Interventions for Preterm Birth & Infant Mortality

Advisory Board
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LITERATURE REVIEW

Implicit Bias*
- Achieving health equity: a guide for healthcare organizations (2016)
- A roadmap and best practices for organizations to reduce racial and ethnic disparities in health care (2012)
- Importance of social determinants of health and cultural awareness in the delivery of reproductive health care (2018)
- Baltimore City experiences record low infant mortality rate in 2015 (2016)

Stress*
- Stress and stress reduction (2014)
- The effect of CenteringPregnancy group prenatal care on preterm birth in a low-income population (2012)
- Group prenatal care compared with traditional prenatal care: a systematic review and meta-analysis (2016)
- Group prenatal care (2017)
- Group versus conventional antenatal care for women (2015)

Unexpected Pregnancy**
- Interventions for preventing unintended pregnancies among adolescents (2016)
- Reproductive life planning to reduce unintended pregnancy (2016)
- Game change in Colorado: widespread use of long-acting reversible contraceptives and rapid decline in births among young, low-income women (2014)

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**Smoking**
- Smoking cessation during pregnancy: a clinician’s guide to helping pregnant women quit smoking (2011)
- Psychosocial interventions for supporting women to stop smoking in pregnancy (2013)
- Effect of smoke-free legislation on perinatal and child health: a systematic review and meta-analysis (2014)
- Effectiveness of a pregnancy smoking intervention: The Tennessee Intervention for Pregnant Smokers Program (2015)

***Safe Sleep***
- Safe infant sleep interventions: what is the evidence for successful behavior change? (2016)
- SIDS and other sleep-related infant deaths: updated 2016 recommendations for a safe infant sleeping environment (2016)

**Care to Prevent Preterm Birth**
- Strategies to prevent preterm birth (2014)
- A statewide progestogen promotion program in Ohio (2017)
- The promise and challenge of implementing a community health worker strategy to reduce infant mortality (2016)
- Improving equity in supporting pregnancy intention (2017)
- Reducing preterm birth by a statewide multifaceted program: an implementation study (2017)
EXECUTIVE SUMMARY

Extensive research was conducted to learn more about the risk factors of preterm birth and infant mortality, resulting in a 600+ page literature review. Based on what we heard from the community, input from our Advisory Board, and evidence from the literature, during the next 5 years Cradle Cincinnati will focus on the following in attempt to reduce preterm birth and infant mortality in Hamilton County: implicit bias, stress, unexpected pregnancy, smoking, and safe sleep.

In this document we will share the strategies that have been successful in other communities and research.
IMPLICIT BIAS

What the evidence says…

Factors associated with implicit bias include race, primary language spoken, gender, sexual orientation, education, and employment status and can lead to differences in communication and treatment. Strategies to reduce implicit bias include:

• **Stereotype replacement**: consciously adjusting a response when you recognize it is based on a stereotype.

• **Counter-stereotypic imaging**: imagining the individual as the opposite of the stereotype

• **Individuation**: seeing the person as an individual rather than a stereotype

• **Perspective taking**: “putting yourself in the other person’s shoes”

• **Partnership building**: interacting with patients as collaborating equals

In a review of strategies to reduce health disparities, the following themes were identified:

• Promising interventions target multiple points along a patient’s pathway to care, or “the six levels of influence”: patient, provider, microsystem (which include the nurse and community health works), organization, community, and policy.

• Culturally-tailored interventions are effective

• Interactive methods are more effective than approaches with patients as passive participants

• Make equity an integral component of quality improvement efforts and think about the needs of high-risk patients when designing interventions to improve care

To improve patient-centered care and decrease inequities in reproductive health care:

• Ask and document influences on every patient’s health and use of health care (e.g. access to safe housing and food, utility needs, safety, immigration status, job conditions)

• Maximize social services referrals

• Provide an interpreter when a patient’s language is not the same as the provider’s

• Acknowledge that race, institutionalized racism, and other forms of discrimination are social determinants of health

• Recognize that stereotyping patients based on presumed cultural beliefs can negatively affect interactions with patients, especially when there is no recognition of the impact that social and structural factors have on individual choices

Success stories…

Baltimore, through its B’more for Healthy Babies initiative reduced their infant mortality by 38%. They also saw a reduction, by nearly 50%, in African American infant deaths since its implementation in 2009.

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One article reviewed the effectiveness of interventions that aimed to reduce preterm birth by reducing maternal stress. The following are the findings for the different types of interventions:

- **Group prenatal care** (particularly CenteringPregnancy), when compared to the other interventions, had the most evidence for preventing preterm birth and low birthweight. In CenteringPregnancy, women with a similar gestational age are grouped together for prenatal care. Each woman, during her physical exam, will be involved in her own care by measuring her own blood pressure and weight. In addition to the physical exam, the women participate in facilitated discussions and activities designed to address important health topics.

