THE WORCESTER HEALTHY BABY COLLABORATIVE'S Baby Box Initiative

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Worcester Healthy Baby Collaborative

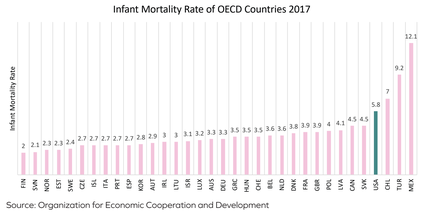
WORCESTER HEALTHY BABY COLLABORATIVE

The Worcester Healthy Baby Collaborative began as the Worcester Infant Mortality Reduction Task Force over twenty years ago with a focus on reducing infant mortality (IM) in the African immigrant community of Worcester. The Task Force was eventually renamed the Worcester Healthy Baby Collaborative and now consists of a number of community partners, local healthcare providers, and volunteers concerned with the city's higher than state average IM rate. The WHBC is working to reduce the city's IM rate by providing educational materials to new parents and supplies which promote safe sleep, connecting new parents to community resources, and advocating for health improvements in the community.

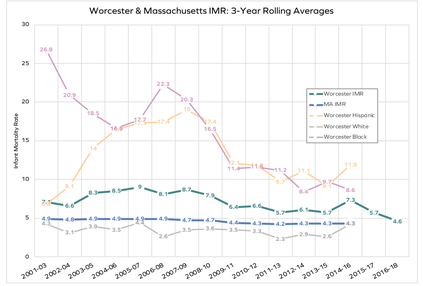
INFANT MORTALITY IN WORCESTER

The infant mortality rate (IMR) is defined as the number of infant deaths per every 1,000 live births. The US IMR has decreased from 10.9 in 1983 to 5.8 in 2017. Despite this, the **US's IMR is fourth-highest among the largest high-income countries** (OECD, 2018). At 4.6 in 2016, Worcester's IMR is lower than the US IMR. However, it is higher than the state IMR of 4.3 (Worcester Division of Public Health and Massachusetts Birth Reports, 2019). Additionally, **the IMR in Worcester varies significantly amongst races and ethnicities**.

Infant mortality is most commonly caused by the following: birth defects, pre-term birth and low birth weight, maternal pregnancy complications, Sudden Unexpected Infant Death Syndrome (SUIDS), and injuries. In the US in 2017, deaths due to SUIDS broke down as follows: 38% of cases were categorized as sudden infant death syndrome, 36% were categorized as an unknown cause, and 26% were categorized as accidental suffocation and strangulation in bed (Centers for Disease Control and Prevention, 2019). The promotion of safe sleep practices for infants has been important in reducing IMR nationwide.



Source: Organization for Economic Cooperation and Development



Source: Worcester Division of Public Health, Massachusetts Birth Reports

SAFE SLEEP

Since the initiation of the CDC's Back To Sleep campaign in 1994, the US SUIDS rate has decreased from 130.3 deaths per 100,000 live births in 1990 to 35.4 deaths per 100,000 live births in 2017 (Centers for Disease Control and Prevention, 2019). The Back To Sleep campaign has evolved to encompass the following guidelines by the CDC: place the baby on her back on a firm sleep surface with a tight-fitting sheet for every sleep, the baby should sleep alone in her own crib without blankets, crib bumpers, pillows, toys or other children, the crib should be located in the same room as the parents, breastfeeding is recommended, and smoking is strongly discouraged (Safe to Sleep, n.d.).

THE BABY BOX INITIATIVE

At a community forum held in Worcester in September 2016, a diverse group of participants voted on new infant mortality reduction strategies. A "Baby Box" project was strongly supported in order to **provide educational materials to new mothers, supplies, and a safe sleep space for the new baby** (City of Worcester, Massachusetts, 2017). The Baby Box is inspired by a 75-year program in Finland where new mothers can receive a box which serves as a safe sleep space for infants in addition to receiving educational materials and supplies. Finland has the lowest IMR of any country at 2.0 per 1,000 in 2017 (OECD, 2018). In 2018, the WHBC received 200 baby boxes from The Baby Box Company—a company who has modeled their program on the Finnish model.

