HIV and infant Feeding

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The risk of HIV transmission and duration of breastfeeding (no ARVs provided)

The risk of transmission is about 0.7% per month and persists throughout the period of breastfeeding. Without maternal ART, the longer a woman breastfeeds the greater the risk of transmission.

Source: World Health Organization
Timing of Mother-to-Child HIV transmission – On the backbone of no ARVs

- Pregnancy: 5-10%
- Labour: 10-15%
- Postpartum: 5-20%

Adapted from Kevin de Cock
Why do some children become HIV-infected and why do the majority of children not become infected through breastmilk?

- Maternal health
  - Advanced HIV disease
  - Incident HIV infection
- Duration of breastfeeding (vs. early cessation)
- Type of breastfeeding (mixed)
- Breast health
  - Mastitis and subclinical mastitis
  - Cracked and/or bleeding nipples
- Infant factors
  - Prematurity
The dilemma: preventing HIV vs. child survival

The balance of risk of breast feeding vs formula feeding
Effect of breastfeeding on infant and child mortality due to infectious diseases in less developed countries: A pooled analysis – WHO, Lancet 2000

<table>
<thead>
<tr>
<th>Protection provided by breastmilk</th>
<th>&lt; 2 months</th>
<th>2-3 months</th>
<th>4-5 months</th>
<th>6-8 months</th>
<th>9-11 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odds ratio*</td>
<td>5.8</td>
<td>4.1</td>
<td>2.6</td>
<td>1.8</td>
<td>1.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>&lt; 6 months</th>
<th>6-11 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea</td>
<td>6.1</td>
<td>2.4</td>
</tr>
<tr>
<td>ARI</td>
<td>1.9</td>
<td>2.5</td>
</tr>
</tbody>
</table>

*Odds of dying of non-breastfed infant to odds of dying of breastfed infant

Global distribution of breastfeeding at 12 months

In 2015, approx. 820,000 children died because of sub-optimal / no breastfeeding

*Figure 1: Global distribution of breastfeeding at 12 months*

Data are from 153 countries between 1995 and 2013.
HIV/AIDS burden and mortality

• About 1.4 million girls and women were pregnant and living with HIV in 2017 — more than 90% of them live in sub-Saharan Africa

• 5.6 million children under five died in 2016, with nearly 75% of all the deaths attributable to six conditions: neonatal causes, pneumonia, diarrhea, malaria, measles, and HIV/AIDS
Evolution of WHO UNICEF HIV and infant feeding guidelines

2000 (AFASS)

• When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended.

• Otherwise, exclusive breastfeeding is recommended during the first months of life.

• To minimize HIV transmission risk, breastfeeding should be discontinued as soon as feasible, taking into account local circumstances, the individual woman's situation and the risks of replacement feeding (including infections other than HIV and malnutrition).

Evolution of WHO UNICEF HIV and infant feeding guidelines

2007

• Exclusive breastfeeding is recommended for HIV-infected mothers for the first 6 months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe for them and their infants before that time.

• At six months, if replacement feeding is still not acceptable, feasible, affordable, sustainable and safe, continuation of breastfeeding with additional complementary foods is recommended, while the mother and baby continue to be regularly assessed.
**Evolution of WHO UNICEF HIV and infant feeding guidelines**

**2010**

- *Mothers known to be HIV-infected (and whose infants are HIV-uninfected or of unknown HIV status)* should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter, and continue breastfeeding for the first 12 months of life*.

- Breastfeeding should then only stop once a nutritionally adequate and safe diet without breast milk can be provided.

- When HIV-infected mothers decide to stop breastfeeding (at any time) they should do so gradually within one month

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*12 months represents the duration for most HIV-infected mothers that capitalizes on the maximum benefit of breastfeeding in terms of survival (excluding any consideration of HIV transmission). In the presence of ARV intervention to reduce risk of transmission, this combination may give the best balance of protection vs. risk.*

What drove the WHO 2010 revisions and recommendations?

Strong evidence that…

• ARV interventions to infants or mothers significantly reduce HIV transmission through breastfeeding
  – No evidence of diminished protection over time

• No evidence of significant drug-related adverse events
  – No increased adverse events with prolonged ARV intervention
  – NVP adverse events occur within first few weeks and do not accumulate with longer exposure
  – Dose of NVP given to infants as prophylaxis is less than that routinely given as ART for infected infant
2009 Mma Bana Study - Botswana

Viral suppression >92% for all groups

Kesho Bora Study
Kenya, Burkina Faso, South Africa

Infant HIV-free survival rates to 12 months of age

Extended impact of intervention

<table>
<thead>
<tr>
<th>Age in months</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Triple</th>
<th>Short</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Events (cum/ at risk)</td>
<td>Rate (95% CI)</td>
<td>Events (cum/ at risk)</td>
<td>Rate (95% CI)</td>
<td>Reduction</td>
</tr>
<tr>
<td>Birth</td>
<td>11/400</td>
<td>2.7 (1.5, 4.9)</td>
<td>11/403</td>
<td>2.7 (1.5, 4.9)</td>
<td>0%</td>
</tr>
<tr>
<td>6 weeks</td>
<td>19/377</td>
<td>4.8 (3.1, 7.4)</td>
<td>24/376</td>
<td>6.0 (4.1, 8.6)</td>
<td>20%</td>
</tr>
<tr>
<td>6 months</td>
<td>33/347</td>
<td>8.3 (6.6, 11.5)</td>
<td>50/334</td>
<td>12.5 (8.7, 16.3)</td>
<td>34%</td>
</tr>
<tr>
<td>12 months</td>
<td>40/278</td>
<td>10.4 (7.7, 13.9)</td>
<td>52/252</td>
<td>16.3 (12.9, 20.5)</td>
<td>36%</td>
</tr>
</tbody>
</table>

The Kesho Bora Study Group.
With WHO recommendations shifting to treat all mothers regardless of immunological or disease status.......For how long should a mother living with HIV breastfeed?

Mothers living with HIV should breastfeed **for at least 12 months** and **can continue breastfeeding for up to 24 months or longer** (as for the general population) **while being fully supported for ART adherence.**
2016 Guideline updates

Support for mothers living with HIV

National and local health authorities should actively coordinate and implement services in health facilities and activities in workplaces, communities and homes to protect, promote and support breastfeeding among women living with HIV.
Increase in maternal ART Coverage, but MTCT rate is still too high

Source: Global AIDS Monitoring 2018 and UNAIDS 2018 estimates

Percentage of pregnant and breastfeeding women receiving ARVs compared to percentage receiving ART 2001-2017

PMTCT Coverage (%) and MTCT rate (%), 2010-2017

Source: Global AIDS Monitoring 2018 and UNAIDS 2018 estimates
Integration of HIV and infant feeding recommendations in the IYCF programmes

Key messages:

• All infants can now gain the protection and benefits of breastfeeding regardless of HIV status

• For mothers living with HIV, clinics should provide lifelong ART to significantly reduce the risk of mother to child transmission of HIV

• Mothers living with HIV should breastfeed for 12 months and can be continue to breastfeed for 24 months or longer while being fully supported for ART adherence and retention in care

• Incident infections contribute to transmission of HIV and programmes should consider retesting lactating mothers and providing primary prevention interventions
Acknowledgements:

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Thank You