Examining Option B-Plus: Is it the Panacea We Had Hoped For?
Grace John-Stewart

Adherence 2019 · June 17-19 · Miami
MTCT PROGRESS
RETENTION AND ADHERENCE
MCH AND HIV
INFLUENCES
INTERVENTION APPROACHES
Globally, 80% pregnant women received ART
Additional progress needed to hit 2020 target

New HIV infections among children (aged 0–14 years), global, 2000–2017 and 2020 target

180,000 new infant infections in 2018

1 These World Health Organization estimates include 399 000 adverse birth outcomes in 2012 and 368 000 adverse birth outcomes in 2016.
2 Previous estimates of mother-to-child transmission rates did not capture the retention on antiretroviral therapy of pregnant women and the ongoing high levels of incident infections among pregnant and breastfeeding women.

Source: UNAIDS 2018 estimates.
Persistent risk of postnatal MTCT
• Retention\(^1\)
  • <25-75% at 12 mos

• Adherence\(^2\)
  • 30 to \(~50\)% at 12 mos

• Suppression\(^3\)
  • 84% at 6 mos in Malawi

• EID\(^4\)
  • <50%

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A systematic review of interventions to improve postpartum retention of women in PMTCT and ART care

Pascal Geldsetzer, H Manisha N Yapa, Maria Vaikath, Osondu Ogbuoji, Matthew P Fox, Shaffiq M Essajee, Eyersalem K Negussie and Till Bärmighausen

10 studies, 3 mHealth, 4 integration, 3 other

Weak evidence base, inconsistent retention measures, text reminders may improve early retention
Stigma, disclosure, distance, food deprivation, HIV knowledge influenced ART adherence
Low detectable postpartum viral load is associated with HIV transmission in Malawi’s prevention of mother-to-child transmission programme

- 1274 postpartum women
- 4-26 weeks pp
- 94% knew HIV status
- 97% on ART
- 9% of suppressed had LLVL
- 88% suppressed

Transmission

- Suppressed 0.9%
- LLVL 7%
- Unsuppressed 14%
MTCT PROGRESS
RETENTION AND ADHERENCE
MCH AND HIV
INFLUENCES
INTERVENTION APPROACHES
ANC
Immunizations
Vitamins
Malaria prophylaxis
Birth planning
Nutrition
Breastfeeding
Delivery
Infant care
Maternal Care

Pregnancy

HIV care

FP

HIV testing
ART adherence
Pill refill
Viral load measures
TB prophylaxis
Infant ARVs
Infant HIV testing
Integrate fertility and pregnancy planning into HIV care and HIV care into PMTCT with seamless transitions.
Interventions to engage male partners and peers, address adolescents and maternal motivation/knowledge are needed.
Effectiveness of a Lay Counselor–Led Combination Intervention for Retention of Mothers and Infants in HIV Care: A Randomized Trial in Kenya

Ruby N. Fayose, MD, MPH,* Chunhui Wang, MD,† Duncan Chege, PhD,* William Reidy, PhD,* Masila Syengo, MA,† Samuel O. Owino, MBChB,§ Emily Koche, MBChB,§§ Martin Sirengi, MBChB,¶
Mark P. Hawken, MBChB,† and Elaine J. Abrams, MD*#
mHealth to improve PMTCT retention and adherence

HIV mhealth system
Adapt for PMTCT

MCH mhealth system
Adapt for PMTCT

New system designed for PMTCT or HIV in women
PMTCT cascade and mHealth intersections

- **Information, motivation**
- **Reminders, encouragement**
- **Navigation, linkage**
- **Reminders, results**

- **HIV counseling for lifelong ART**
- **ART adherence and retention**
- **Long-term care or repeat pregnancy**
- **Infant EID and referral**

- **Antenatal care**
- **Delivery**
- **Postnatal care**
<table>
<thead>
<tr>
<th></th>
<th>Design</th>
<th>Approach</th>
<th>Postpartum Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odeny 2014</td>
<td>RCT n-=188</td>
<td>14 SMS</td>
<td>8 wks RR 1.66, p=0.04</td>
</tr>
<tr>
<td>Kebaya 2014</td>
<td>RCT</td>
<td>Biweekly</td>
<td>10 wks</td>
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<tr>
<td><strong>Messaging improves early retention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schwartz 2015</td>
<td>Pre-post N=100</td>
<td>Text and calls</td>
<td>12 month RR 1.03, p=0.81</td>
</tr>
</tbody>
</table>
**Messaging improves EID uptake**

