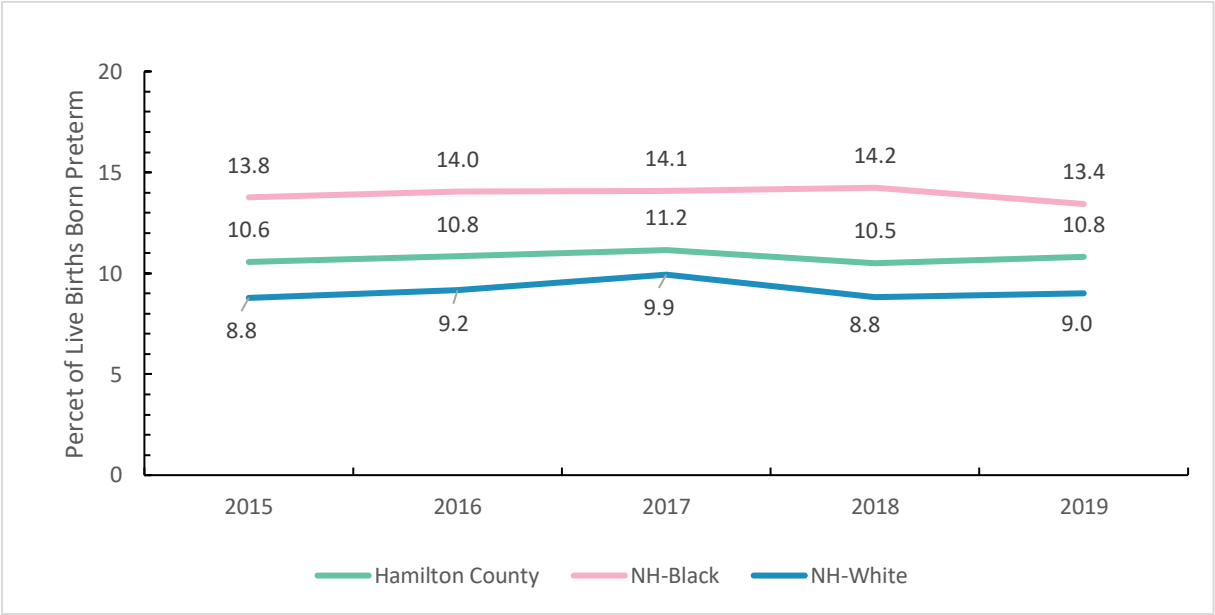
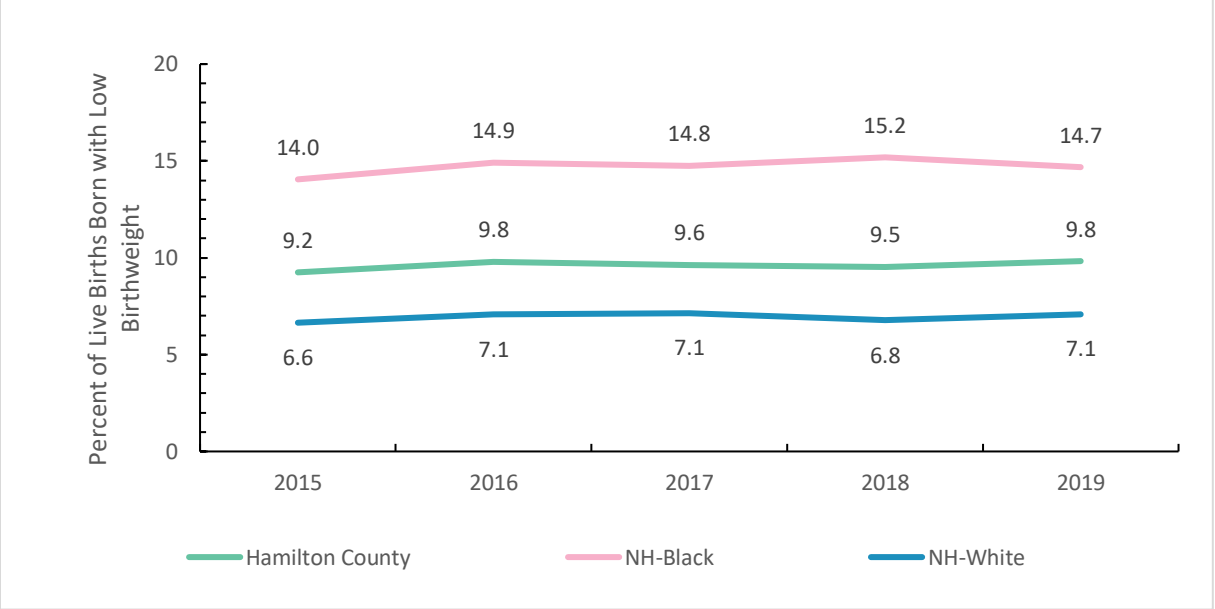


Figure 4. Low Birthweight Rate in Hamilton County by Race/Ethnicity, 2015-2019



The following figures demonstrate the geographic distribution of infant mortality (**Figure 5**), preterm birth (**Figure 6**), and low birthweight (**Figure 7**) across the county by ZIP code. Similar to racial/ethnic differences, the impact of birth outcomes is not equally distributed across communities. Depending on the community, rates of preterm birth and low birthweight are highly congregated, and in some of those communities, but not all, there are higher rates of infant mortality. In fact, most of the areas demonstrating poor birth outcomes fall under one of the 23 priority areas that were identified as hotspots because of their high rates of preterm and low birth weights, and having some of the largest disparities between non-Hispanic Black and non-Hispanic White women. Although some areas suggest high burden with respect to these outcomes, further analyses would need to be conducted before confirming these areas as hotspots that would inform any decisions based on the prioritization for outreach efforts. As such, preventative efforts of OEI, should continue to prioritize communities with the highest rates of infant mortality, preterm birth, and low birthweight.

