



Healthy Moms and Babies: Housing and Health Integration

RESEARCH FINDINGS & RECOMMENDATIONS FOR POLICY MAKERS

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Executive Summary

Safe, stable and quality housing is essential for families to thrive and achieve optimal health. A strong base of literature demonstrated housing instability and homelessness increases the likelihood of pre-term birth, infant mortality and acute health conditions. Despite the importance of housing, a lack of affordable housing nationwide has made families – particularly those of color – vulnerable to homelessness and other forms of housing instability. In Ohio the shortage of affordable and available housing is particularly severe, leading to increases in homelessness for infants and young mothers.

Launched in 2018, *Health Beginnings At Home: Housing Stabilization Program For Pregnant Women* is a pilot project focused on providing affordable housing to pregnant women and young mothers, with the aim of decreasing infant mortality. Through rigorous evaluation, HBAH intends to strengthen the evidence-base outcomes regarding housing stabilization and rental subsidies in order to reduce infant mortality and improve health outcomes for pregnant women and their newborns. We believe this pilot could serve as the basis for a replicable intervention model in other communities.

Existing literature demonstrates the adverse impact housing instability has on the health of mothers and their children. Housing instability includes frequent moves, overcrowding or doubling up, living in substandard housing and experiencing homelessness. Housing instability during pregnancy increases the likelihood of preterm birth,^{1,2} a leading cause of infant mortality and risk factor for acute and chronic health conditions.

Housing instability during pregnancy and during the first years of life, is linked to increased health care utilization postpartum, including length of hospital stay, an ER visit and hospital readmission.^{3,4} Beginning in the prenatal period and extending throughout childhood, any duration of homelessness – from the briefest experience to extended periods – is associated with adverse child physical, mental and developmental outcomes.^{5,6,7} Homelessness is associated with pregnancy complications, preterm birth, and low birth weight; these adverse outcomes are leading causes of maternal and infant mortality in the United States.^{8,9}

As a result of the legacy and continuation of discrimination in the housing sector, people of color – particularly non-Hispanic Black people – disproportionately represent the renter population and are more likely to experience housing instability and homelessness. Considerable racial/ethnic disparities also exist in maternal and infant mortality. The Centers for Disease Control and Prevention reports U.S. maternal and infant mortality is highest

among non-Hispanic Black women, followed by American Indian/Alaska Native women.¹⁰

In Ohio – a state where infant mortality is beyond the already alarmingly

high national rate compared to other high-income countries – a racial disparity persists. **Despite a decrease in Ohio's infant mortality from 7.2 per 1,000 live births in 2017 to 6.9 in 2018 (compared to the national rate of 5.8), Black infants died at a rate 2.5 to 3 times higher than white infants.** Among all races, prematurity-related conditions are the leading cause of infant death in Ohio, comprising nearly one-third of deaths in 2018¹¹.

Also in Ohio, the shortage of affordable and available housing is severe, placing extremely low-income residents – including families and pregnant women – at high risk for housing instability, homelessness, and subsequent poor health outcomes. Statewide, 67% of extremely low-income households are severely cost burdened. There are only 44 affordable units for every 100 extremely low-income households. Infants were the most common age accessing the homelessness assistance system in Ohio and the number of infants grew to 2,943 in 2017 – a 53.0% increase since 2012¹².

COVID-19 has exposed underlying racial disparities in health and housing. With new federal resources available for rental assistance, the opportunity to target some of the resources to pregnant women could have profound impact on the health and well-being of infants. HBAH provides a framework for communities to use to achieve better birth outcomes.

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2,943 in 2017

A 53.0% INCREASE SINCE 2012

Executive Summary (continued)

The Health Beginnings At Home: Housing Stabilization Program for Pregnant Women (HBAH) study was launched mid-year 2018. To be eligible for HBAH, women had to be 18 or older, in their first or second trimester at time of enrollment, residing in Franklin County, have a household income of less than 30% of the area median income, be homeless and/or housing insecure and be enrolled in CareSource's Medicaid managed care plan. HBAH is implementing a robust evaluation plan that includes the health outcomes study, a housing outcomes evaluation and a process evaluation.