The WHBC has since held a number of distribution days at local churches and community centers. Furthermore, partner agencies such as the Edward M. Kennedy Community Health Center, Pernet, Head Start, and the Family Health Center of Worcester have been key in also distributing the boxes and materials.

THE PROCESS

New mothers receiving a Baby Box follow this process:

1. Complete a pre-education survey
2. Watch a 20-30 minute video about Safe Sleep, Breast Feeding, Contraception, Postpartum Depression, and Early Literacy
3. Complete a post-education survey
4. Receive a baby box which contains a firm mattress, sheet, cotton swaddle, toiletries, and informational documents about community resources, early literacy, breastfeeding, and contraception
5. Six weeks after the new baby is delivered, a representative of the WHBC contacts the mother to conduct a brief follow-up survey on healthy behaviors and baby box use

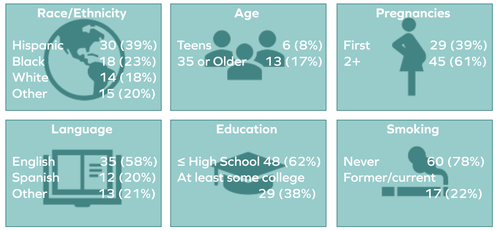
MEASURING OUTCOMES

Outcomes are measured via self-reporting on pre-education, post-education, and follow-up surveys. These variables include:

1. Demographics including Age, Race, Primary Language, Educational Attainment, Number of Pregnancies, Smoking
2. Likelihood to engage in healthy behaviors before and after watching the educational video. These behaviors include:
   - Asking a WIC counseler for help
   - Talking to a healthcare provider about substance use, postpartum depression, and contraception
   - Breastfeeding
   - Bedsharing
   - Roomsharing
   - Baby box use
3. Six weeks after delivery, the mother is contacted to ask her about the frequency that the following behaviors are engaged in:
   - Breastfeeding
   - Bedsharing
   - Roomsharing
   - Baby box use

PRELIMINARY RESULTS

Since distribution began in late 2018, 78 Baby Boxes have been distributed. A preliminary analysis of the data shows a significant increase in the likelihood of mothers asking a WIC counselor for help, talking to their healthcare provider about substance use, postpartum depression and birth control, and an increased likelihood of using the Baby Box following viewing the educational videos. To date, 20 Follow-Up surveys have been completed.



Variable	Pre-education (%)	Post-Education (%)	Z-score (p-value)
Likelihood WIC	37/57 (64.9%)	50/59 (84.7%)	**2.47 (.014)**
Likelihood substance Use	28/58 (48.3%)	39/58 (67.2%)	**2.07 (.038)**
Likelihood Postpartum Depression	32/54 (59.3%)	46/58 (79.3%)	**2.31 (.021)**
Likelihood Birth Control	46/55 (83.6%)	56/58 (96.5%)	**2.32 (.021)**
Likelihood Breastfeeding	51/59 (86.4%)	51/59 (86.4%)	0 (1.0)
Likelihood Bedsharing	10/57 (17.5%)	6/59 (10.2%)	1.15 (.250)
Likelihood Roomsharing	48/57 (84.2%)	53/59 (89.8%)	0.90 (.368)
Likelihood Baby Box	47/58 (81.0%)	56/59 (94.9%)	**2.31 (.021)**

FUTURE DIRECTIONS

Short-term goals include increasing the following: sites at which boxes are distributed, turnout on distribution days, and completion of follow-up surveys. Additionally, providing materials in more languages than just English and Spanish is important to the project. In the long-term, securing more grant funding is key as The Baby Box Company no longer offers its items free of charge. In addition, promotion of safe sleep via the distribution of play yards has been discussed. However, these play yards come at considerable cost as compared to baby boxes.

ACKNOWLEDGEMENTS

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