Figure 5. Infant Mortality Rate in Hamilton County by ZIP code, 2015-2019

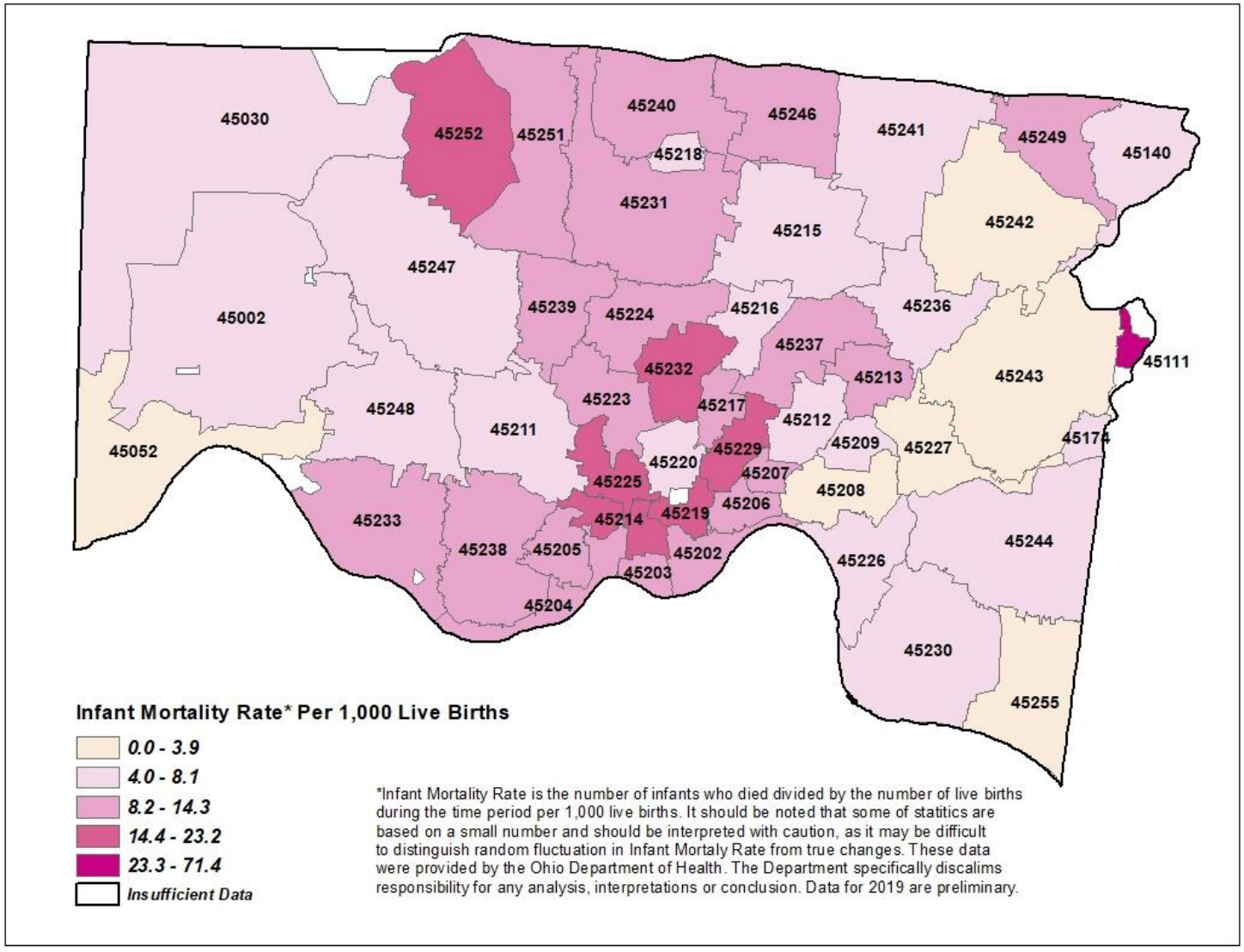


Figure 6. Preterm Birth Rate in Hamilton County by ZIP code, 2015-2019

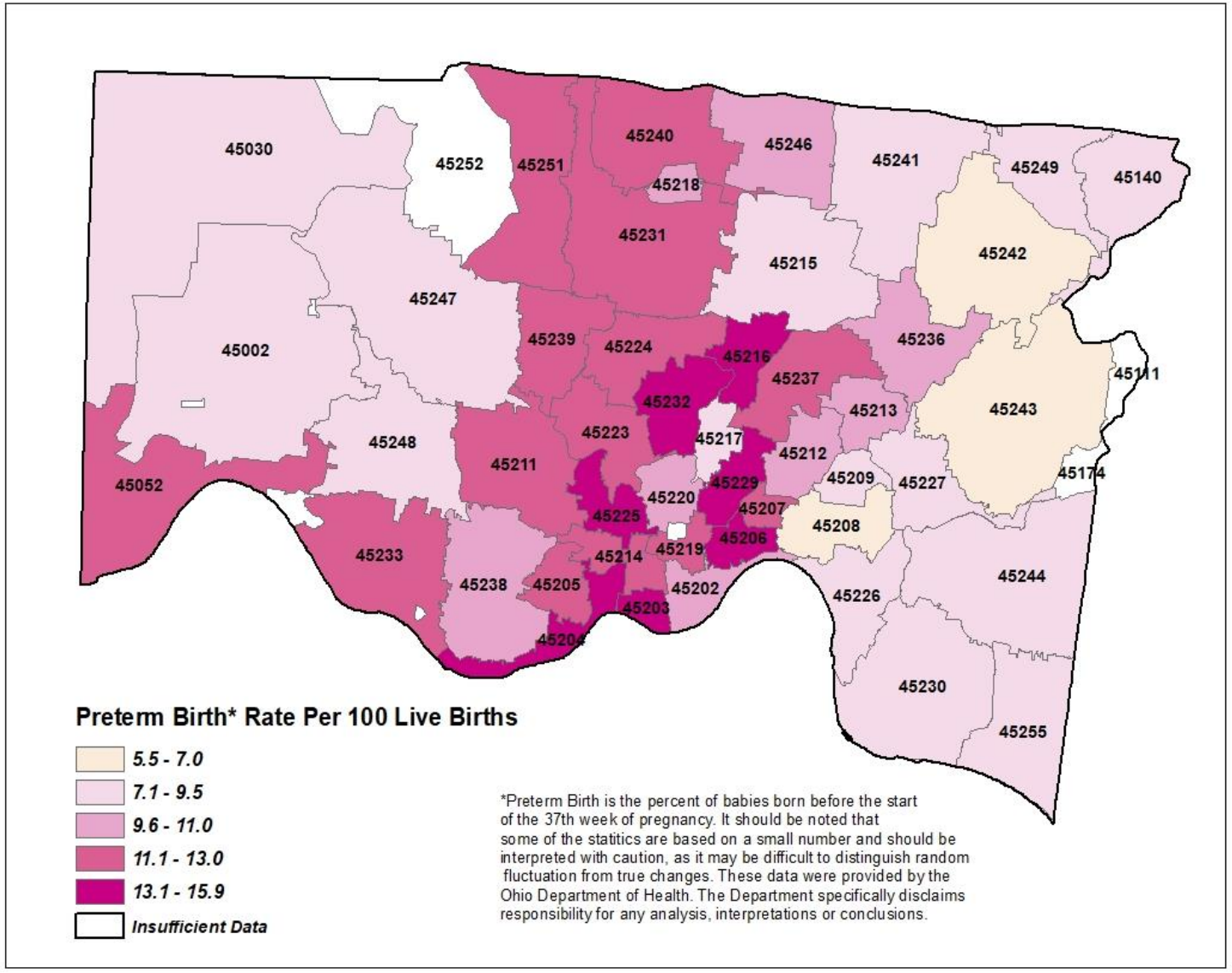
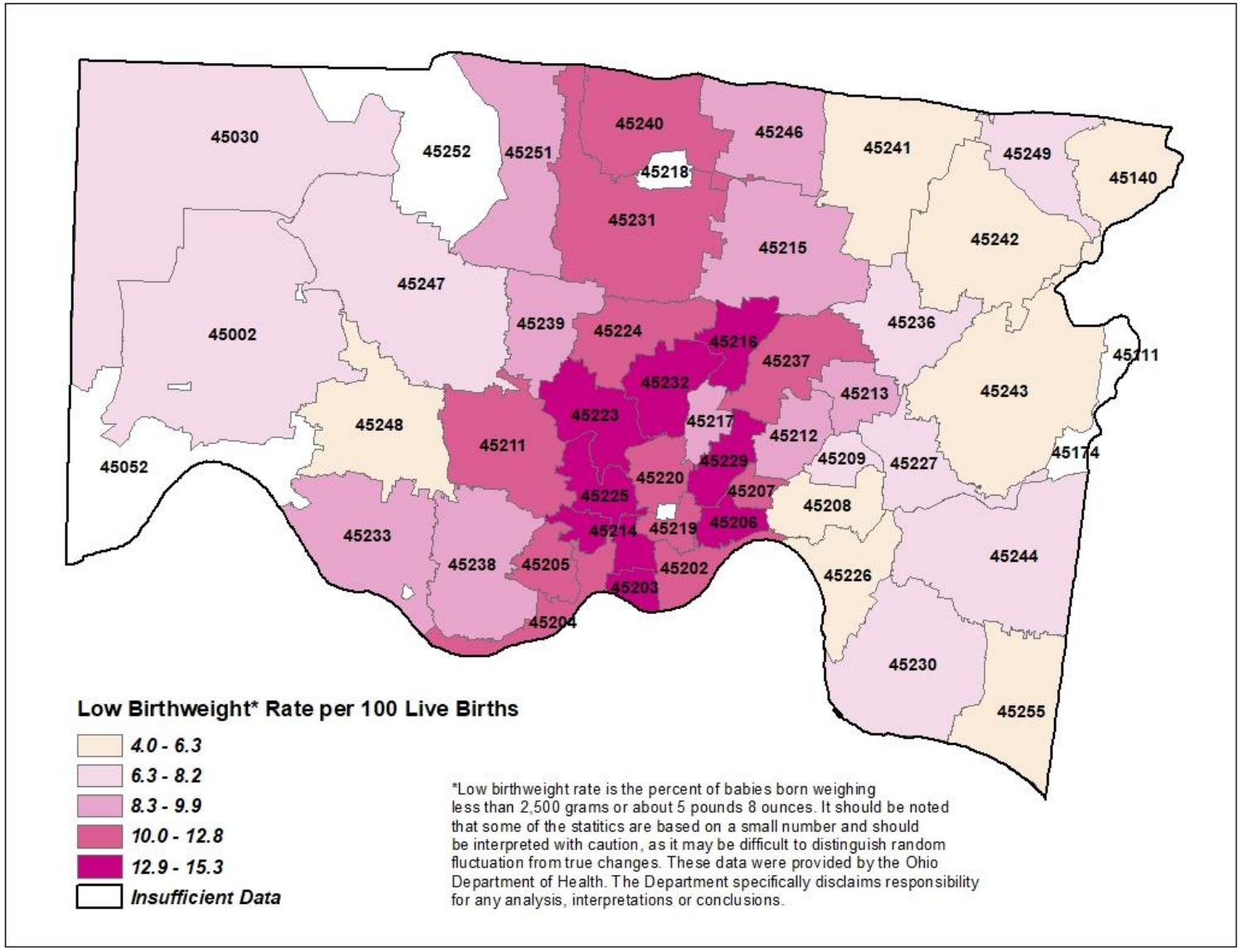


Figure 7. Low Birthweight Rate in Hamilton County by ZIP code, 2015-2019

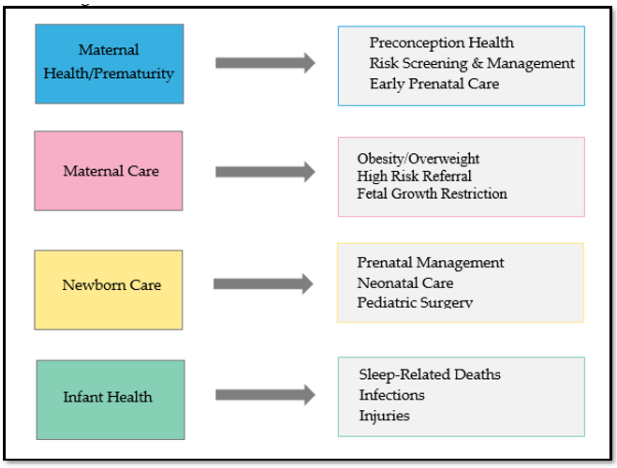


Perinatal Periods of Risks

The framework for perinatal periods of risks (PPOR) recognizes four risks periods that can be used to classify and characterize the occurrence of fetal and infant deaths. The four periods of risks: Maternal Health/Prematurity, Maternal Care, Newborn Care, and Infant Health, are potential areas of risks that are known to be associated with other risk factors for mortality (**Figure 8**). The analysis performed for this framework uses vital records data of births, infant, and fetal deaths, which allows communities to identify the period of risk and its associated risk factors contributing to the fetal and infant mortality.

In the most recent report,[2] that included data from the PPOR analysis for Hamilton County, [3] maternal health/prematurity was found to be the risk period having the greatest impact on feto-infant mortality. Additionally, it was the period contributing the most to excess deaths[4] in Hamilton County. In fact, it accounted for 45% of all excess deaths. A more in-depth analysis was conducted to identify the causal factors contributing to the excess deaths in the maternal health/prematurity period. Results from this

Figure 8. Perinatal Periods of Risks



analysis determined that 88% of excess deaths were due to birth weight distribution, such that a high number of infants being born in Hamilton County have very-low birthweight.

The implications from these results reflect the current conditions that women in Hamilton County encounter today. Interventions focused on improving birth outcomes should address the underlying risk factors in the perinatal period of risk known to have the greatest impact. The analysis highlights the health inequities for birth outcomes among women in this county; and furthermore, underscores the need and efforts of OEI in the community.

[2] Hamilton County Public Health. (2019). *Perinatal Periods of Risks.* Whitney Rémy.

[3] The analysis included deaths from 2014-2018, and fetal and infant deaths were among Hamilton County, Ohio residents.

[4] Excess deaths were calculated by subtracting the reference group feto-infant mortality rate from the Hamilton County feto-infant mortality rate. The reference group used for this analysis were fetal and infant deaths among Non-Hispanic White women that were residents of Ohio.

3.0 Corrective Action Plan

Each year, OEI seeks new opportunities to reach performance goals and does so by evaluating the process, fidelity, and effectiveness of the program that may help to identify areas for improvement. To support the targets laid out in OEI 2.0, a corrective action plan was developed to serve as a guide of tangible steps for working towards the goals of FY20 grant year. Following the model of Continuous Quality Improvement, the OEI team flow charted the process used by the Neighborhood Navigators to identify and engage pregnant women, identified "as-is" a "desired" states for the program, and used this to develop a fishbone diagram. This model helped the team to identify and explore the root causes of the problems as it related to the program, and thus enabled the team to work towards a solution for continued improvement.

Included in the Hamilton County corrective action plan are the goals and corresponding objectives that were developed and agreed upon by the HCPH OEI team (**Table 1**). The corrective action plan was submitted to and approved by ODH. A timeline was established for reaching each goal, and the team provided updates on their progression during the first 90 days of the review period. At the end of the review period, updates were provided only on a quarterly basis.

Table 1. OEI 2.0 Corrective Action Plan, Goals and Objectives

Goals	Objectives	Progress
1. OEI Team will increase the total number of women served from FY19 to FY20 by 100%	**1a.** OEI Team will double its average monthly enrollment from FY19	**Achieved** ○ Total number of women served increased by 117%
2. OEI Team will identify new avenues to reach women within Hamilton county and connect them to comprehensive clinical care and other needed services.	**2a.** HCPH OEI Staff will look to strategically engage new partners or reengage partners within Hamilton County to support the efforts of OEI 2.0	**Achieved** ○ Established new partnership with The Women's Center of Ohio, and reengaged with other community agencies ○ Executed contract with UC Health ○ Established presence at the Justice Center's Monthly One Stop Resource Events and public library social service events
	2b. The Hamilton County OEI team will pilot the placement of a Neighborhood Navigator within the UC Health system	
	***2c.** Neighborhood Navigators will host and attend additional events in Hamilton County that will help identify unserved eligible pregnant women.	
3. OEI Team will review and modify existing marketing materials and screening practices to draw in women and ease the process of engaging with Navigator services	**3a.** Project Coordinator will work with OEI Staff to review marketing materials	**Achieved** ○ Hot cards were revised to better reflect OEI services ○ Due to revised screening process, a text option was no longer needed
	***3b.** The Hamilton County OEI team will work with a HIPAA Consultant to determine if/how to offer a text option for eligibility screening that is compliant with data security and privacy requirements.	

*progress impacted by the COVID-19 pandemic

For the HCPH OEI team, achieving the targets of OEI 2.0 meant strengthening their efforts both internally and externally to double the enrollment of eligible women from FY19 grant year. The goals set out (**Table 1**) were focused on the retention, identification, and engagement of women throughout the course of the program. Progress towards each goal was documented monthly and allowed the team to monitor their performance throughout the grant year.

For Goal 1, the total number of women served from FY19 to FY20 had increased by 117%. Over the course of the grant year, efforts to engage women at different stages in the program that in turn helped with retention improved as more women were served. To achieve Goal 2, a new partnership with UC Health had been established and offered the largest opportunity to expand the team's ability to identify

more women. Additionally, the Project Coordinator solidified a new partnership with the Women's Center of Ohio, located in Forest Park, and would serve as another avenue to identify women.

Strategies to identify women, also emerged in Goal 3; specifically, with the development and revision of existing marketing tools. Changes made to the hot cards were based on discussion and feedback from Neighborhood Navigators. The hot cards were simplified and clarified the role of OEI in connecting women to resources rather than directly providing them (**Table 2**). New wording, in the form of a tagline was also added to the hot cards that would help to attract clients reluctant to ask for help, but who would like to talk about their experience. The new hot cards were distributed and offered an opportunity to reengage with other social service agencies and businesses in the community.

Table 2. Hot Cards

Hot card, FY19	Hot card, FY20
	

Ongoing communication, collaboration, and organization amongst the OEI team was considerably important for the progression of each goal. Overall, the corrective action plan served as a reminder for the goals set out as the team progressed into the new grant year. Additionally, providing regular updates held members of the team accountable in adhering to the projected timeline and meeting each goal.

4.0 Neighborhood Navigation Services

Outreach Plan

The services provided by HCPH's team of Neighborhood Navigators comprise the downstream component of OEI 2.0. The Neighborhood Navigator is responsible for identifying and connecting eligible women to clinical and social services. The HCPH OEI team includes two Neighborhood Navigators employed by HCPH and partnership with UC Health to have a Neighborhood Navigator integrated into the UC Health system. Neighborhood Navigators use several different strategies to find pregnant women including canvassing within the priority ZIP codes, promoting the OEI navigation line, tabling at community events, hosting pregnancy-related events, using social media, and obtaining referrals from partner agencies. The OEI team has been working in our community for the past 2 years to build our brand recognition and establish the reliability of our services through strategic partnerships and community building.

Navigation Strategies

Community Canvassing

Neighborhood Navigators canvas within the 23 priority ZIP codes. Hot cards, which are postcard-sized marketing materials that include the OEI navigation line, were disseminated to reach pregnant women in the community. This strategy seeks to fill gaps in existing traditional outreach networks by reaching women where they live, work, shop, and socialize. Within stores, hot cards were strategically placed in aisles that contained items pregnant women may need (e.g., pregnancy tests, baby items, prenatal vitamins, etc.). The navigation line allows for women who find the hot cards to conveniently provide their contact information to connect them to a Neighborhood Navigator. When women call into the navigation line (and leave a voicemail with their preferred contact information), they will receive a return call from a Neighborhood Navigator within 24-48 hours to collect additional information about them to determine eligibility for the program. A woman is determined eligible for the program when a Navigator completes an eligibility screening with her. Based on a series of set criteria, if a woman is found to be eligible for the program, an intake session is then scheduled. A woman is considered to be served through the OEI program when the Neighborhood Navigator has successfully completed the in-person intake, and three follow-up attempts have been made by the Navigator.