HBAH successfully enrolled 100 families who were randomly assigned women to the housing intervention or usual care group. HBAH provides a two-year housing intervention of housing stability services paired with rental assistance. Just under half (46%) of the total group reported zero income over the previous month before admission, and 73% reported monthly income of less than \$1,000. The preponderance of women enrolled in the study identified as Black (81%). The enrollment data demonstrated a history of housing insecurity and health problems among study participants.

Forty-nine out of 50 women in the housing intervention group were successfully housed in Franklin County with one participant in the intervention group moving out of the area. Among the 49 housing intervention households, 22 received HBAH time-limited rental assistance and 27 selected units with ongoing subsidies.

The preliminary findings show differences between the birth outcomes for the intervention group and the usual care group. There were four fetal deaths in the usual care group, and none in the housing intervention group. Further, 40 of 51 babies in the intervention group were born full-term and at a healthy birth weight in comparison to 24 of 44 babies in the usual care group. Additionally, infants from the intervention group were more likely to be admitted to the Neonatal Intensive Care Unit (NICU). Further, NICU admissions were significantly shorter for the intervention group than the control group - 8 days compared to 29 days. Although these differences are not statistically significant due to the sample size, they indicate rental assistance and housing stabilization services may help pregnant, housing in stable women achieve better birth outcomes.

The HBAH partners have identified the following policy recommendations based on the HBAH preliminary findings. These findings are consistent with research conducted in the past.

BIRTH OUTCOMES

Four fetal deaths
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Babies in the housing
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were less likely to
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and stayed just
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than 29 days**
for usual care
NICU admissions.

CORE POLICY RECOMMENDATION #1:

Test the HBAH model beyond Columbus and at a greater scale to better understand impacts on maternal, birth, and child health outcomes and potential cost benefits related to investment in the HBAH model. Apply a racial equity lens to better understand and reverse health disparities associated with race and ethnicity.

CORE POLICY RECOMMENDATION #2:

Promote housing stability for pregnant women with extremely low incomes who experience homelessness or housing insecurity through rental assistance and provide access to safe quality rental units with housing stabilization services. Use an equity lens to better understand and reverse health disparities associated with race and ethnicity.

- 1 Provide **rental and utility assistance** to bridge the gap between household income and housing costs for pregnant women with extremely low incomes.
- 2 Provide **housing stability services** that support the household and enable better relationships with landlords.
- 3 Increase availability of **safe, quality rental housing** for households with extremely low incomes and reduce admission barriers.

Housing is inextricably linked to health. Future research, policy and practice strategies that improve health and housing stability are needed to develop and amplify evidence-based strategies to effectively support pregnant women who are experiencing housing instability. We believe these efforts may improve maternal health and birth outcomes which may ultimately reduce infant mortality.

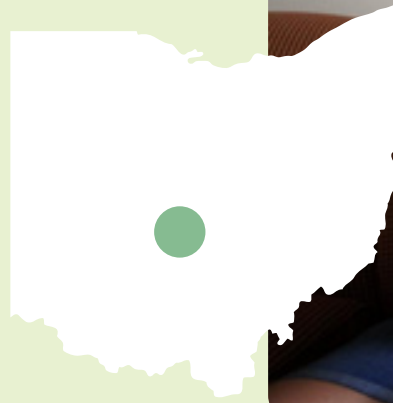
Introduction

This policy brief focuses on a research study conducted in Franklin County, Ohio that is taking aim at the current infant mortality crisis through a housing intervention: Healthy Beginnings at Home (HBAH). Past literature has linked housing instability with a wide range of adverse health outcomes for infants and their mothers including infant mortality, low birth weight, preterm births and high Neonatal Intensive Care Unit (NICU) costs.

Safe, stable and quality housing is essential for families to thrive and achieve optimal health. However, a lack of affordable housing nationwide has made families – particularly those of color – vulnerable to homelessness and other forms of housing instability. This brief summarizes existing literature to demonstrate the adverse impact housing instability has on the health of mothers and their children. We specifically focus on the health and housing landscape of Ohio.

