

Baby Boxes: Do They Safely Improve Safe Sleep?

A randomized controlled trial on the safety and effectiveness
of a Baby Box distribution and education program

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Introduction

Worcester’s infant mortality rate (IMR) exceeds the state’s and is disparate. The Black IMR is 4-5 times higher than the White IMR. The Hispanic IMR has risen steeply since 2004 and surpassed the Black IMR.

Sudden unexpected infant death (SUID) is one driver of infant mortality. Safe sleep behaviors can reduce the risk of SUID in our most vulnerable populations.

The Baby Box Solution?

For decades, all new mothers in Finland have received a bassinet-sized box that can be used as a safe sleeping space and is filled with educational materials and supplies. Finland has one of the world’s lowest IMRs.

Baby Boxes are now being distributed in at least 20 U.S. states. However, little is known about their safety and effectiveness at preventing SUID.

Objectives

1. Assess the materials safety of Baby Boxes manufactured by the Baby Box Co.
2. Evaluate the effectiveness of a multifaceted intervention (including provision of Baby Boxes, safe sleep education, and referrals to community resources) at reducing the risk of SUID and promoting infant health.

Participants

200 families (Worcester residents) of healthy neonates >35 weeks of gestational age discharged from the well nursery or NICU at UMass Memorial Medical Center.

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Randomization and Intervention

After randomization, 100 families will receive the standard of care (control) and 100 will receive the Baby Box program, including:

1. The Baby Box, which can serve as a physical safe sleeping space.
2. The box’s contents, including educational materials, printed information on community agencies and resources, and supplies such as diapers and books.
3. Educational videos created specifically for the Greater Worcester community, available in English, Spanish, and Twi.

Study Design & Analysis

Phase 1

Measure breaking strength of new Baby Boxes.

Figure 1. Overview of study design

Phases 2 and 3

Enroll 200 families.
Randomize: 100
receive a Baby Box.

6 week home visit:
Survey all families,
retest 50 boxes.

12 week home visit:
Survey all families,
retest 50 boxes.

Local agencies track
utilization.

Phase 1: How do new Baby Boxes respond to shear stress?

Collaborators at Worcester Polytechnic Institute (WPI) will measure the breaking strength of 20 new Baby Boxes.

Phase 2: Does providing safe sleep equipment and education effectively increase rates of safe sleep and other healthy young family behaviors?

Families in both study groups will be surveyed at 6 and 12 weeks after the baby is born. The surveys will assess the frequency of safe and unsafe sleep practices, and of other health behaviors that our educational materials address.

Phase 3: Does providing educational materials about local resources increase families’ use of these resources?

Both surveys will ask families whether they have used the local agencies whose information was included in the Baby Box materials. Also, agencies will track changes in their utilization. During calls, they will ask, “Are you a Baby Box family?”

Outcome Measures

1. Breaking strength of Baby Boxes, initially and 6 or 12 weeks after distribution. Families will receive a log in which to record how often they used the box during these intervals.
2. Frequency of sleep behaviors known to increase or decrease the risk of SUID.
3. Frequency of healthy young family behaviors in the following domains: breastfeeding and nutrition, early literacy, postpartum depression, substance use, and contraception.
4. Utilization of local resources and agencies.

Future Directions

The study is in progress. Based on the results, the Baby Box program will be modified and ultimately implemented for all babies born in Worcester.

The American Society for Testing and Materials (ASTM) is currently developing safety standards for Baby Boxes. The results of the present study’s breaking strength testing may inform these standards.

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