Why invest, and what it will take to improve breastfeeding practices?
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Lancet 2016 Breastfeeding Series: Sneak Peak into how essential breastfeeding is for building a better world for future generations in all countries, rich and poor alike.

- Present and past patterns and trends
- Potential lives saved by scaling up breastfeeding
- Short and long term health consequences
- Economic implications
- Exquisitely personalized medicine
- Determinants of breastfeeding and effective interventions
- Lucrative market of breastmilk substitutes
- Environmental role
First global map of breastfeeding prevalence

Re-analysis of DHS and MICS surveys for 127 out of 139 LMICs

Systematic review of the literature on breastfeeding prevalence from high-income countries: data on 37 out of 75 countries
Breastfeeding: one of the few positive health behaviors more prevalent in LMICs than HICs

Low- and middle-income countries
- Less than 40% of infants under 6 months are exclusively breastfed
- About 1/3 of children between 6 and 24 months are not breastfed

Most high-income countries
- Fewer than 20% of children are breastfed up to 12 months (data is limited)
- More educated, wealthier women breastfeed for longer
Breastfeeding practices over time

For each doubling in national GDP per capita, breastfeeding prevalence at 12 months decreases by 10 percentage points
Improving breastfeeding would annually save about 820,000 children under 5 years of age. 87% of them among infants less than 6 months of age. Reduce infection-related mortality (<3mo) by 88%.

The Lancet Breastfeeding Series
Improving breastfeeding practices would have a profound effect on morbidity as well as mortality

**Improving breastfeeding would prevent:**
More than 54% of all diarrhea episodes
And 32% of all respiratory infections (in LMICs)

**Protection against hospital admissions even greater:**
72% of all admissions for diarrhea
57% for respiratory infections
Breastfeeding protects health and contributes to development

Breastfeeding protects against:
- Acute otitis media (<2 yrs)
- Malocclusion
- Type 2 diabetes
- Obesity

But not against:
- Asthma
- Eczema
- Food allergies

No evidence for effect on:
- Blood pressure
- Serum lipids
- Growth (wt or length)

Longer breastfeeding associated with higher performance on intelligence tests
- Average of 3 IQ points, controlling for maternal IQ
- Improved academic performance (some studies)
- Increased adult earnings

### Published Studies: Effect of Breastfeeding on Health and Development

<table>
<thead>
<tr>
<th>Author</th>
<th>ES (95% CI)</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Johnson (A)</td>
<td>5.00 (0.40, 9.60)</td>
<td>3.06</td>
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<td>Der (A)</td>
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<td>Gibson-Davis (A)</td>
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<td>Zhou (A)</td>
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<td>Wigg (A)</td>
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<td>Morrow-Tlucak (A)</td>
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<tr>
<td>Quinn (M)</td>
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<tr>
<td>Quinn (F)</td>
<td>8.20 (6.50, 9.90)</td>
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<tr>
<td>Whitehouse (A)</td>
<td>4.04 (1.48, 6.60)</td>
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<td>Eikdman (A)</td>
<td>3.00 (0.48, 5.52)</td>
<td>5.77</td>
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<tr>
<td>Clark (A)</td>
<td>1.00 (-1.13, 3.13)</td>
<td>6.48</td>
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<td>Evenhouse (A)</td>
<td>1.68 (-0.16, 3.52)</td>
<td>7.02</td>
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<td>Jacobson (A)</td>
<td>4.00 (1.08, 6.92)</td>
<td>5.11</td>
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<td>Belfort, 2013 (A)</td>
<td>0.80 (0.39, 1.21)</td>
<td>8.17</td>
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<td>Smither, 2012 (A)</td>
<td>0.97 (0.50, 1.44)</td>
<td>8.12</td>
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<tr>
<td>Overall (I-squared = 88.6%, p = 0.000)</td>
<td>2.86 (1.88, 3.84)</td>
<td>100.00</td>
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</tbody>
</table>

NOTE: Weights are from random effects analysis.
The economic case for investing in breastfeeding

Economic gains:
US$302 billion/year
(0.47% of global GNI)
Due to increased productivity associated with higher intelligence

Estimated health benefits:
Reduced annual healthcare costs totaling nearly $400 million in the U.S., UK, Brazil and urban China
Breastfeeding benefits women’s health

| Each year a mother breastfeeds decreases the risk of developing invasive breast cancer by 6% |
| Breastfeeding also reduces the risk of ovarian cancer |
| New impact modelling: |
| – Current rates of breastfeeding prevent almost 20,000 deaths from breast cancer per year |
| – Another 20,000 deaths could be prevented by improving breastfeeding practices further |
| New review confirms role of breastfeeding in birth spacing |
Are these effects biologically plausible?
Could an intervention as simple and so early, have such a profound impact on health throughout life?
Breastfeeding – exquisitely personalized medicine at a critical moment

Individualized components of breastmilk

• Bacteria from the mother’s gut microbiome
• Immune cells primed in the mother’s intestine
• Carbohydrates that shape the baby’s microbiome
• Small RNA’s that control genes in the baby
• Microvesicles (exosomes) that control genes in the baby
• Stem cells that survive in the baby
“In all mammalian species the reproductive cycle comprises both pregnancy and breastfeeding: in the absence of the latter, none of these species, man included, could have survived.” – Paediatrician Bo Vahlquist
Despite this growing body of evidence, women worldwide still do not have the support they need to breastfeed.
Building an enabling environment for breastfeeding: A conceptual model

**Determinants**

- **Structural**
  - Sociocultural and market context

- **Settings**
  - Health systems and services
  - Family and community
  - Workplace and employment

- **Individual**
  - Mother and infant attributes
  - Mother-infant relationship

**Interventions**

- Social mobilisation and mass media
- Legislation, policy, financing, monitoring, and enforcement
- Counselling, support, and lactation management

**Process**

- Early initiation
- Exclusive breastfeeding
- Continued breastfeeding
Interventions to improve breastfeeding practices

Systematic review examined the effect of interventions by setting: 20,000+ papers screened and 300 studies examined

Meta-analyses:

- Breastfeeding practices are highly responsive to interventions delivered in health systems, communities and homes
- Health system and community interventions can increase exclusive breastfeeding by x2.5
- Maternity leave and work-place interventions also beneficial (studies are few and generally limited to HICs)
- Largest effects of interventions are achieved when interventions are delivered in combination
- Mix of interventions needed may vary by setting and breastfeeding trends
The breast milk substitute (BMS) industry is large and growing

- In 2014, global sales of all baby milk formula were about US$ 44.8 billion
- By 2019, the market value is projected to reach US$ 70.6 billion.

**Total Retail Sales of Milk Formula**
“Possibly, no other health behavior can affect such varied outcomes in the two individuals who are involved: the mother and the child.”

“Success in breastfeeding is not the sole responsibility of a woman – the promotion of breastfeeding is a collective societal responsibility”
“If breastfeeding did not already exist, someone who invented it today would deserve a dual Nobel Prize in medicine and economics.”

Keith Hanson,
Vice President for Human Development,
World Bank Group
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