- **Care coordination** (or case management) may prevent preterm birth and low birthweight, particularly for minority groups, though the results were mixed.

- **Increasing prenatal care education and support** in the clinical setting was not effective in reducing preterm birth or low birthweight. On the other hand, home visitations may improve preterm birth and birthweight in certain populations (e.g. tobacco users, unmarried teenagers, and low-support African American women). Telephone calls also appeared to be effective in reducing preterm birth and low birthweight for black women over 18 years old.

- **Expanding health insurance coverage** can decrease financial stress and increase access to care. But it is hard to determine which aspect of the expansion contributes to improvements in birthweight.

- **Stress-reduction strategies** include one-on-one stress reduction, yoga, cognitive behavioral counseling, etc. While there is not enough evidence to suggest stress-reducing strategies prevent preterm birth and low birthweight, they do reduce maternal stress during pregnancy and may be beneficial for specific groups, such as teenagers, low-support women, or racial minorities.

While another review of group versus traditional prenatal care found that participating in group prenatal care was not associated with lower preterm birth rates, there was some evidence to suggest that group prenatal care may lower the risk of preterm birth for African American women. Group prenatal care appears to increase patient satisfaction, knowledge, and use of postpartum family planning.

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**Success stories...**

South Carolina has been successful in reducing preterm birth. The Greensville Hospital System Obstetrics Center started offering CenteringPregnancy in March 2009 and saw a 47% reduction in preterm birth for low-risk women in group care.

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UNEXPECTED PREGNANCY

Prevention of unexpected pregnancy aims to increase the likelihood of every pregnancy being both desired and planned.

What the evidence says…

In a review of strategies to prevent unexpected pregnancies in adolescents, only multiple interventions (combining educational, skills-building and contraceptive-promoting interventions) appeared to lower the risk of unexpected pregnancy significantly⁹.

The American College of Obstetricians and Gynecologists promotes the following methods to reduce unexpected pregnancy¹⁰:

- Effective and comprehensive reproductive life planning for both men and women¹¹
- Access to and availability of effective contraception
  - Health care providers should also assess patient’s satisfaction with current contraceptive method¹²
- The “Every Woman, Every Time” initiative encourages clinicians to address reproductive health choices with a woman whenever she comes into contact with the health care system
- The One Key Question® initiative and Providing Quality Family Planning Services report promotes open and honest discussions between patients and providers.

Success stories…

Colorado and St. Louis, Missouri, have both been successful at increasing long-acting reversible contraceptives (LARCs) use by removing key barriers, including cost, education and access.

In 2008, in Colorado, less than 5% of female clients in their Title X-funded clinics used LARCs. By 2011, that percentage quadrupled to 19%.¹²

In St. Louis, 75% of the 9000+ CHOICE participants (14-45 years old) chose LARCs contraception. LARC-users reported great continuation than non-LARC users, 87% versus 57% at 12 months and 77% versus 41% at 24 months).¹³

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SMOKING

What the evidence says...

The following are effective smoking cessation interventions recommended by the American College of Obstetrics and Gynecologists:

- The 5A’s model is a motivational interviewing intervention proven to be effective when initiated by health care providers. The 5 steps are described below:
  - Ask and document the patient’s smoking status at the first and subsequent prenatal visits.
  - Advise the patient who smokes to quit by giving information on the risks of continued smoking on the woman and baby.
  - Assess if the patient is willing to attempt to quit smoking; if not, ask, advise and assess during subsequent prenatal visits.
  - Assist the patient who wants to quit smoking by providing pregnancy-specific, self-help smoking cessation material and offering to provide a direct referral to the quitline (1-800-QUIT-NOW)
  - Arrange follow-up visits to track the patient’s progress

- Counseling interventions
  - Referral to a quitline (e.g. 1-800-QUIT NOW)
  - Pharmacological interventions should only be used if all other interventions do not work as there is not enough evidence for their effectiveness and safety.
  - Motivational interventions for pregnant women who do not want to quit smoking, for reasons she may or may not be able to or willing to express.
  - Postpartum intervention to help delay women who quit smoking during pregnancy from relapsing, usually occurring within one year after delivery.

Intensity of interventions, based on duration and frequency, did not appear to increase the effectiveness of the interventions.

Smoke-free legislation appears to be effective for reducing preterm births. Many studies have shown smoking bans are effective at reducing maternal smoking and exposure to smoke during childhood.