A research project is underway in Columbus and Franklin County, Ohio, testing the impact of providing rental assistance with housing stabilization services to pregnant women who are living in highly unstable housing and are at high risk of infant mortality. Launched in 2018, *Health Beginnings At Home: Housing Stabilization Program For Pregnant Women* is a pilot project being rigorously evaluated and intends to strengthen the evidence-base impact regarding housing stabilization and rental subsidies in addressing infant mortality and improving health outcomes for women and their infants. This pilot may serve as the basis for a replicable intervention model to improve maternal, birth and child outcomes in other communities.

We conclude by suggesting evidence-based and emerging strategies, based on the literature review and the observations from the pilot, to improve access to affordable homes and support services, particularly for pregnant women who are housing unstable and have extremely low-incomes.



A review of recent literature

Housing instability adversely impacts health

Housing circumstances are widely acknowledged to be a key social determinant of health.¹³ When families are able to live in stable homes they can afford, child and maternal health outcomes improve.¹⁴ Conversely, circumstances of housing instability and homelessness have been linked to adverse health outcomes in both children and adults. Multiple moves are associated with child behavioral problems,¹⁵ worse school performance¹⁶ and cognitive delays.¹⁷ Cross-sectional data show association of multiple moves with children's poor health status, food insecurity, developmental risk and low weight-for-age.⁹

Poor quality housing – including the presence of pests, mold, and lead paint – can have lasting impacts on the health and development of children.¹⁸ Exposure to lead in the home irreversibly damages a child's brain and nervous system,¹⁹ and mold and pest infestation are strongly associated with poor child health, respiratory problems and asthma exacerbations.²⁰ Doubling up or overcrowding is linked to child behavioral problems,²¹ respiratory and

gastrointestinal problems²² and worse adult mortality.²³ Overcrowding is also associated with food insecurity at the household and child level.²⁴ Eviction, a consequence of housing insecurity, is linked to material hardship, maternal depression and worse maternal and child health.²⁵ Further evidence suggests these outcomes persist at least two years after eviction.¹³

Housing instability during pregnancy increases the likelihood of preterm birth,^{26,27} a leading cause of infant mortality and risk factor for acute and chronic health conditions. Preterm birth severely disrupts normal fetal development and is associated with long-term

intellectual and developmental disabilities, as well as suboptimal development and function of the lungs, brain, eyes, and other organs.^{28,29,30} Housing instability during pregnancy is also linked to increased health care utilization postpartum and during the first years of life, including length of hospital stay, an ER visit and hospital readmission.^{31,32}

HOUSING IS UNSTABLE WHEN A FAMILY EXPERIENCES ANY OF THESE SITUATIONS:

- multiple moves
- eviction or risk of eviction
- overcrowded or doubled up
- a severe housing problem
- homeless living in a shelter or place not meant for human habitation.

Homelessness, an extreme form of housing instability, similarly effects child and maternal health. Beginning in the prenatal period and extending throughout childhood, any duration of homelessness – from the briefest experience to extended periods – is associated with adverse child physical, mental, and developmental outcomes.^{33,34,35} Moreover, the effect is cumulative. When infants experience homelessness prenatally and postnatally, they are at even greater risk of adverse health outcomes compared to either experience alone.¹⁶ Homelessness is associated with pregnancy complications, preterm birth, and low birth weight; these adverse outcomes are leading causes of maternal and infant mortality in the United States.^{36,37}

Racial inequities are deeply rooted in housing and health

As is the case with other forms of adverse housing circumstances, racial disparities persist among families experiencing homelessness, and family homelessness is often concentrated in communities of color.³⁸ In 2019, non-Hispanic Black people accounted for 40% of all people experiencing homelessness and 52% of families with children experiencing homelessness, despite representing only 13% of the U.S. population.³⁹ Similar inequities exist in Ohio; Black Ohioans are only 13% of the state's residents, but make up nearly 50% of its homeless population.⁴⁰

Historical housing policies and practices, such as segregated investment in public housing, redlining and mortgage lending discrimination, have contributed significantly to disproportionate access to homeownership and housing opportunities in the U.S. Still today, people of color continue to encounter housing discrimination at significantly higher rates than their white counterparts.^{41,42}

As a result of the legacy and continuation of discrimination in the housing sector, people of color – particularly non-Hispanic Black people – are disproportionately represented in the renter population. They are more likely to be housing cost burdened – meaning they spent more than 30 percent of their income on housing—putting them in a precarious

