Breastfeeding Disparities and Social Marketing

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Becoming Baby-Friendly: Oklahoma Breastfeeding Summit
Two Talks in One

① Our research on Disparities
  - Methods, Results, Implications

② Social Marketing
  - Introduction, Identifying goals
  - A social marketing campaign aimed at reducing disparities
Disparities in Breastfeeding: Impact on Maternal and Child Health Outcomes

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No role in study design
Suboptimal breastfeeding in the United States: Maternal and pediatric health outcomes and costs

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Abstract
The aim of this study was to quantify the excess cases of pediatric and maternal disease, death, and costs attributable to suboptimal breastfeeding rates in the United States. Using the current literature on the associations between breastfeeding and health outcomes for nine pediatric and five maternal diseases, we created Monte Carlo simulations modeling a hypothetical cohort.
Original Study

- Modeled 10,000 replications of cohorts of 100,000 women from age 15-70 and all of the children they birthed from birth to age 19.

- Compared cases, deaths, and costs for 14 maternal and pediatric health conditions under suboptimal and optimal breastfeeding states.

- Cost savings in billions for medical, non-medical, and premature death were $3.0, $1.2, and $14.2.

Bartick et al, Mat&Child Nut 13(1); Jan 2017. epub Sept 2016
Disparities in Breastfeeding: Impact on Maternal and Child Health Outcomes and Costs

Melissa C. Bartick, MD, MSc¹, Briana J. Jegier, PhD², Brittany D. Green, MS³, Eleanor Bimla Schwarz, MD, MS⁴, Arnold G. Reinhold, MBA⁵, and Alison M. Stuebe, MD, MSc⁶,⁷

Objective To estimate the disease burden and associated costs attributable to suboptimal breastfeeding rates among non-Hispanic blacks (NHBs), Hispanics, and non-Hispanic whites (NHWs).

Study design Using current literature on associations between breastfeeding and health outcomes for 8 pediatric and 5 maternal diseases, we used Monte Carlo simulations to evaluate 2 hypothetical cohorts of US women followed from age 15 to 70 years and their infants followed from birth to age 20 years. Accounting for differences
Methods

- We repeated the approach from our original analysis but adjusted with key model parameters to reflect race/ethnicity-specific estimates for:
  - 1) population size
  - 2) infant birth weight
  - 3) breastfeeding rates
  - 4) fertility patterns

Methods

• We assumed that there were no racial/ethnic differences in mortality once a woman or child developed a disease.
Important differences

• Black and Hispanic women have more children than whites
  – Magnifies risk of child diseases
  – Dampens risk of breast cancer

• Black & Hisp women have more VLBW infants
  – 2.9% black, 1.4% Hisp, 1.1% white in 2013
  – Magnifies risk of NEC
Breastfeeding Differences

• Hispanic rates @ initiation similar to whites but duration drops off

• Black rate much lower at all time points
Results
### Relative and Absolute Differences of Excess Disease Attributable to Suboptimal Breastfeeding per 100,000 Women, Compared with Non-Hispanic Whites (95% CI)

<table>
<thead>
<tr>
<th>Child Disease</th>
<th>Relative Differences</th>
<th>Absolute Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ratio of NHB Blacks to NHW</td>
<td>Ratio of Hispanics to NHW</td>
</tr>
<tr>
<td></td>
<td><strong>Relative Differences</strong></td>
<td><strong>Absolute Differences</strong></td>
</tr>
<tr>
<td>Acute otitis media</td>
<td>1.68 (1.66 to 1.71)</td>
<td>1.43 (1.41 to 1.45)</td>
</tr>
<tr>
<td>Gastrointestinal infection</td>
<td>1.32 (1.31 to 1.33)</td>
<td>1.38 (1.37 to 1.38)</td>
</tr>
<tr>
<td>LRTI requiring hospitalization</td>
<td>1.32 (1.25 to 1.39)</td>
<td>1.38 (1.31 to 1.45)</td>
</tr>
<tr>
<td>NEC</td>
<td>3.30 (2.92 to 3.69)</td>
<td>2.01 (1.84 to 2.19)</td>
</tr>
<tr>
<td>SIDS</td>
<td>1.95 (1.42 to 2.61)</td>
<td>1.40 (0.97 to 1.89)</td>
</tr>
<tr>
<td>Child deaths total</td>
<td>2.23 (1.63 to 2.84)</td>
<td>1.53 (1.17 to 1.90)</td>
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</tbody>
</table>
Relative and Absolute Differences of Excess Disease Attributable to Suboptimal Breastfeeding per 100,000 Women, Compared with Non-Hispanic Whites (95% Confidence Interval)