The goal through this process is to identify risk factors and needs, provide referrals, and follow up to determine whether referrals were accessed and utilized successfully. If referrals were not accessed by the women served, Neighborhood Navigators would try to learn from the women why the referral was not accessed (i.e. referring agency didn't follow-up; contact information was wrong; follow-up from referral agency was not timely etc.) or if the referral was not helpful. The Neighborhood Navigator integrated into the UC Health system, works solely within that setting, and therefore uses a traditional form of outreach to identify women. Similarly, the Neighborhood Navigator is responsible for identifying the needs of women, facilitating the referral process, and determining usage of referrals.

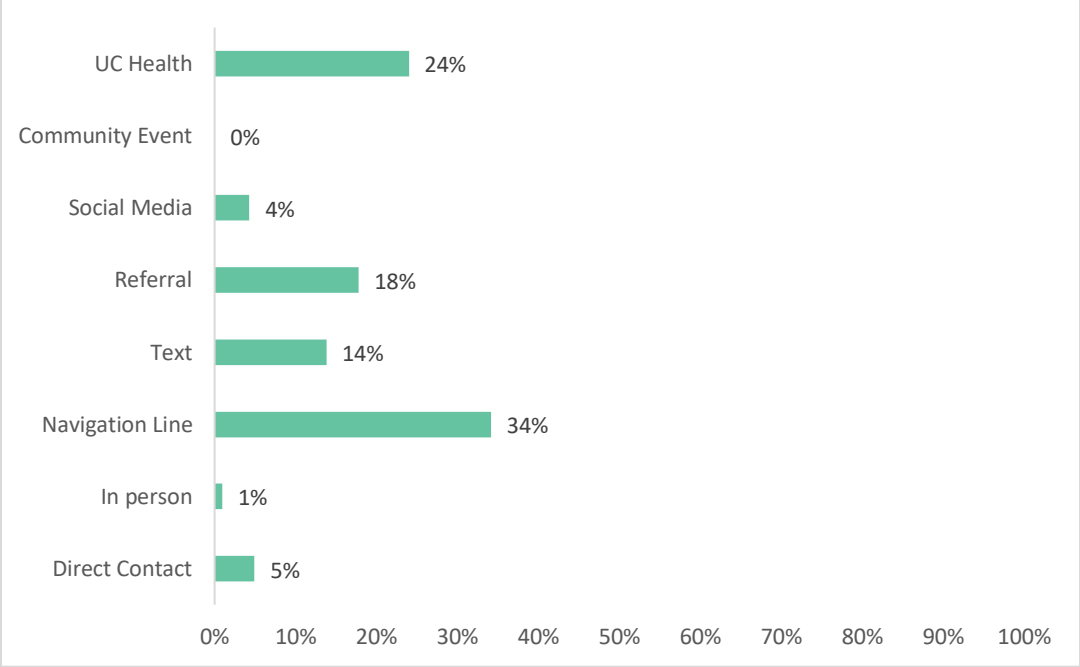
COVID-19 Highlights

A major shift in navigation strategy happened in March because of the COVID-19 pandemic. Unable to do in person outreach and community canvassing, the Neighborhood Navigators switched to exclusively using online outreach on their personal social media pages and using their existing social networks to outreach to pregnant women. Intake meetings, which previously had always occurred in person, had to shift to phone and video calls. The Project Coordinator set guidelines for obtaining verbal consent for Navigation Services and began mailing incentive gift cards to women who completed intakes.

Community Engagement Data

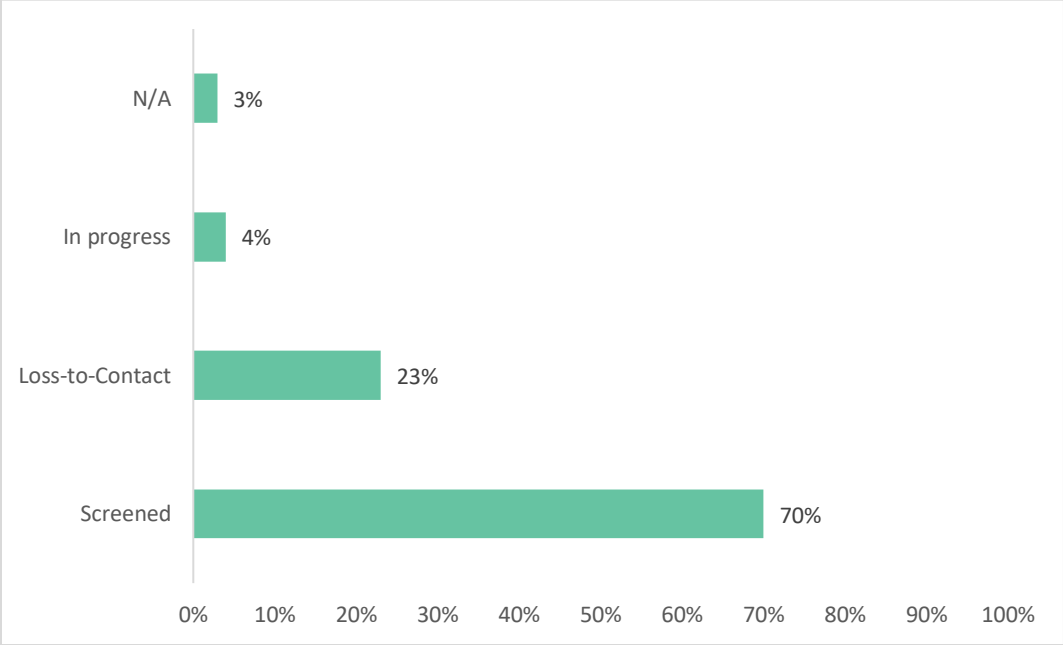
The top two avenues of outreach were the navigation line and UC Health. The figure below provides an overview of the different avenues of outreach for FY20. Similarly, to the previous grant year, most of the women found through outreach called into the OEI navigation line (34%), followed by women who presented to the UC Health system for care (24%). Referrals were another important avenue for identifying women. The means by which women were found in person, through direct contact, text, and social media, accounted for a much smaller proportion. However, these avenues remain important in identifying women who otherwise would not be found using traditional strategies or in a traditional setting.

Figure 9. Avenue of Women Approached for OEI Services



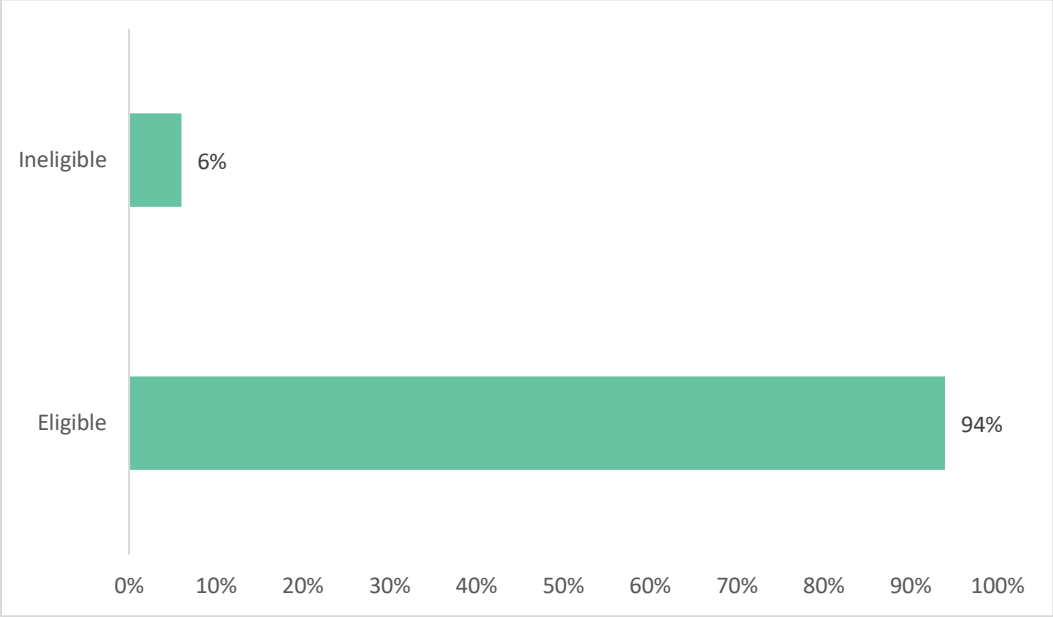
Through community canvassing, Neighborhood Navigators were able to identify potential women who could benefit from OEI services. **Figure 10** demonstrates the status of those women while going through the recruitment process. Majority (70%) of the women were screened for OEI services, 23% were lost-to-contact, and 4% still in progress (eligibility status had not yet been determined at the time of this report). Some of the women (3%) resided outside of the Hamilton County ZIP codes and where connected to another OEI locality, others were no longer interested in receiving OEI services. While referrals were the third most common avenue for outreach, many of the women found via referrals were loss-to-contact. UC Health, and direct outreach were truly the most effective in ensuring the women found were retained.

Figure 10. Status of Women Approached for OEI Services (N=326)



To be eligible for OEI services, a woman must be pregnant, earning an income 200% below the poverty level, not already served by a home visitor or community health worker, and have at least one identified risk factor related to a poor birth outcome. Most of the women (94%) screened met the eligibility criteria to receive services through OEI (**Figure 11**).

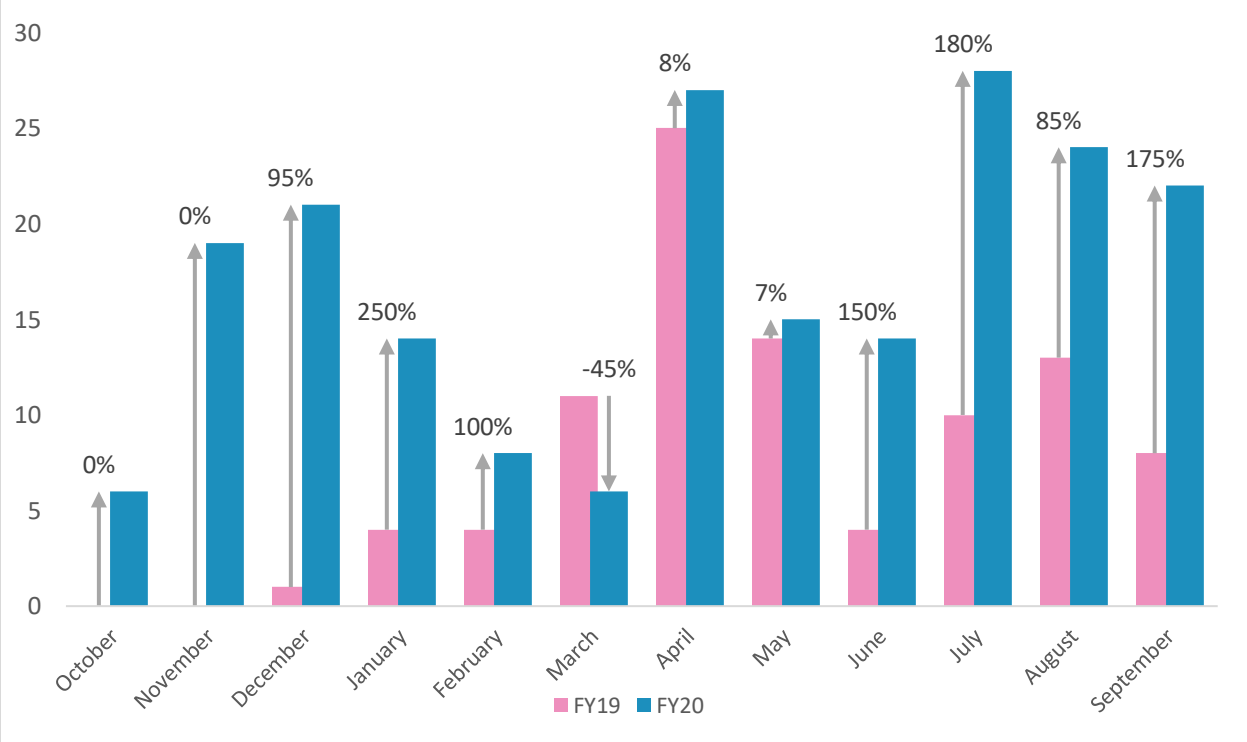
Figure 11. Eligibility Status of Women Screened for OEI Services (N=229)