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economic position. They are more likely to experience housing instability and homelessness. Furthermore, racial inequities are entrenched in housing segregation, which can perpetuate racial and socioeconomic achievement gaps. Nationwide, most white children live in high-opportunity neighborhoods – those with high work, income and education opportunities – while most Black and Hispanic children live in low-opportunity neighborhoods.⁴³

Considerable racial/ethnic disparities exist in maternal and infant mortality. The Centers for Disease Control and Prevention reports U.S. maternal and infant mortality is highest among non-Hispanic Black women, followed by American Indian/Alaska Native women.⁴⁴ Ohio is ranked eighth worst for infant mortality outcomes. Among all races, prematurity-related conditions are the leading cause of infant death in Ohio, comprising nearly one-third of deaths in 2018.⁴⁵ Despite a decrease in Ohio's infant mortality from 7.2 per 1,000 live births in 2017 to 6.9 in 2018 (compared to the national rate of 5.8), Black infants died at a rate 2.5 to 3 times higher than White infants. In Central Ohio, Black infants are 3.2 times more likely to die before their first birthday, in comparison to non-Hispanic White women.⁴⁶

Given the correlation between housing instability and adverse birth outcomes, including premature birth and complications, interventions that address housing instability and promote access to safe, stable homes may offer a promising strategy to decrease infant mortality, particularly among those most disproportionately affected. Furthermore, each year there are at least 21,000 children served by Ohio's homelessness assistance system, including 3,000 infants – a number that has risen 53% in five years.²⁵ Given the growing number of infants experiencing homelessness in Ohio, targeted housing interventions may further address infant mortality rate.

Affordable housing is limited, and places families with low incomes at risk for housing instability

Facing a shortage of seven million affordable and available rental homes nationally, maintaining housing stability is especially difficult for extremely low income households (those at or below the federal poverty level or 30% of area median income.)⁴⁷ Nationwide, these households account for nearly 73% of severely cost burdened renters paying more than half of their income on housing and 47% of cost burdened renters paying more than 30 percent of their income on housing.²⁶ According to a report by the Affordable Housing Alliance of Central Ohio, there were 57,000 extremely low-income renter households in Franklin County, but only 21,380 rental units affordable to these households in 2013.⁴⁸

This means many families live in homes they are unable to afford. This cost burden drives households deeper into poverty and instability as they are forced to make tradeoffs between other basic needs, such as food, healthcare and utilities, placing them at risk for additional material hardships which can have significant impact on child and maternal health.^{2,49} Access to affordable housing frees up more family income for other necessities, and research demonstrates affordable housing enables families to spend nearly five times more on healthcare, a third more on food and twice as much on retirement savings.⁵⁰

In Ohio, the shortage of affordable and available housing is severe, placing extremely low-income residents – including families and pregnant women – at high risk for housing instability, homelessness, and subsequent poor health outcomes. Statewide, 67% of extremely low-income households are severely cost burdened; In addition, there are only 44 affordable units for every 100 extremely low-income households.⁵¹

In Franklin County, the gap is even greater with only 29 affordable units for every 100 extremely low-income households. This is particularly concerning among extremely low-income females of child-bearing age and pregnant women due to the impact homelessness and housing instability can have on reproductive and maternal health, birth outcomes and child health.^{52,53} In Ohio, infants were the most common age accessing the homelessness assistance system and the number of infants grew to 2,943 in 2017 – a 53.0% increase since 2012.⁵⁴ Homelessness is associated with pregnancy complications, preterm birth and low birth weight. These adverse outcomes are leading causes of maternal and infant mortality in the United States.^{55,56}

Healthy Beginnings At Home - Housing as healthcare

Expanding equitable access to quality, affordable housing, as well as increasing integrated housing models and services that reduce homelessness and housing instability across the lifespan, are essential to promote the health, well-being, and financial security of children and adults. In Franklin County, Ohio, pre-term birth/prematurity has remained the leading cause of newborn illness and mortality since 2013.⁵⁷

For Black infants, the numbers are devastatingly high. In comparison to white infants, Black infants are significantly more likely to be born preterm, and three times more likely to die before their first birthday. Housing instability and homelessness may play critical roles in these persistent perinatal health inequities. Given the significant impact of safe, stable and affordable housing on maternal and infant health, providing rental assistance for pregnant women at high risk of infant mortality, was believed to be a promising approach to improve birth outcomes.