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<tr>
<td></td>
<td>Ratio of NHB Blacks to NHW</td>
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<tr>
<td><strong>MATERNAL DISEASE</strong></td>
<td></td>
<td></td>
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<tr>
<td>Breast cancer</td>
<td>1.29 (0.93 to 1.62)</td>
<td>1.17 (0.88 to 1.45)</td>
</tr>
<tr>
<td>Type 2 diabetes mellitus</td>
<td>1.36 (1.04 to 1.64)</td>
<td>1.09 (0.86 to 1.32)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.41 (1.31 to 1.51)</td>
<td>1.19 (1.12 to 1.27)</td>
</tr>
<tr>
<td>MI</td>
<td>1.27 (1.04 to 1.50)</td>
<td>1.08 (0.90 to 1.25)</td>
</tr>
<tr>
<td>Maternal death total</td>
<td>1.31 (0.86 to 1.77)</td>
<td>1.11 (0.76 to 1.47)</td>
</tr>
<tr>
<td><strong>MATERNAL AND CHILD DISEASE COMBINED</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal and child death total</td>
<td>1.50 (0.59 to 2.41)</td>
<td>1.20 (0.55 to 1.84)</td>
</tr>
</tbody>
</table>
BREASTFEEDING matters for ALL FAMILIES

Black and Hispanic children who experience sub-optimal breastfeeding are at greater risk for childhood disease and death than children who were breastfed for six months or more.

- 1.7 (B) | 1.4 (H) times more likely EAR INFECTION
- 3.3 (B) | 2.0 (H) times more likely NECROTIZING ENTEROCOLITIS
- 1.3 (B) | 1.4 (H) times more likely GI INFECTION
- 1.9 (B) | 1.4 (H) times more likely SIDS
- 2.2 (B) | 1.5 (H) times more likely CHILD DEATH

DISPARITIES IMPACT MOMS
Black mothers who breastfeed sub-optimally are 1.4 times more likely to develop Type 2 diabetes.

Learn more about the study: http://bit.ly/BartickJPeds
Black and Hispanic moms

• More likely Heads of Household
• More likely lower income jobs
• Less likely paid sick time
Why it matters:

Black moms more likely to be the sole breadwinner

BREADWINNER MOTHERS*

Black working mothers are more likely to be the sole breadwinners for their families**

34% Black families with mother as the sole breadwinner

18% All families with mother as the sole breadwinner

* Includes all families with only one woman employed.
** Based on families with children under 18.

2015
dol.gov/wb
More black working moms have kids<5
Why it matters:
Black moms more likely to be in low-paying jobs, no paid sick leave
Why this matters

Missed work = no pay

→ Poverty
Nearly 1 in 4 working women are back at work within 2 weeks of having a baby

Only 1 in 20 of bottom quartile of workers get paid leave

Source: *In These Times*: The Real War on Families, 8/18/2015, From Dept of Labor statistics, 2012
Vicious cycle of racial inequity

- Formula feeding
- Illness
- Poverty
- Absenteeism
Get Your Message Across: Effective Social Marketing For Breastfeeding

Melissa Bartick, MD, MSc, FABM
Overview

• The basic principles of social marketing
• Examples and the lessons they illustrate
• Take home points
Social marketing:
Ad campaigns for good
Most clever? Most effective?

#1

#2

#3

#4

#5
Target audience

Adolescent boys and men

Parents, grandparents

Girls and young women
Social Marketing: the basics

• Identify your goal:
  – changing behavior versus providing information

• Identify your target audience
• Leverage emotion
• Make it memorable or clever
• Test your message with your target audience
Goal: Change Behavior

Campaign to increase bf in the AA community

• Comfort with nursing in public
• Partners must support nursing in public
• Raise awareness of maternal health issues
Identify our target audience

- Audience: US born AA families (most AA people in Boston are immigrants)
- Message *must* come from AA community
- Our team was predominantly AA, spread out across the US
- ROSE as co-sponsor/lead
AA women nursing in public

• Bf in church impt
• Photo shoots in 5 locations

• Caption contest
• Survey monkeys for market testing
Information may not change behavior

• This was the least effective of our posters

• We had to eliminate the other health message posters (breast cancer, heart attack)
Lessons

- Do your homework: Research the literature
- Market testing was key!
- Emotions drive change over health information

↔Our most popular poster, but you wouldn’t know it from the comments

This was a long & tedious process!!!
Less effective: dry health information

• Knowledge alone will not drive behavior change.

• Clever ads alone will not drive behavior change.
Clever, emotional, informative
Clever, memorable, behavior change (men support)
Nestlé boycott - emotional, informative
Emotion drives behavior change.

https://www.youtube.com/watch?v=zHaCVNo9kN4

Sadness, remorse

Fear, anger
Take home points

• *Clever* alone won’t change behavior.
• *Information* alone won’t change behavior.
• *Emotions* are most likely to change behavior.

*What you like doesn’t matter.*

*What your target audience likes is all that matters.*
Thank you!

Boston skyline as seen from Cambridge side of Charles River

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