Breakdown of Women Served

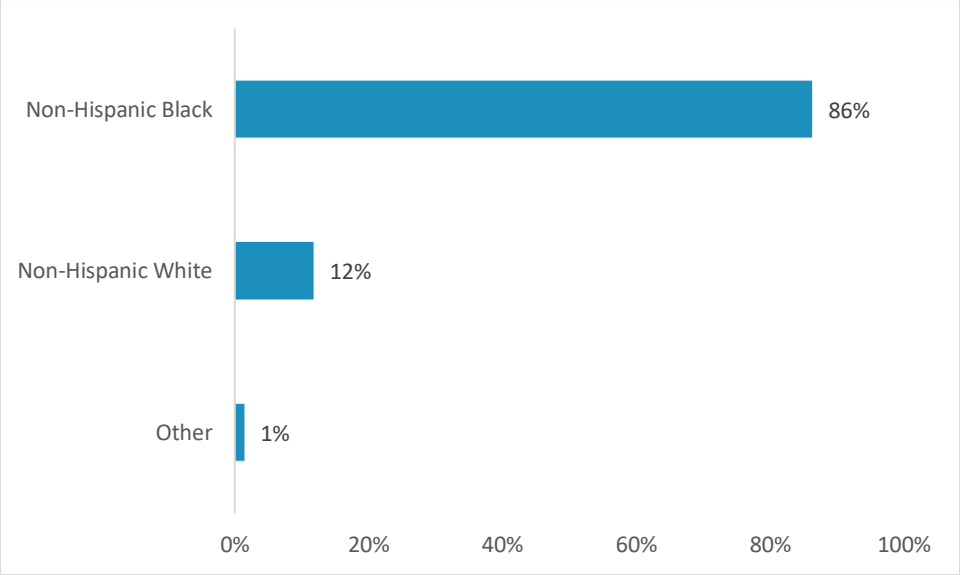
Efforts to increase the number of women served from FY19 to FY20 by 100%, were monitored monthly to assess the team's performance. Demonstrated in **Figure 12** is a comparison of the trend in number of women served monthly in FY19 and FY20. Each month includes the percent change in the number of women served across both years. Recruitment efforts to identify women in FY19 did not start until December. The HCPH OEI team performed exceptionally well during the months of January and February and lost their momentum around March. It is likely that the negative percent change was a result of the COVID-19 pandemic, in which in person outreach and the ability to serve women were drastically reduced or stopped completely. Though shortly after, the HCPH OEI team regained momentum, and by June had exceeded their goal of 100%. By the end of the year, the HCPH OEI team had successfully increased enrollment by 117%.

Figure 12. Percent Change of Women Served per Month, FY19 and FY20



Of the women served, majority (84%) identified as non-Hispanic Black (**Figure 13**); demonstrating that chosen outreach strategies were successful in identifying Black prenatal women. To identify Black women for OEI services, Neighborhood Navigators canvass in predominantly Black spaces within specific community settings, including Black owned businesses, and Black women focused/sponsored events. Additionally, the HCPH Neighborhood Navigators are both registered doulas with practices focused on advocating for and empowering Black women. They have a known and established presence in the Black community and can utilize their existing social network. Members of the community can come to them with questions and concerns regarding pregnancy and birth, and easily start a conversation.

Figure 13. Race/Ethnicity of Women Served (N=204)



The demographic make-up of the women served based on the distribution of age (**Figure 14**), educational attainment **(Figure 15**), and insurance status (**Figure 16**), certainly reflects the population with the greatest risks for poor birth outcomes and most in need of OEI services.

Figure 14. Age of Women Served (N=204)

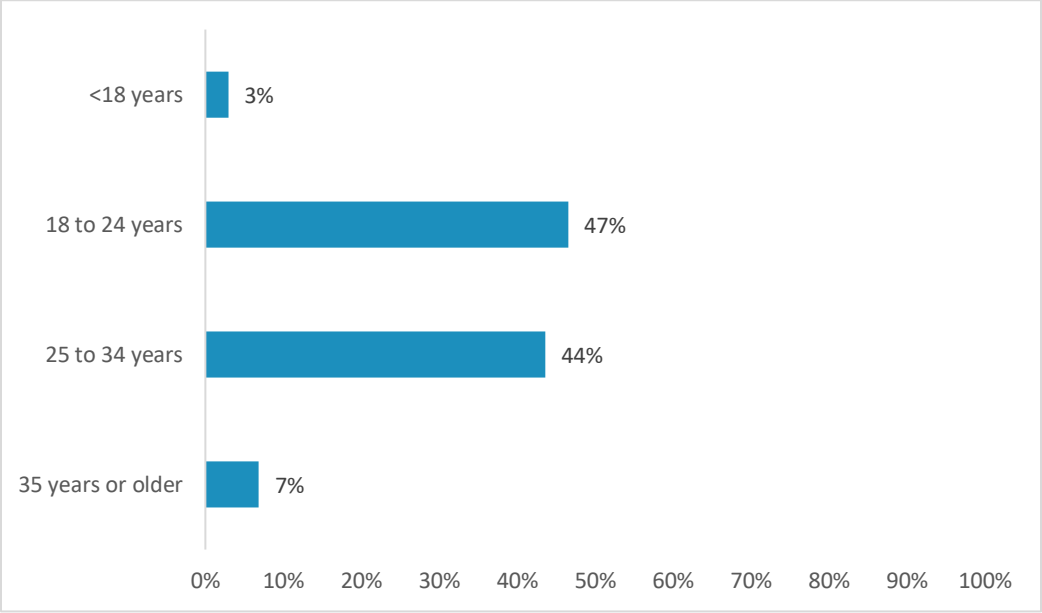


Figure 15. Education of Women Served (N=204)

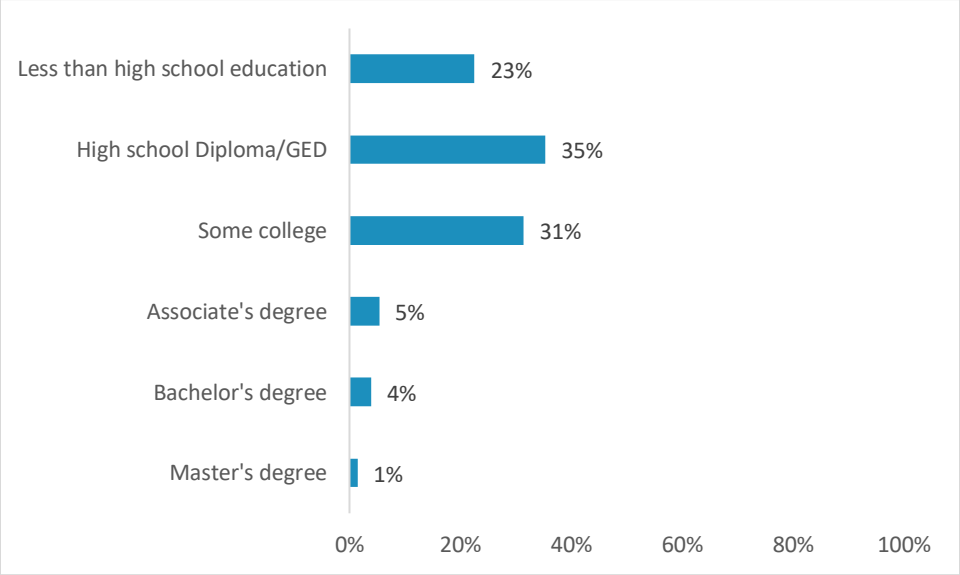
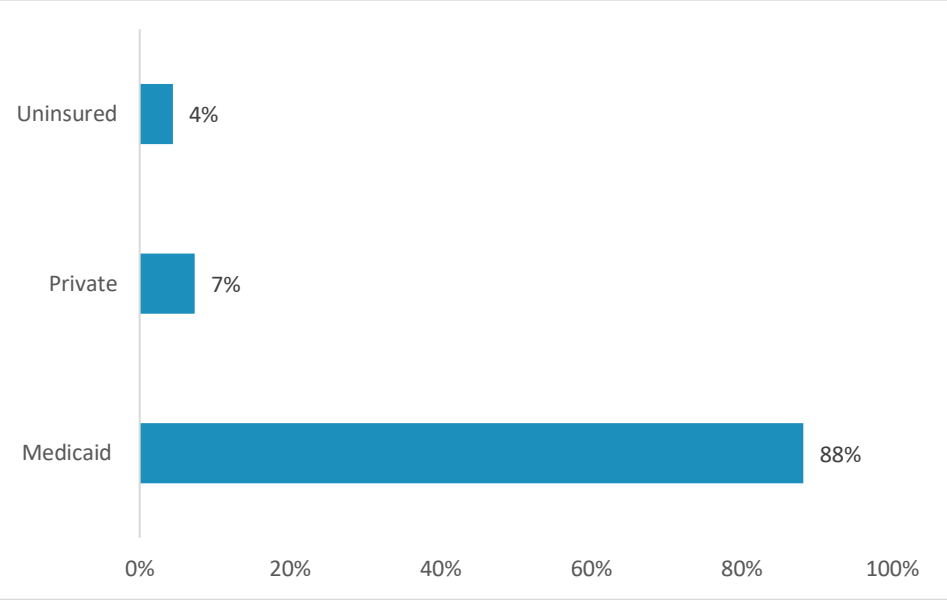
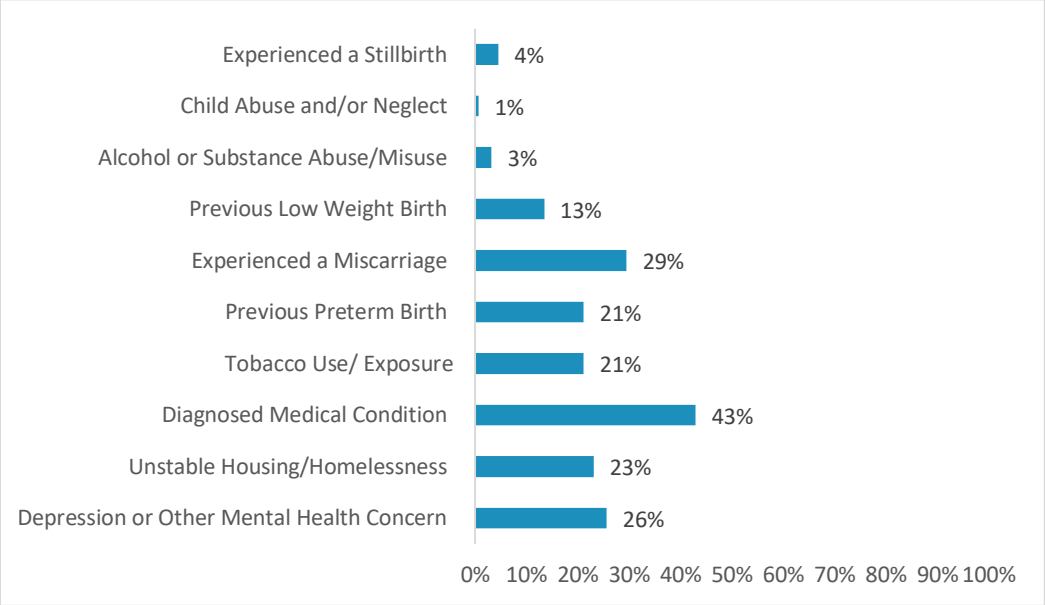


Figure 16. Insurance Status of Women Served (N=204)



A woman was considered "served" once an intake by a Neighborhood Navigator was complete and three follow-up attempts had been made. During the screening process, risk factors known to be associated with poor birth outcomes were identified. **Figure 17** displays the risk factors reported by women served. Most (43%) women reported being told by a provider that they have a diagnosed medical condition, followed by, having a prior miscarriage (29%), history of depression or other mental concern (26%), and unstable housing (23%). On average, women reported two risk factors, and with each additional risk factor there is a greater risk for a poor birth outcome.

Figure 17. Risks Factors for Women Served



Prenatal care, outside of the care provided, is an opportunity for women to share with their provider daily stressors or risks that may impact their pregnancy. Provided that the patient receives appropriate care, it may help to mediate or eliminate the effects of certain factors that lead to a poor birth outcome. Fortunately, the majority (98%) of the women had already initiated care (**Figure 18**), and 17% reported having any barriers to prenatal care (**Figure 19**). Of those women, 88% reported transportation as a barrier (**Figure 20**).