In response to this public health crisis and to test this premise, Healthy Beginnings at Home (HBAH) a two-year feasibility pilot program to improve maternal and infant health outcomes through access to quality, affordable housing and housing stabilization services was launched by a collaborative of organizations in Columbus and Franklin County, Ohio.

Key Partners in Healthy Beginnings at Home (HBAH)

With funding from the **Ohio Housing Finance Agency** and other partners, the HBAH pilot study is testing the impact of safe, stable and quality housing on maternal health and birth outcomes.

- **CelebrateOne**, a community-wide, collective impact initiative that aims to reduce the Franklin County infant mortality rate and the disparity gap between Black and White infant deaths by 2020, serves as HBAH lead agency and provides a program manager and a community health worker dedicated to HBAH participants.
- **Columbus Metropolitan Housing Authority (CMHA)**, a public housing agency owns over 2,200 units throughout Franklin County and provides housing choice vouchers to an additional 13,500 households living in private sector apartments, administers HBAH rental assistance.
- **Homeless Families Foundation (HFF)**, a nonprofit organization that serves over 400 homeless families through homelessness prevention and rapid rehousing programs in Franklin County, provides HBAH housing stabilization services through master-level social workers.
- **CareSource**, a nonprofit, managed care company that serves 2 million low-income people across 5 states with headquarters in Dayton, Ohio, provides care coordination through a nurse case manager and life coaching services through a team of social workers to HBAH families. CareSource is also providing claims data for the HBAH health outcomes evaluation. CareSource Foundation provided the initial grant to launch HBAH.
- **Nationwide Children's Hospital**, an academic pediatric medical center with a strong research institute is leading the health outcomes evaluation.
- **Children's HealthWatch**, a national nonpartisan network of pediatricians, public health researchers and children's health and policy experts, serves as HBAH advisor on research, policy and practices.
- Other project and evaluation support is being provided by **Health Policy Institute of Ohio** which is conducting the HBAH process evaluation, Dr. Stephen Metraux, **University of Delaware Center for Community Research and Service**, who is conducting the HBAH housing outcomes evaluation, **StepOne** which assisted with outreach and screening, and **Barbara Poppe**, a national expert on homelessness and housing.

The HBAH study was launched mid-year 2018 with outreach, screening, and enrollment conducted by CelebrateOne, StepOne, CareSource and HFF. To be eligible for HBAH, women had to be 18 or older, in their first or second trimester at time of enrollment, residing in Franklin County, have a household income of less than 30% of the area median income, be homeless and/or housing insecure, and be enrolled in CareSource’s Medicaid managed care plan. HBAH is implementing a robust evaluation plan that includes the health outcomes study (Nationwide Children’s Hospital), a housing outcomes evaluation (University of Delaware), and a process evaluation (Health Policy Institute of Ohio).

HBAH successfully enrolled 100 families to participate through Nationwide Children’s Hospital research team then randomly assigned women to the housing intervention or usual care group. Just under half (46 %) of the total group reported zero income versus the previous month; 73% reported monthly income of less than \$1,000. The preponderance of women enrolled in the study identified as Black (81%). The enrollment data demonstrated a history of housing insecurity and health problems among study participants.

- **Of the 81% of women that reported at least one prior pregnancy, all indicated prior adverse birth outcomes including miscarriage or stillbirth, low birth weight, and premature birth.**
- **Nearly two-thirds of the women reported being in fair/poor or good health, and 45% reported a previous diagnosis of depression.**
- **The women in this study described serious concerns with paying rent and utilities, eviction, and housing quality.**
 - The majority (51%) experienced a period of homelessness that lasted for a few months or longer; 48% expressed concerns about paying rent on time or concerns for eviction, and 23% expressed a desire to live in a safer neighborhood.
- A large proportion (43%) moved more than three times in the past year.
- Over one third of the women experienced at least one eviction while 62% and 54% had electric and gas arrears, respectively.
- **The women in this study had significant barriers to securing housing.**
 - Over half (54%) of the total group did not have a credit score, and 38% had a “bad” or “poor” credit score rating (below 580). This left only eight percent of the women with credit scores above 580, meaning they had scores considered “low” or “average.”
 - 44% reported some type of criminal record, though the nature of the crime was unclear.