Success stories...

Tennessee has been successful at reducing the percentage of women who smoke during pregnancy. In the Tennessee Intervention for Pregnant Smokers program, an expanded version of the 5A’s model was used and delivered by health educators, and 28% of the pregnant women in their intervention group quit smoking. From 2007 to 2011, they saw a 23% decrease in pregnancy smoking in the targeted six counties.

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SAFE SLEEP

What the evidence says...

An article categorized the safe sleep strategies as follows:\(^\text{18}\):

- Health messaging uses advertisements, videos, and educational sessions to address questions or concerns caregivers have regarding safe sleep and promote the reality that every child is potentially at risk.
- Education of professionals, including healthcare professionals, care providers, and first responders, helps improve safe sleep practices because caregivers are more likely to adopt safe sleep practices if they see professionals practicing it too.
- Breaking down barriers of safe sleep, such as financial inability to buy a crib, smoking, alcohol and drug use, cultural norms and family traditions of bedsharing.
- Using culture and tradition to promote safe sleep practices. Charlie’s Kids uses the tradition of reading books to children and provides safe sleep messaging via an easy-to-read story.
- Legislation and regulation aims to increase adherence to guidelines. Safe sleep practices are a part of the training licensed caregivers receive in most states, but there is a lot of variability. At least 30% of caregivers are not licensed and/or are relatives, friends, and nannies who provide care unregulated or unlicensed. Also, in a few states it is a requirement that parents receive safe sleep information prior to hospital discharge.

A combination of approaches is ideal and possibly more effective than using one strategy.

Recommendations for a safe sleep environment for the infant’s first year after birth are\(^\text{19}\):

- Sleeping on their backs for every sleep
- Use a firm sleep surface, covered by a fitted sheet with no bedding or soft objects.
- Room-sharing without bed-sharing for at least the first 6 months, ideally for the first year of life
- Avoid soft bedding and overheating to avoid suffocation, entrapment, and strangulation
- Avoid smoke, alcohol, and illicit drugs
- Breastfeeding
- Routine immunizations appear to have a protective effect
- Using a pacifier, though the mechanism is still unclear, has a protective effect
- Pregnant women should get regular prenatal care
- Do not use commercial devices that are inconsistent with safe sleep recommendations (e.g. wedges, positioners) to separate infant from others in an adult bed
- Do not use cardiorespiratory monitors as there is no evidence of its effectiveness
- Supervised, awake tummy time is recommended to facilitate proper infant development
- Swaddling or wrapping the infant in a light blanket
- Health care professionals and child care providers should endorse and model safe sleep practices
- Media and manufacturers should follow safe sleep guidelines in their messaging and advertising
- Continue the “Safe to Sleep” campaign
- Continue research and surveillance on risk factors, causes, and mechanisms of SIDS

Success stories...

Cincinnati’s infant deaths due to unsafe sleep practices fell dramatically in 2014. There were, on average, 16 sleep-related infant deaths annually between 2007 and 2013. In 2014, that number went down to 7.


CARE TO PREVENT PRETERM BIRTH

What the evidence says…

The following are other strategies to prevent preterm birth:\(^{20}\):

- There is strong evidence that **progesterone** reduces the risk of preterm birth. To prevent preterm birth, natural progesterone is used. Progesterone should be offered to women with a singleton pregnancy and a history of preterm birth.

- **Cervical cerclage** is used to prevent dilation of the cervix. Cerclage can be inserted during one of these three scenarios mid pregnancy:
  - A history of preterm birth
  - Shortening of the cervix during ultrasound imaging
  - Short or dilated cervix during physical exam

- Thoughtful use of **fertility treatments** as they increase the chances of multiple births

- **Dedicated preterm birth prevention clinics** target women with a history of preterm birth or other poor outcomes that put them at increased risk for a repeat problem. Preterm birth clinics may also help reduce maternal stress.

- **Home visitation & community workers** help deal with issues related to housing, transportation, food, and employment while improving access to prenatal care. Evidence suggests that when engaged early in pregnancy and frequently throughout pregnancy these interventions can lower the risk for infant mortality.

Success stories…

The Ohio Perinatal Quality Collaborative, through a 2-year quality improvement project that started in January 2014, was able to promote the use of progestogen therapy and saw a 6.6% reduction in singleton births before 32 weeks of gestation.\(^{21}\)

Through the WIN Network in Detroit, there are promising findings that community health workers are a promising approach for addressing infant mortality.\(^{22}\) The average gestational age of 326 births from 2012 to 2015 was 38.3 weeks, with 89% being full-term.\(^{23}\)

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