Figure 18. Initiation of Prenatal Care among Women Served (N=204)

Figure 19. Barriers to Prenatal Care among Women Served (N=204)

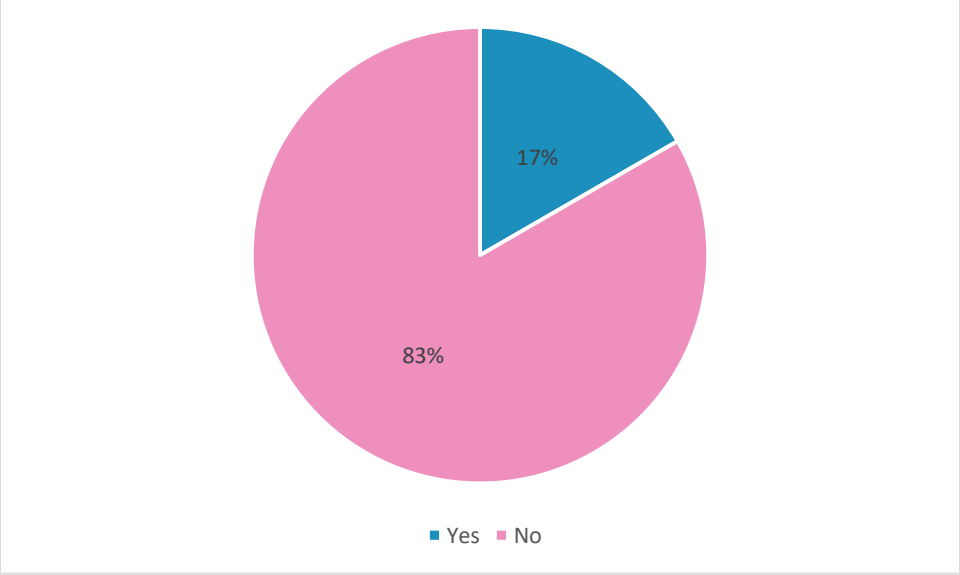
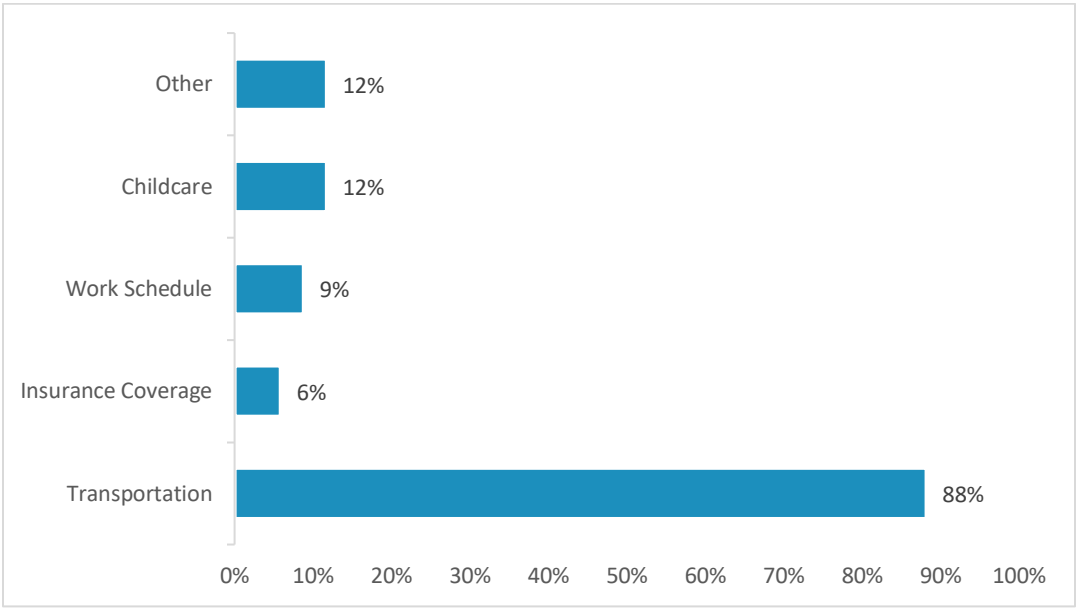
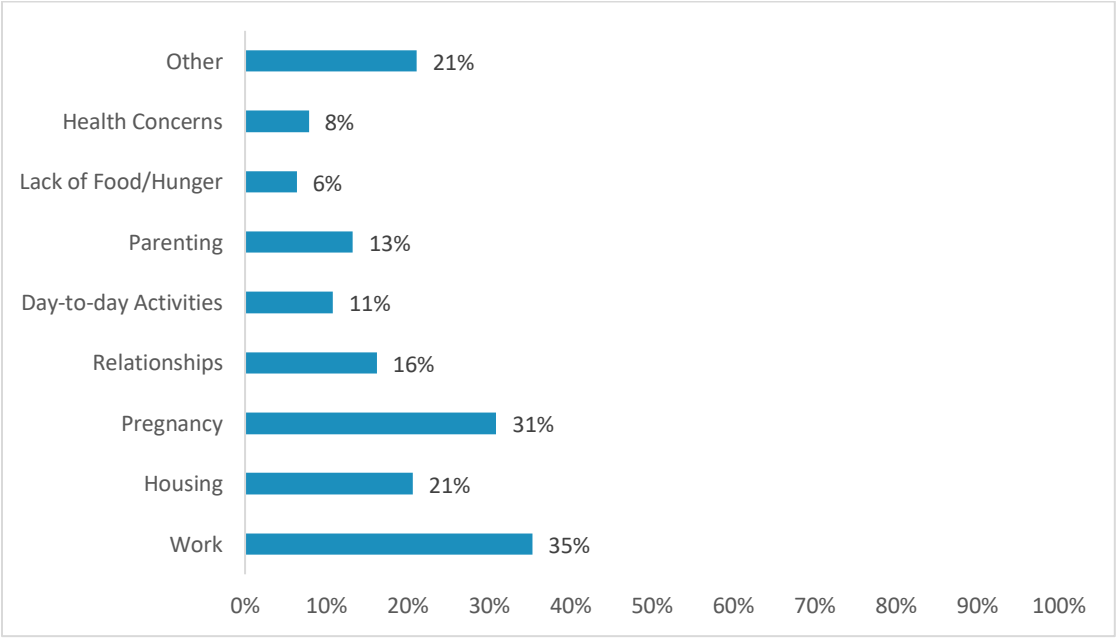


Figure 20. Identified Barriers to Prenatal Care (N=34)



Additionally, women were asked to report stressors that caused the most stress on an average day (**Figure 21**). Work (35%) and pregnancy (31%), were factors causing the most stress

Figure 21. Stressors Reported by Women Served (N=204)



Social and Clinical Services

Follow-up attempts were a way for the Neighborhood Navigators to engage with the women and facilitate the referral process. It was also an opportunity to learn if additional support was needed and determine whether a referral had been utilized. **Table 3** displays the indicators that best reflect the efforts of the Neighborhood Navigators from the point of intake, engagement, and follow-up throughout the screening process. Nearly, all (99%) of the needs that were identified were met with a referral. However, only 15% of the referrals offered were utilized. In most cases the Neighborhood Navigators were unable to contact the women after the initial intake had taken place. This was the biggest barrier in determining if a referral offered had been utilized.

Table 3. Delivery of OEI Services

Indicators	
Number of needs identified	1073
Number of referrals offered	1068
Number of referrals utilized	165
Percent of needs met	99%
Percent of referrals utilized	15%

Majority (81%) of the referrals offered were social services and 19% were clinical. **Figure 22** and **Figure 23** demonstrate the different services offered and utilized based on the clinical and social needs identified. While referrals to social services comprised the greatest number of referrals offered, only 6% were utilized compared to 48% of clinical services. Among the women served, many of their needs spanned across several social factors, and unfortunately, services to address those needs were underutilized. More complete and descriptive data is needed for the OEI team to better understand the process and barriers to referral usage. Despite this limitation, there was ample data of the services that women were referred to by Neighborhood Navigators. For more information on the names of community resources that the women were referred to please see the Appendix.

Figure 22. Clinical Services Utilized and Offered

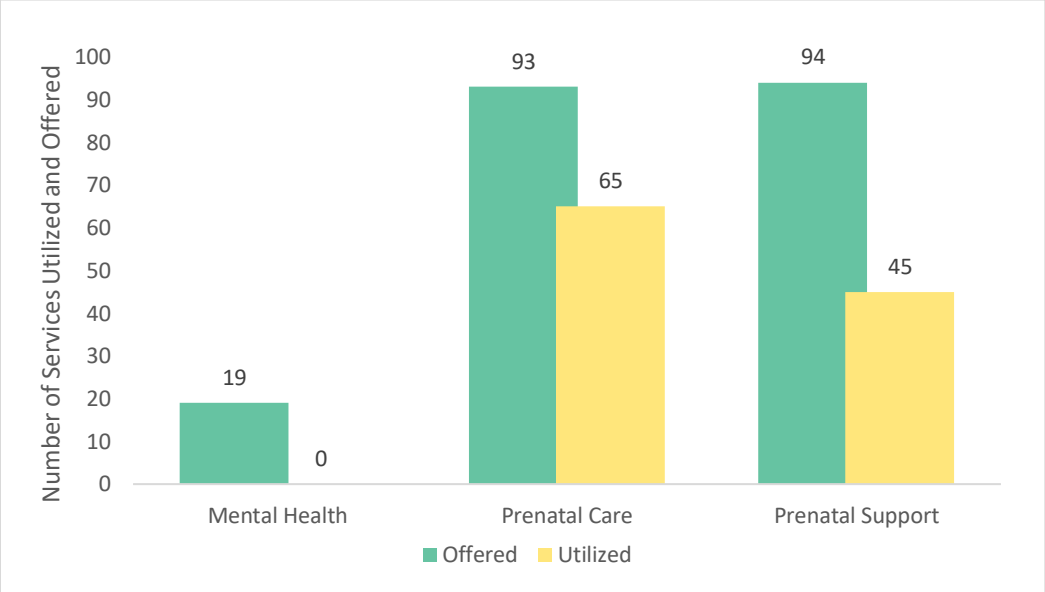
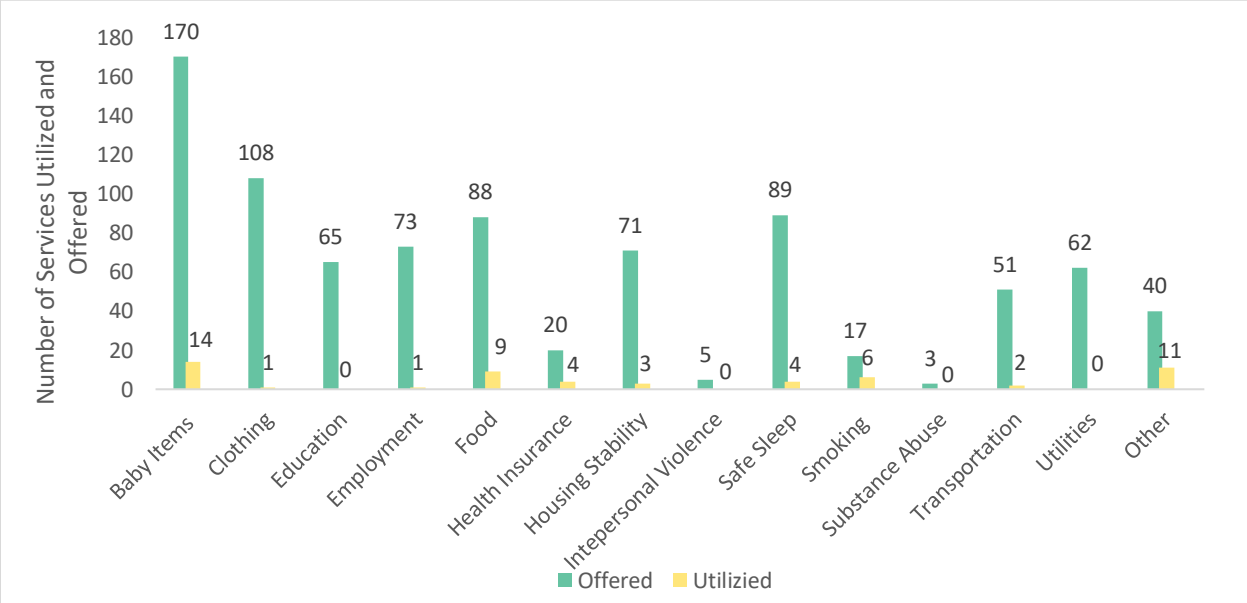


Figure 23. Social Services Utilized and Offered



Highlight of Community Partners

The work of OEI in Hamilton County would not be successful without the many community partnership HCPH has developed. Below is a highlight of the community partnerships that have been the most beneficial to HCPH successfully implementing OEI 2.0 program goals within Hamilton County.

- **Cradle Cincinnati** is the lead agency for the Ohio Department of Medicaid (ODM) infant vitality project. Their community health workers (CHW) serve 20 priority ZIP codes. Cradle Cincinnati is also the collective impact organization for infant mortality in Hamilton County and leads the Policy Committee, which served as the Social Determinants of Health (SDOH) Team for this project.
- **Every Child Succeeds** offers a home visitation program to help first-time parents create a nurturing, healthy environment for their children. Home visits take place from the time of pregnancy through the child's 3rd birthday.
- The many branches of the **Public Library of Cincinnati and Hamilton County** are places that local families gather and have allowed the Neighborhood Navigators to connect with potential women and host BUMP events.
- The **Christ Hospital's** prenatal services refer their pregnant clients who need additional services to the Neighborhood Navigators to help them find the appropriate resources.
- The **Women's Center of Forest Park** is a Pregnancy Resource Center that provides free pregnancy testing and ultrasounds. They refer clients to Neighborhood Navigators and distribute OEI hot cards to qualified pregnant women.
- The **UC Health** pilot program was put into place this year with a contracted Navigator to screen women that present at the emergency department or other clinical service within the UC Health system who are pregnant and are not currently connected to services.

5.0 SDOH Policy and Practice Change Work

Structure of Hamilton County SDOH Team

The Hamilton County local SDOH team was formed out of a partnership with Cradle Cincinnati to develop and promote new laws and policies at the local, state, and federal level that will help improve birth outcomes and reduce infant deaths.