“ I came into this program with my kids’ father. No one has been able to get my child’s father on the lease before, with his past. We stayed in a shelter and moved around for so long. It is a blessing that we were able to [get an apartment] together. We didn’t want to break up the family. [HFF HSS] kept helping me through it because we kept getting rejected because of his record. And then the landlord accepted us, and it happened! ”

~ HBAH participant

HBAH provides a two-year housing intervention of housing stability services (see sidebar) paired with rental assistance. HBAH provides a 21-month transitional rent subsidy to fill the gap between rental “market price” and the amount of rent paid by the program participant. During the first 15 months, the program pays the difference between the cost of fair market rent and utilities and 30% of the program participant’s income. During the final six months, the subsidy decreases gradually, with the participant paying the full rent at the time of transition from the program. An additional 3 months of aftercare services is available and include access to emergency financial assistance if needed. Some HBAH households selected units within housing developments that had a full rent subsidy on ongoing basis rather than time limited HBAH rental assistance. The housing stabilization services were the same regardless of which housing was selected. CMHA and HFF partnered closely to help women find apartments that met housing quality standards and landlords that were willing to rent to them despite limited/no income, prior eviction histories, poor credit and/or criminal records. HBAH provided financial incentives and the City of Columbus encouraged landlords to participate. HFF provided intensive housing stabilization services to help study participants sustain their housing and avoid eviction. When needed, HFF was able to help study participants locate alternative housing to avoid homelessness. CareSource and CelebrateOne provided services to women enrolled in both the housing intervention and usual care groups.

Forty-nine out of 50 women in the housing intervention group were successfully housed in Franklin County with one participant in the intervention group moving out of the area. Among the 49 housing intervention households, 22 received HBAH time-limited rental assistance and 27 selected units with ongoing subsidies. The preliminary findings show trends toward better birth outcomes – with the infants from the intervention group 60% less likely to be admitted to Neonatal Intensive Care Unit (NICU) and 72% decrease in NICU length of stay. There were four fetal deaths in the usual care group, and none in the housing intervention group.

Further, 40 out of 51 babies in the intervention group were born full-term and at a healthy birth weight in comparison to 24 out of 44 infants in the usual care group. Although these differences are not statistically significant, they indicate that rental assistance and housing stabilization services may help pregnant housing instable women achieve better birth outcomes.



“ I never got this much support and help [before]. Having your first baby, you don't know what to expect ... They were there to support me and asked me about my baby, asked me if I needed transportation and all that stuff. ”

~ HBAH participant

HBAH Housing Stability Services

The HBAH housing stabilization intervention design followed many components of Family Critical Time Intervention (CTI), an evidence-based, time-limited case management model designed to help homeless families re-establish themselves in stable housing with access to needed supports.⁵⁸ Family CTI, grounded in Housing First practices, works by providing emotional and practical support during the critical time of transition to stable housing and by strengthening the family's long-term ties to services, family, and friends. All housing stabilization services were undergirded by three clinical best practices: 1) person-centered planning, 2) motivational interviewing, and 3) trauma-informed care. The HBAH housing stabilization intervention, delivered by housing stabilization specialists and community health workers under the supervision of a licensed independent social worker, included this comprehensive and integrated set of services:

- Person-centered assessment that informs person-centered planning, including connections to community-based services (mental health, substance use, prenatal care, services to address social determinants of health, etc.)
- An assessment of housing-related barriers and development of housing plan, including support to access funds provided by the pilot to resolve housing needs and barriers (e.g. security deposits, rent/utility arrearages, application fees, etc.)
- Housing selection and move-in support (e.g. furnishings, food, etc.)
- Regular home visits
- Tenant orientation with pathway to more intensive tenant rights, financial capability, or other tenancy-supporting trainings/supports
- Communication and coordination with CMHA and the landlord to ensure successful tenancy
- Exit/transition planning services, including support to secure income and employment for continued tenancy after the rental subsidy ends
- Crisis intervention services
- Linkage to credit repair services
- Coordination with CelebrateOne Community Health Workers, CareSource Care Managers, researchers, and other providers

Emerging Policy Recommendations

Although the study is ongoing and has yet to produce final outcome results, baseline characteristics highlight an extremely vulnerable population with significant barriers to obtaining stable, affordable housing. The preliminary HBAH research findings, aligned with other research that has documented the negative health consequences of homelessness and housing instability on pregnant women and young children, suggest that provision of stable, affordable housing may reduce adverse birth outcomes.

Homelessness, an extreme form of housing instability, similarly affects child and maternal health. Beginning in the prenatal period and extending throughout childhood, any duration of homelessness – from the briefest experience to extended periods – is associated with adverse child physical, mental, and developmental outcomes.^{59,60,61} Moreover, the effect is cumulative. When infants experience homelessness prenatally and postnatally, they are at even greater risk of adverse health outcomes compared to either experience alone.¹⁶ Homelessness is associated with pregnancy complications, preterm birth, and low birth weight; these adverse outcomes are leading causes of maternal and infant mortality in the United States.^{62,63}

The HBAH partners have identified the following policy recommendations based on the HBAH preliminary findings which align with other research.

➤ CORE POLICY RECOMMENDATION #1:

Test the HBAH model in other communities and at a greater scale to better understand impacts on maternal, birth, and child health outcomes and potential cost benefits related to investment in the HBAH model. Apply a racial equity lens to better understand and reverse health disparities associated with race and ethnicity.

- **HBAH FINDINGS:** The HBAH model has promising findings that suggest rental assistance and housing stabilization services may help pregnant housing instable women achieve better birth outcomes. The size of the HBAH feasibility study was not sufficient power to reach the standard for evidence. The observation that infants from the intervention group were 60% less likely to be admitted to Neonatal Intensive Care Unit (NICU) and 72% decrease in NICU length of stay suggest that further study and analysis of the cost benefits of the HBAH model are warranted.
- **POLICY PRESCRIPTION:** The HBAH model could be scaled and rigorously evaluated in Columbus and other communities that experience high rates of infant mortality. This could be accomplished in several ways:
 - CareSource recently applied for the Housing Affordability Breakthrough Challenge to replicate HBAH on a larger scale, serving more pregnant women and their families and refining the evaluation model to prove the business case.
 - Other states and communities (Delaware, Minnesota, Oregon, Washington DC, Akron/ Summit County Ohio, Boston, and San Francisco) are also undertaking pilot programs that provide housing to high risk pregnant women. Documenting the methods and findings across multiple sites could create a more robust picture of the impact of a housing intervention on improving birth and other health outcomes.
 - This work could ultimately lead to a large nationally funded, multi-site research study.

> CORE POLICY RECOMMENDATION #2:

Promote housing stability for pregnant women with extremely low incomes who experience homelessness or housing insecurity through rental assistance and access to safe quality rental units with housing stabilization services. Use an equity lens to better understand and reverse health disparities associated with race and ethnicity.

1 Provide rental and utility assistance to bridge gap between household income and housing costs for pregnant women with extremely low incomes.

- **HBAH FINDINGS:** Pregnant women at high risk of infant mortality were found to have very limited, and in almost half the cases no income; further, 62% and 54% had electric and gas bill arrearages at admission to the study. Without financial assistance to address these arrearages and rental assistance, women in the study group would not have been able to move from homelessness and unstable housing to quality rental homes. Study households which received this assistance appear to have better birth outcomes than the usual care households which did not receive this assistance.
- **POLICY PRESCRIPTION:** Provide targeted rental and utility assistance to pregnant women at high risk of infant mortality. This assistance helps households remain stably housed during prenatal and postpartum periods and avoid homelessness. This could be accomplished in several ways:
 - Provide time-limited rental assistance from the Ohio Housing Trust Fund or other state or federal funding sources (e.g. HOME TBRA) to support programs that serve pregnant women at high risk of infant mortality
 - Encourage public housing authorities to set-aside housing choice or other special purpose vouchers and/or prioritize for public and/or assisted housing for pregnant women at high risk of infant mortality
 - Advocate for new federal funding to provide rental assistance to support programs that serve pregnant women at high risk of infant mortality