In developing the Policy Committee, Cradle Cincinnati's Policy Manager reached out to infant vitality partners in the Greater Cincinnati area who were in a position of influence within their organization and invited them to join the committee. The Policy Committee/SDOH team has representatives from over 15 healthcare and nonprofit agencies with a stake in infant mortality in the region (**Table 4**). Other key stakeholders on the committee include a school board member, Ohio state legislator, and a city councilmember chief of staff.

Table 4. Organizations Represented on Policy Committee

Cradle Cincinnati
Health Care Access Now
March of Dimes
Rosemary's Babies
United Way
Christ Hospital
Hamilton County Public Health
Every Child Succeeds
The Health Collaborative
University of Cincinnati
Cincinnati Children's Hospital
UC Health
Bi3 (Bethesda Inc.)
Cincinnati City Council
CareSource

Focus Areas and Evolution in FY20

The committee chose its primary focus areas of housing, income, and transportation based on the Health Policy Institute of Ohio's (HPIO) SDOH Report. The initial priorities of the team were to advocate for Non-Emergency Medical Transportation funding in Medicaid, increasing the number of group prenatal care facilities in the county, make pregnancy a priority population for CMHA housing vouchers, and make the Earned Income Tax Credit refundable. In FY20, a subcommittee structure within the primary SDOH team was launched. The subcommittees are State Budget, Local Policy, Housing and Transportation, and Employment and Education. The SDOH Team goals within the FY20 grant year were to continue successfully implementing and expanding the Housing Choice voucher partnership, advocate for paid family leave policies, and make doula services more accessible to moms within Hamilton County.

FY 19 Policy/Practice Change

Ohio senate bill 332, passed in 2017, as part of its recommendations by the Commission on Infant Mortality, stated that the Ohio housing finance agency shall include pregnancy as a priority in its housing assistance programs. Additionally, a study of social determinants was created by the HPIO as part of Ohio Senate Bill 332. This study identified 127 policy recommendations that could be helpful to promoting healthy birth outcomes and reducing infant mortality.

They recommended that improvements in housing policies need to focus on affordability, stability, quality, and access. HPIO found that access to rental assistance – like the subsidies provided by Cincinnati Metropolitan Housing Authority (CMHA) - had a positive impact on the health of moms and babies and birth outcomes.[5]

These policy recommendations by the state, as well as both quantitative and narrative data from women served by Cradle Cincinnati and OEI identifying housing insecurity or substandard housing as their number one stressor, informed SDOH team policy to help pregnant women with rental assistance. The Greater Cincinnati region is 40,000 units short of affordable housing for extremely poor families.[6] Households that do not receive rental assistance are at the highest risk of experiencing housing-related challenges such as difficulty paying for other necessities, eviction, or feeling forced to live in a dangerous environment.

Accessing federal rental assistance involves applying through a local public housing authority (CMHA). Because the demand for rental assistance is greater than the supply of federal subsidies, Public Housing Authorities (PHA) such as CMHA typically maintain waitlists that can be very long and, in some cases, are closed for periods of time. In 2016, the average number of months eligible households waited before receiving a Housing Choice Voucher (HCV) in Cincinnati was 27.[7] Resultantly, the SDOH team advocated for a policy/practice change of making pregnancy a priority population to receive a CMHA Housing Choice Voucher to bypass this waiting list.

FY19 Implementation

The SDOH team was able to build on an existing partnership between CHMA and Strategies to End Homelessness (STEH) for STEH to set aside 50 of their housing choice vouchers specifically for pregnant

[5] Health Policy Institute of Ohio. (2017). *A New Approach to Reduce Infant Mortality and Achieve Equity*. Amy Bush Stevens
[6] Housing Our Future. (2020). *Strategies for Cincinnati and Hamilton County.*
[7] U.S. Department of Housing and Urban Development, Picture of Subsidized Households: 2016.

women to ensure that pregnant women experiencing (or close to experiencing) homelessness have adequate housing throughout, and after, their pregnancy. After an initial letter to CMHA from the Policy Committee, and several meetings between parties, clear expectations were made and a statement of work between Strategies to End Homelessness and Cradle Cincinnati was approved.

The next steps in implementing this practice was to streamline a new system of identifying eligible pregnant women and getting them into housing. Cradle Cincinnati and OEI were able to identify potential women who could benefit from this partnership. All involved partner organizations were committed to recommending women who would receive the maximum benefit from the referral (early in pregnancy) and who are ensured to be able to be successful once placed.

Cradle Cincinnati CHWs worked with identified pregnant clients to complete the required STEH HCV paperwork to ensure all documentation was filled accurately and confirm the client's eligibility before submitting. Once they were determined eligible, they were placed on the HCV wait list with a preference that raised them to the top of the waitlist. Once approved, the women received a federal HCV through CMHA. The voucher could then be used for any unit that meets HUD standards with agreement from the landlord. The first 50 vouchers were utilized in the first 8 months after implementation of this policy. All clients referred through February of 2020 received a Housing Choice Voucher.

Challenges/Areas for Improvement

COVID-19 caused a significant lag in moving referrals through the process. Prior to this, it was initially a 3-5-week process to get an interview and voucher. For the months of March and April, the program was halted due to COVID-19. When it resumed in May it became a 4-5-month process or longer. Due too many low-income people being disproportionately financially impacted by the job losses and economic strain caused by COVID-19, CMHA had to pay higher portions of subsidized rent for their affected tenants who were unable to make rent. This caused significant halts and delays in their ability to pull people off the waitlist for an interview and get them vouchers. This does not affect a mom's ability to get a voucher, if the moms give birth during the waiting time, they are still eligible to receive a voucher. However, the delays may lessen the ability to have a positive impact on her birth outcome.

FY20 Policy/Practice Change

In 2020, we as a community saw the rampant inequities come to light more prominently through a disproportionate burden of COVID-19 illness and death in Black communities, as well as the rise in

increasingly unignorable cases of continued police brutality against people of color. These events clearly demonstrated the long history of systemic racism and its long-lasting effects on our Black citizens. Because of this, it became essential this year to work with our local officials to declare racism as a public health crisis. Structural and systemic racism in our society is responsible for inequities across many facets of the lives in the women served by OEI – education, employment, health care access, housing, policing, and so many more, which in turn greatly impact their health and wellbeing. This is what drives the OEI work in improving the social determinants of health, eliminating disparities in infant and maternal mortality as well as supporting children and families of color who have a right to live and obtain a better quality of life.

Informed by data from both Cradle Cincinnati and HCPH, the team worked with both City of Cincinnati Council members and Hamilton County Commissioners to pass resolutions acknowledging and expressing commitment to address racism as a public health crisis. These concordant resolutions at both the city and county level will empower further collaboration with community leaders and stakeholders across the health, education, employment, housing, and criminal justice sectors to improve the life and health for Black residents in Hamilton County.

6.0 Stories from the Field

Social Determinants of Health Assessment

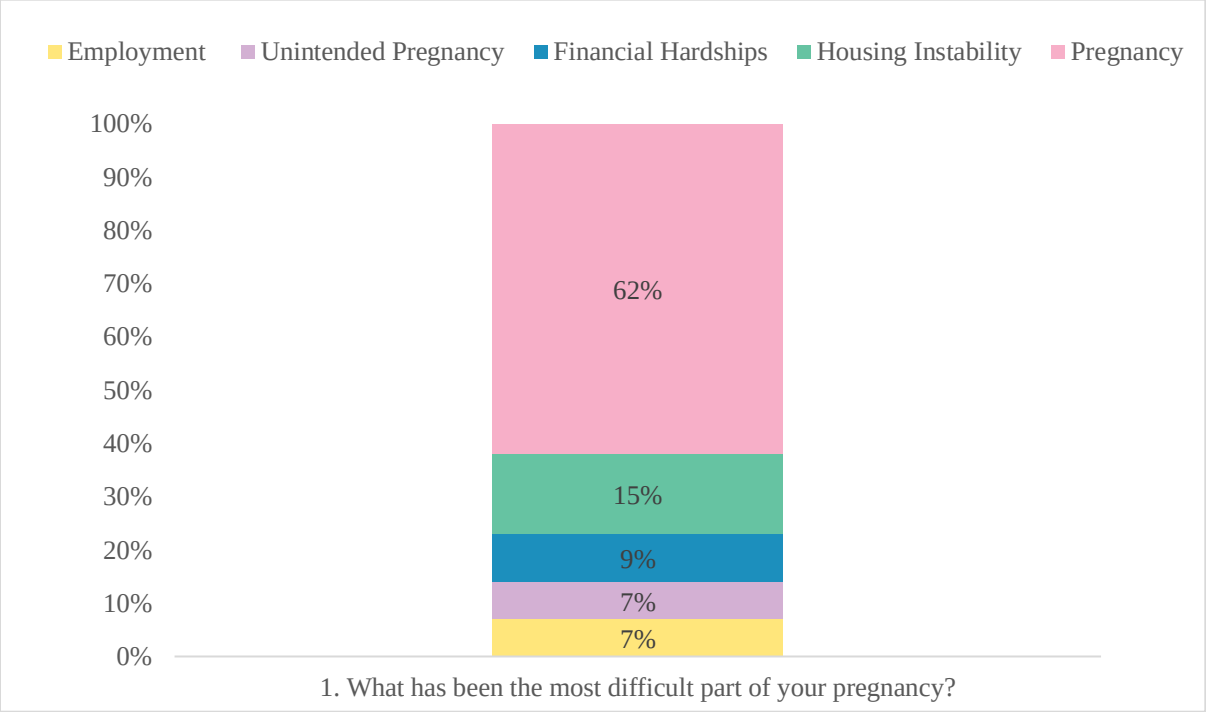
The social determinants of health assessment is an additional form that was developed by the HCPH OEI team. The tool is incorporated in the screening process and is intended to capture qualitative data on factors relating to the period of pregnancy for woman screened. Data collected from this tool provides insightful information regarding the experiences, barriers, and resources contributing to maternal and infant outcomes like housing, childcare, food, and health care. The Neighborhood Navigators recognized the sensitivity of these topics, and so when facilitating conversation made sure that the women were comfortable enough to engage in discussion around the following questions:

1. What has been the most difficult part of your pregnancy?
2. What has been helpful during your current or past pregnancy? and
3. Are there any other services or support systems that you have or wished you had?

Responses to the questions were paraphrased and documented in REDCap by Neighborhood Navigators. Each record (N=212) was thoroughly read and thematically coded to categorize the data into commonly identified themes. **Figures 24-26** display the themes that appeared the most by each question type. Even though a large proportion of the responses indicated “none” or “nothing” - this theme is not represented in the figures below. It was important to highlight findings found to be most informative; while taken into consideration that many of the women did not identity or provide a specific resource when prompted with the questions.

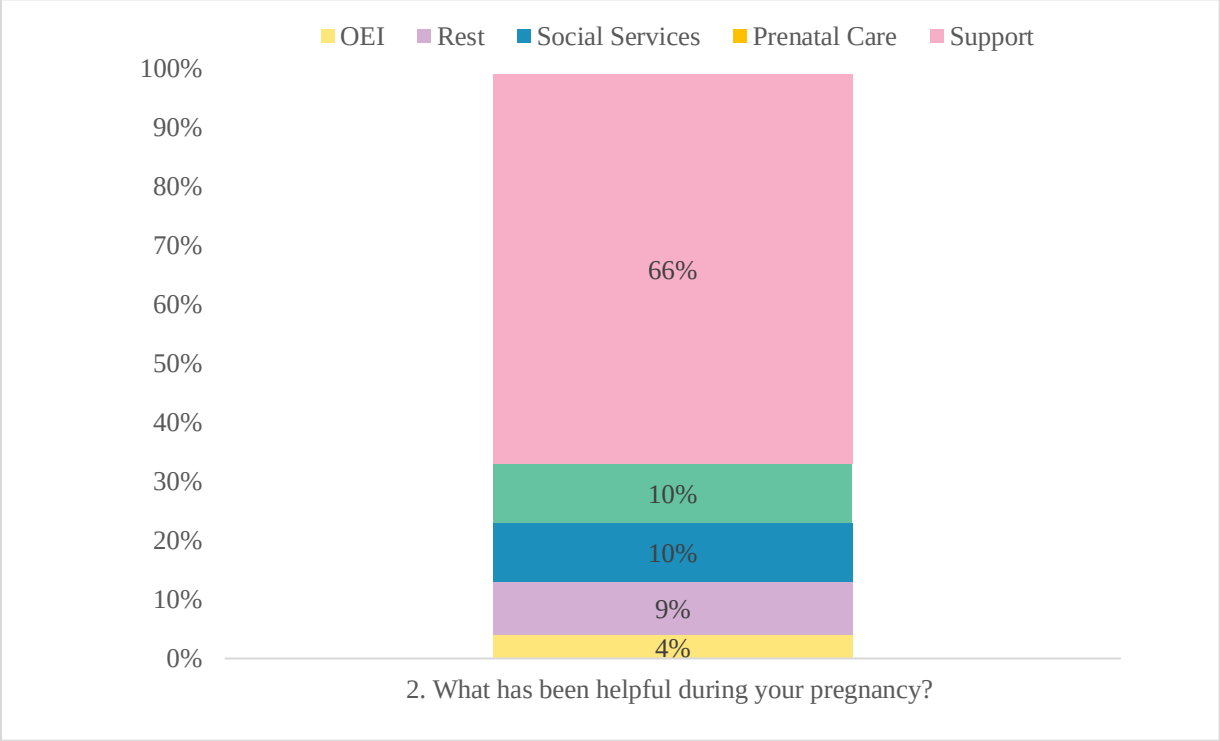
Women who partook in the SDOH assessment were all eligible and reported several factors impacting their pregnancy that were social and personal. Other themes that appeared across question #1, were little support, pregnancy spacing, preparing for the baby, and single mom (**Figure 24**)