2 Provide housing stability services that support the household and enable better relationships with landlords.

- **HBAH FINDINGS:** Pregnant women at high risk of infant mortality required significant assistance to locate willing landlords with quality rental units. HBAH developed the Housing Stability Services model based on evidence-based practices that have been proven effective with homeless families with children. Without the advocacy of CMHA and HFF, HBAH participants would not have been able to locate landlords willing to provide quality rental units. HFF staff were trained and skilled in providing housing stability services. HFF staff routinely engaged with participants and landlords to sustain tenancy.
- **POLICY PRESCRIPTION:** Support implementation of housing stability services into healthcare and social services provided to extremely low-income pregnant women who are at risk of infant mortality. This could be accomplished in several ways:
 - Leverage Medicaid and expand other sustainable state funding streams to expand housing stability services
 - Engage health system stakeholders, such as Managed Care Organizations, to fund housing stability specialists for high risk pregnant women
 - Train maternal services providers and health care coordinators in how to provide the HBAH housing stability services model
 - Advocate for new federal funding to provide housing stability services for pregnant women at high risk of infant mortality

3 Increase availability of safe, quality rental housing for households with extremely low incomes and reduce admission barriers.

- **HBAH FINDINGS:** In Columbus, there is a severe shortage of rental units that offer units at or below fair market rents and meet basic housing quality standards. Pregnant women at high risk of infant mortality were found to have many barriers to housing and needed rental assistance, landlord incentives, and advocacy support in order to find and receive rental housing that met basic housing quality standards.
- **POLICY PRESCRIPTION:** Increase the supply of quality affordable housing units through public and private investment in new construction or renovation of existing units. Require property owners to remove eligibility requirements so that pregnant women at high risk of infant mortality can be served. This could be accomplished in several ways:
 - Provide OHFA and/or local incentives for developers who are competing for housing credits to establish partnerships with housing authorities and housing stability providers that serve pregnant women at high risk of infant mortality
 - Encourage healthcare systems and health insurance companies to invest in affordable rental housing and include set-asides for programs that serve pregnant women at high risk of infant mortality
 - Advocate for new federal investment in affordable rental housing

➤ ADDITIONAL POLICY RECOMMENDATIONS:

- 1 Expand access to eviction prevention services to pregnant women and households with infants
- 2 Provide reduced fare or free transportation for vulnerable populations, such as pregnant women with low incomes, to access health and housing services
- 3 Increase Ohio's childcare subsidy eligibility requirement to at least 200% of the Federal Poverty Guideline and ensure that free or low-cost, high-quality childcare services are available for families with extremely low incomes
- 4 Reduce food insecurity for pregnant women with extremely low incomes by increasing uptake of WIC and SNAP
- 5 Improve availability of and access to mental and behavioral health maternal and child health services for low-income women
- 6 Expand child maternal home visiting
- 7 Promote opportunities to increase educational attainment and workforce development to help extremely low-income households attain and maintain financial stability
 - Increase public investment in job training programs and work supports for low-income families
 - Improve access to existing job training programs and supportive services like transportation and childcare to increase utilization for pregnant and parenting mothers among those that access government assistance
 - Make the Ohio Earned Income Tax Credit (EITC) refundable to better support working families

“ The fact that my son has his own room right now – that is something that is super sweet ... I get to put him in a situation of living where he can be comfortable, be a baby, be himself, learn and grow and be inquisitive and play. You can't have that if you aren't living in a stable home. ”

~ HBAH participant



“ Before Healthy Beginnings At Home, I was sleeping on the floor at my boyfriend's mom's house – pregnant. Nobody wants to do that. It's not easy to do that. Now, not only do I have a stable place to grow my family, but I have a place for myself. ”

~ HBAH participant

Closing

Housing is inextricably linked to health. Future research, policy and practice strategies that improve health and housing stability are needed to develop and amplify evidence-based strategies to effectively support pregnant women who are experiencing housing instability. We believe that these efforts may improve maternal health and birth outcomes which may ultimately reduce infant mortality.

“ Housing is the key. I kept trying and failing to save. But they gave you this opportunity to start fresh. That was a blessing. ”

~ HBAH participant

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