Figure 24. Reoccurring Themes of Question 1, SDOH Assessment



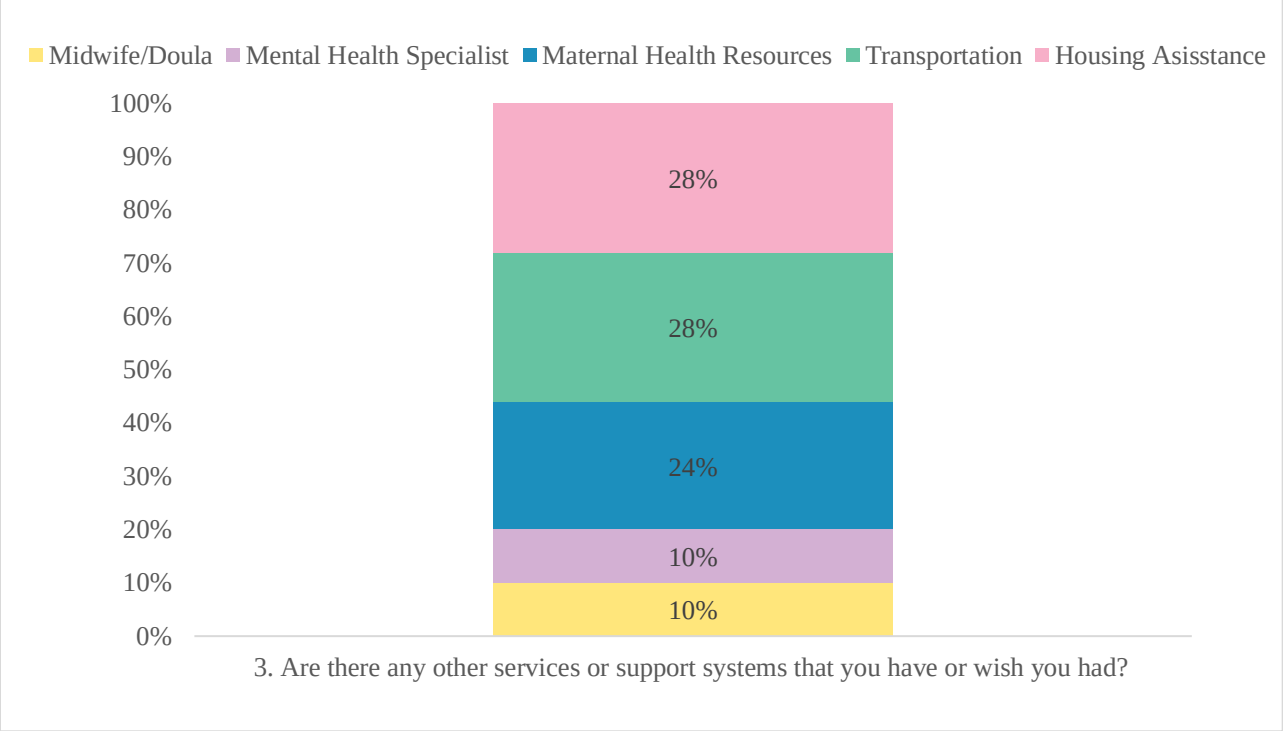
Support was the most identified theme for question #2 (**Figure 25**). With family support as the type found to be the most helpful, followed by support from one's partner and/or friends and colleagues. Social services that were explicitly stated by the women as helpful included: CareSource transportation, Pregnancy Center East, St. Vincent DePaul, food stamps, WIC, home visitor/ case manager/ social worker, and Women Helping Women

Figure 25. Reoccurring Themes of Question 2, SDOH Assessment



When asked question #3, the narratives expressing the need for maternal health resources where centered on birth control, family planning, and the period during and after pregnancy (**Figure 26**).

Figure 26. Reoccurring Themes of Question 3, SDOH Assessment



While the narratives captured in the data are valuable in providing descriptive information pertaining to the women's pregnancy, the quality of the data, specifically reporting and missing data, presented its own challenges. Many of the fields for a particular question were either left blank, the narrative was not related to or corresponded with the question being asked, or the narrative due to limited detail could not easily coded. Additionally, working with qualitative data introduces a lot of nuances and interpretations of the data can vary to which it may not always reflect a broader theme during the process of thematic coding. This was most true for the grouping of experiences that fell under the theme 'unintended pregnancy.' For instance, some narratives stated that the pregnancy was unplanned, while others included "finding out I'm pregnant…" or "I didn't know I was pregnant." Finally, it is worth noting that the themes displayed in the figure are not an exhaustive lists of the experiences shared by the women nor can they be generalized to each unique experience for those who partook in the SDOH assessment and women deemed as ineligible.

Field Observations

Field observations were another way of capturing data from Neighborhood Navigators and are specific to their interactions and experiences while out in the field. Observations are documented and include text of what they felt were important and recurring while in the field. Data capturing these experiences can be used to inform outreach processes, policy, and practice design, and to share findings with partners.

The Neighborhood Navigators expressed an overarching concern regarding the ability of services and resources to have a meaningful impact. Some of the Neighborhood Navigators mention the problem of services not following through and the expectation of services being directly provided by OEI - a problem identified in FY19 and what informed modifications made to the hot cards (see table 2).

> *They appear to be under the impression that we [OEI] give them the resources they need (that we give them the actual product, such as diapers, baby supplies, food, etc.). They also are often disappointed that we say we can help with housing but offer resources that are dead ends.*
>
> - Field Observation, October 2019

> *The most frustrating thing was the fact that organizations we made referrals to would often drop the ball which would cause Mom to slip through the cracks. Overall Hamilton County is oversaturated with organizations doing the same type of work which makes OEI and its program a bit challenging to accomplish.*
>
> - Field Observation, October 2019

The COVID-19 pandemic drastically changed the way Neighborhood Navigators would move forward with canvassing and eventually adapt to the changes when re-entering the community. Some of the Neighbor Navigators mention the challenges they encountered because of the pandemic and the impact it had on their outreach efforts.

> *First couple of days in the community again and it has been a bit of a struggle. I have gone to most of the places we used to go in the community before COVID and most of the atmospheres are different. Grocery stores and (Kroger, Walmart etc.) are being diligent about cleaning, so leaving hot cards may not be the best idea*
>
> - Field Observation, July 2020

Canvassing sites we frequent like Kroger now have special barrier aisle with attendants. We cannot leave any hot cards with attendants….

- Field Observation, July 2020

Placing Hot Cards in the same places as pre-COVID are not working but I have seen a bit more promise in some of the smaller places. Canvassing is awkward because there are no real places to congregate like libraries or rec centers.

- Field Observation, July 2020

The Neighborhood Navigators also highlight the issue of housing stability, specifically, the process of acquiring it and the impact on the women they encountered.

Housing is still one of the biggest causes of stress for the moms I do intakes for. Many let me know that there are long waiting lists or that some places are no longer accepting applications for assistance.

- Field Observation, November 2019

Housing is still the biggest issue we have.

- Field Observation, October 2019

During the monthly HCPH OEI team meetings, there were opportunities to debrief; creating space for Neighborhood Navigator to voice their concerns, challenges, and experiences. The insights gained from holding these conversations continuously challenged the team to consider the implementation of processes and how to better serve the community. Additionally, the Neighborhood Navigators could always reference their documented observations in the field. This allowed the team to identify and address any recurring challenges, as well as assess the overall effectiveness of their efforts as programmatic changes took place.

7.0 University of Cincinnati Navigation Project

One of the goals established in the corrective plan was to identify new avenues to reach women and connect them to clinical and social services. This was achieved through a partnership with the UC Health system, and what proved to be a successful and important component of this year's outreach and identification efforts.

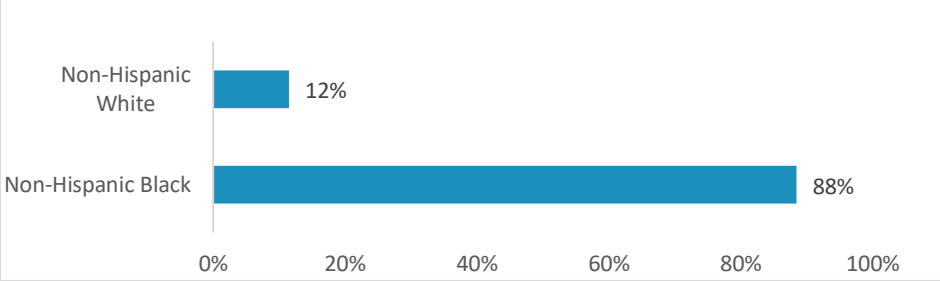
An evaluation plan, specifically for UC Health, was developed to monitor the process, fidelity, and effectiveness of the program's performance. The data presented below are measures of the performance of the UC Health program in improving the efforts of OEI- that is, the recruitment and identification of Black prenatal women.

Program Data

When referring to the evaluation plan, one of the questions that the HCPH OEI team sought to answer was: had the priority population been outreached? Leveraging data from REDCap, the OEI Epidemiologist analyzed data for records linked to UC Health outreach. Altogether, 229 women were outreached through UC Health and 34% of those women were recruited and screened.

It was also of interest to know if the priority population had been identified. In other words, was outreach through UC Health an effective avenue in ensuring the women screened for OEI services were likely to be eligible? All the women completed the screening process, and none were lost-to-contact. Of those women, 100% were deemed eligible for OEI services, and 88% identified as non-Hispanic Black (**Figure 27**).

Figure 27. Race/Ethnicity of Eligible Women, UC Health (N=78)



Additionally, the team wanted to know whether the priority population had been connected. Among the eligible women, 77% were served within the FY20. The remaining women (23%) had not received their third follow-up by the end of the grant year and so would roll-over into FY21 as women served (**Figure 28**). Of the women served, 85% identified as non-Hispanic Black (**Figure 29**).

Figure 28. Proportion of Eligible Women Served, UC Health (N=78)

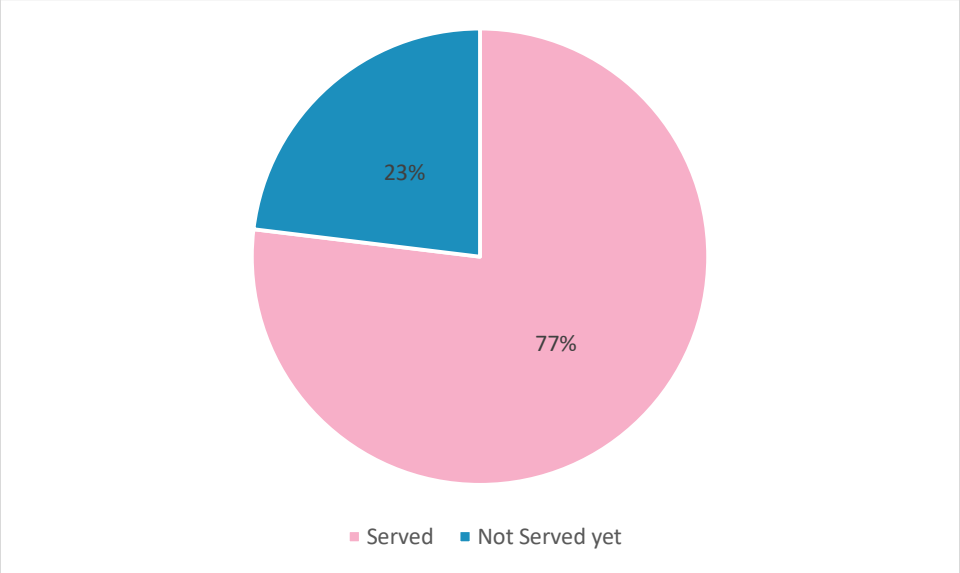
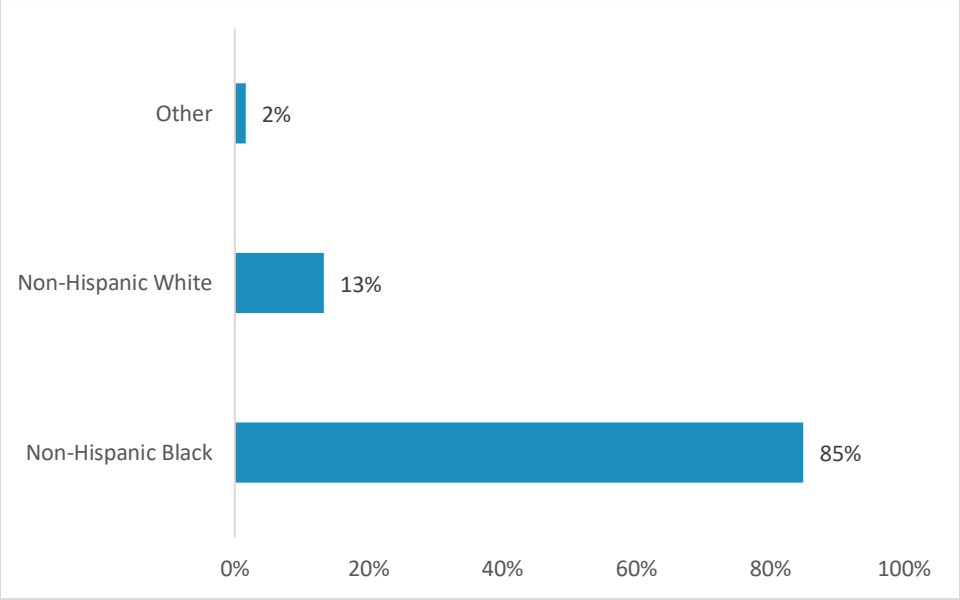


Figure 29. Race/Ethnicity of Women Served, UC Health (N=60)



Ultimately, the goal is to ensure that the priority population utilizes the social and clinical services for which they receive referrals. Notes documented by the Neighborhood Navigator were resourceful in capturing this data. In many instances the Neighborhood Navigator was unable to reconnect with the women through follow-up attempts, and therefore could not verify if or what services were utilized. Overall, more than half (53%) of the clinical and social services referred were utilized by the priority population (**Table 5)**.

Table 5. Delivery of OEI Services, UC Health

Indicators	
Number of needs identified	217
Number of referrals offered	217
Number of referrals utilized	116
Percent of needs met	100%
Percent of referrals utilized	53%

8.0 Limitations

There were additional challenges faced in the second year of OEI 2.0. There were challenges related to consistent staffing, limiting the extent of our community outreach. From December to March, there was only one Neighborhood Navigator in place. As soon as a second Neighborhood Navigator was hired in March, there were further limitations in outreach presented by the COVID-19 pandemic. Even though Neighborhood Navigators were able to identify and serve the priority population, The HCPH OEI team was limited by the effects of COVID-19 and the changes made to the identified outreach strategies. Such that, there were missed opportunities to identify potential women who are less inclined to partake in activities that are not in-person or otherwise do not have a presence on social media. Furthermore, the pandemic severely impacted the most marginalized populations in ways that further hindered their social and financial conditions, and whether they would be able to navigate through the current conditions shaped by social and economic strain. This certainly had implications on the HCPH OEI team's ability to identify and serve women who most needed it at the time.

Additionally, a consistent limitation in evaluating OEI services is the low response rate among the women served. Although Navigators made 3 follow-up attempts with women after the intake was completed to assess the usefulness and quality of the resources provided and identify any additional needs, women were often nonresponsive to these attempts. Without obtaining this feedback, it is difficult to determine how satisfied clients are with the Navigation services, the extent to which they are utilizing the referrals (duration, capacity), barriers to utilization, and whether the referrals offered are impactful for women served.

9.0 Next Steps: Plans for Future OEI Work

To address this challenge with obtaining follow-ups, the HCPH OEI team plans to implement a survey to clients with the goal of making it an easier and streamlined process for them to respond. The survey would make it clearer what information is being asked for them to provide in the follow-ups. It will give them the opportunity to identify from a list of the provided resources which ones they were able to utilize, and rank on a Likert scale how helpful they were. They will also be able to identify any barriers to utilizing the resources and answer questions regarding their overall satisfaction of Navigation services. HCPH OEI team also plan to raffle some additional baby supplies to offer incentives for women to complete the survey. With the information provided from this survey, the OEI team will be able to identify opportunities for further process improvements.

Finally, to better understand the overall effectiveness of OEI's efforts in improving the outcomes of the priority population, in the upcoming grant year the HCPH OEI team plans to compare the data of the women served to vital statistics data. Identifiable data from the women served will be linked to birth and death records to characterize outcome of a live birth or death. This will allow the HCPH OEI team to determine the birth outcomes of fetal/infant mortality, preterm birth, and low birthweight for women served through OEI. The combined efforts of this data comparison and capturing better data on resource utilization will help us to identify and fill gaps for improvement, continue to build on the success of the OEI program, and make recommendations to improve the social determinants of health.

10.0 Appendix

Community Resources

Back on Track Clothing Assistance	107	Society of St. Vincent de Paul	96	Greater Cincinnati Behavioral Health Services	43
Old St. Mary's Pregnancy Center	95	SON Ministries @ Groesbeck United Methodist Church	39	Hamilton County Department of Job & Family Services	76
The Salvation Army	90	St. Ann Catholic Church SVDP	39	Ohio Means Jobs of Cincinnati	55
Greater New Hope Missionary Baptist Church	51	St. Margaret Mary Church SVDP	39	Cincinnati Works	47
A Caring Place	82	Education Matters	46	Santa Maria Community Services	48
Cincinnati Children's Hospital Medical Center	78	OEI Resource Guide	32	Seven Hills Neighborhood Houses	48
Life Forward Pregnancy Care of Cincinnati	86	Cincinnati Public Schools	41	Help for Homeless CAP	36
Norwood Health Department	70	Elizabeth's New Life Center	74	Cincinnati Metropolitan Housing Authority (CMHA)	50
Pregnancy Center (East/West)	94	Cincinnati Children's Hospital Medical Center/Ohio Buckles Buckeyes @ Norwood Health Department	62	Villages at Roll Hill	49
Reach Out Pregnancy Center	72	AMEN Breastfeeding support group	8	Over-the-Rhine Community Housing (OTRCH)	46
WIC	91	BOOBS Support Group	5	Anna Louise Inn/Housing	49
Sweet Cheeks Diaper Bank	83	Cradle Cincinnati Connections	16	Elm Street Health Center	14

Valley Interfaith Community Resource Center	71	Manna Outreach Pantry	49	City Link	33
Queen City Kitchen	48	Greater Cincinnati Behavioral Health Services	43	Open Door Ministry	45
Community Action Agency	87	Greater Cincinnati Midwifery	5	Metro	11
Freestore Foodbank	60	Forest Park Women's Center	12	Mary Magdelen House	9
Cribs for Kids	87	CareSource	4	Baby on Track	6
WinMed Health Services,	11	Baby Basics of Cincinnati	21	Babies First Program	14
University Hospital Center for Women's Health @ UC Hoxworth Center	11	Talbert House	42	Bethany House Services	43
Rosemary's Babies	4	Changing Gear	26	UC Health	30
Blaq Birth Circle	4	Birthing with Bree	3	ME&She Doula Services	5
Mamasmidwife.com	5	Cincinnati Birth Center	5	Every Child Succeeds	4
Christ Hospital Birthing Center	14	Healthy Beginnings	14	Camelot Community Care	9
Hamilton County Mental Health & Recovery Services Board	9	Beech Acres Parenting Center	9	Central Clinic Outpatient Services	9
Central Clinic Mental Health Access Point	9	Central Clinic Child and Family Treatment Center	9	Cincinnati Union Bethel	9
Excel Development Corp.	9	The Crossroads Center	9	Recovery Center of Hamilton County	9
Lighthouse Youth Services	9	Mental Health America of Northern Kentucky and Southwest Ohio	9	Pressley Ridge	9
Mercy Health West OB Clinic	11	Mercy Health Fairfield OB Clinic	11	Millvale at Hopple Street Health Center	11
Northside Health Center	11	Price Hill Health Center	11	The Health Care Connection	11

Logic Model

Inputs	Activities	Outputs	Goals
Staff/Partners ▪ Hamilton County Public Health ▪ OEI Project Coordinator ▪ OEI Epidemiologist ▪ Neighborhood Navigators ▪ Cincinnati Health Department ▪ Cradle Cincinnati Connections ▪ Cradle Cincinnati ▪ Managed Health Care Plans ▪ Hospitals ▪ Social service agencies ▪ Community partners **Money** ▪ OEI 2.0 Grant Funds **Materials** ▪ Resource guide for hotspot ZIP codes ▪ Data collection materials (e.g. Qualtrics license, tablets, data plan, etc.) ▪ ODH Assessment Tool ▪ ODH data collection platform ▪ Incentives for identified pregnant women ▪ Educational materials	▪ Update hotspot ZIP codes ▪ Identify and assess 796 eligible pregnant women and their needed services within hotspot ZIP codes ▪ Connect identified pregnant women to needed services and other resources ▪ Follow- up with women at least three times within 21 days of referral ▪ Meet with partners and community agencies to learn about resources available to community members ▪ Keep comprehensive resource guide for neighborhood navigators to share with engaged pregnant women updated ▪ Document feedback from women about resource referrals to include in resource portfolio ▪ Meet with community agencies and partners to share feedback/experiences of women with resource referrals ▪ Host and attend events to build relationship with community and identify women ▪ Review update SDOH data indicators that contribute to poor birth outcomes and SDOH needs identified by Neighborhood Navigators ▪ Update SDOH Team action plan ▪ Implement/adopt SDOH policy or practice ▪ Participate in FIMR Case Review Team (CRT) and Community Action Team (CAT) meetings ▪ Facilitate data sharing with other infant vitality efforts in Hamilton County ▪ Submit monthly, quarterly, and annual reports to the Ohio Department of Health (ODH) ▪ Conduct ongoing program review, priority setting, outcome evaluation, and quality improvement ▪ Meet monthly with OEI team to review program and data updates ▪ Create opportunities to disseminate program and data updates with SDOH team.	▪ Narrative describing strategy for prioritizing service outreach ▪ Comprehensive resource portfolio for Hamilton County ▪ Monthly field observation submissions and review of Intake Status tracker note sections. ▪ Number of eligible women in Hamilton County identified ▪ Number of completed screening tools ▪ Number of pregnant women referred to comprehensive clinical care services and other needed services ▪ Demographic information of identified pregnant women ▪ Number of SDOH needs identified during assessment process ▪ Number of SDOH needs met with an appropriate connection or referral. ▪ Percent of pregnant women whose needs were addressed by an appropriate connection or referral ▪ Average number of contacts Neighborhood Navigators make per identified pregnant women ▪ Average number of referrals or connections per identified pregnant women ▪ Average number of SDOH needs met per identified pregnant women ▪ Number of meetings with partners and/or community agencies ▪ Documentation of events hosted or attended ▪ Documentation of finished electronic mediums ▪ SDOH Team meeting minutes ▪ Documentation of data reviewed by SDOH Team ▪ Updated SDOH Team action plan ▪ Number of SDOH policies/practices identified by SDOH Team as a need within Hamilton County ▪ Number of policies or practices identified by the SDOH Team that were implemented/adopted ▪ Number of women and families impacted by implemented SDOH related policy or practice(s) ▪ FIMR CRT and CAT meeting minutes ▪ Number of data sharing agreements with other Hamilton County agencies working on infant vitality efforts. ▪ Monthly, quarterly, and annual reports submitted ▪ Results of ongoing program review, evaluation and quality improvement shared with key partners	**Short-Term Goals** ▪ By 11/10/2019, the Epidemiologist will submit a narrative describing strategy for prioritizing service outreach. ▪ By 01/10/2020 - 9/30/2020, a resource portfolio reviewed and updated on a quarterly basis to assure accuracy of resources. ▪ By 01/10/2020 – 9/30/2020, Project Coordinator will work with OEI Staff to collect qualitative data to share with policy committee on a quarterly basis to drive policy. **Intermediate Goals** ▪ By 4/10/2020, the OEI team will review and make edits to the SDOH action plan and SDOH Team Charter. ▪ By 9/30/2020, the Neighborhood Navigators will host or attend 6 events in Hamilton County to help identify eligible pregnant women ▪ By 9/30/2020, Project Coordinator will utilize two electronic mediums to increase awareness of the Hamilton County OEI initiatives. **Long-Term Goals** ▪ By 9/30/20, the Neighborhood Navigators will identify and engage at least 788 unique pregnant women within Hamilton County and refer or connect them to comprehensive clinical care and other needed services. ▪ By 9/30/2020, the policy committee will implement FY19 adopted SDOH-related policy or practice and adopt new SDOH-related policy or practice. ▪ By 9/30/2020, the Project Coordinator will submit 12 monthly reports and attend 10 FIMR CRT and CAT meetings. ▪ By 9/30/2020, the Epidemiologist will complete four quarterly reports and one annual data report. ▪ By 9/30/2022, contribute to the reduction of the preterm birth and low birthweight birth rate in Hamilton County.