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Intervention</th>
<th>Control</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Events</td>
<td>Total</td>
<td>M-H, Random, 95% CI</td>
</tr>
<tr>
<td><strong>Finocchiaro-Kessler 2014</strong></td>
<td>523</td>
<td>523</td>
<td>1.32 [1.24, 1.41]</td>
</tr>
<tr>
<td><strong>Joseph-Davey 2013</strong></td>
<td>201</td>
<td>261</td>
<td>1.09 [0.98, 1.20]</td>
</tr>
<tr>
<td><strong>Odeny 2014</strong></td>
<td>172</td>
<td>187</td>
<td>1.08 [1.00, 1.16]</td>
</tr>
<tr>
<td><strong>Schwartz 2015</strong></td>
<td>45</td>
<td>50</td>
<td>1.41 [1.12, 1.77]</td>
</tr>
<tr>
<td><strong>Techrnu 2011</strong></td>
<td>108</td>
<td>160</td>
<td>1.09 [0.93, 1.27]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>1181</strong></td>
<td><strong>989</strong></td>
<td><strong>1.18 [1.05, 1.32]</strong></td>
</tr>
</tbody>
</table>

Total events 1049; 723

Heterogeneity: $\tau^2 = 0.01$; $\chi^2 = 23.86$, df = 4 ($P < 0.0001$); $I^2 = 83$

Test for overall effect: $Z = 2.82$ ($P = 0.005$)

**Review article**

A systematic review of interventions to improve prevention of mother-to-child HIV transmission service delivery and promote retention

Julie Ambia¹ and Justin Mandala²

¹Corresponding author: Justin Mandala, FHI 360, 1325 Connecticut Ave, Washington, DC 20009, USA. Tel: +1 202 884 8319. Fax: +1 202 884 8800. (jmandala@fhi360.org)
<table>
<thead>
<tr>
<th>Study</th>
<th>Message topics</th>
<th>Design, size</th>
<th>Frequency</th>
<th>Outcomes or Findings</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kassaye EGPAF, cluster RCT (AIDS Res and Treatment 2016)</td>
<td>Multiple approaches</td>
<td>Cluster RCT</td>
<td>SMS 3-6 per week</td>
<td>No effect on maternal ARV uptake, EID</td>
<td>2016</td>
</tr>
<tr>
<td>TEXT-IT</td>
<td></td>
<td>Randomized</td>
<td>14 SMS at q</td>
<td>Retention 1 yr</td>
<td>2017</td>
</tr>
<tr>
<td>HITS 2.0</td>
<td>Provider alerts, women messages</td>
<td>Randomized stepped wedge</td>
<td>14 SMS at q1-2 weekly</td>
<td>Retention 1 yr, EID 8 wks pp</td>
<td>2018</td>
</tr>
<tr>
<td>WelTel</td>
<td>WelTel ‘shida’ with escalation call</td>
<td>RCT, 600</td>
<td>weekly</td>
<td>Retention 24 m pp, ART adherence, CEA</td>
<td>2018</td>
</tr>
<tr>
<td>Mobile WAChX</td>
<td>2 way or 1 way SMA vs. control</td>
<td>RCT 875</td>
<td>weekly</td>
<td>Retention 24 m pp, ART, VL, CEA</td>
<td>2020</td>
</tr>
</tbody>
</table>

**RCTs in progress on PMTCT long-term retention, adherence and viral suppression**
Mobile WACH-X
Unger, Kinuthia, Ronen, Perrier

- Mobile WACH - MCH
- Mobile WACHX PMTCT
  - 3 arm RCT
  - Enrollment complete
  - Follow-up ongoing
  - Completion 2020
Mobile WACH system designed for MCH

Hybrid computer-human SMS system

- Automated, scheduled SMS (1-way)
- Human reads responses & replies (2-way)

Perrier et al. CHI 2015, Unger et al. BJOG 2018

Short message service communication improves exclusive breastfeeding and early postpartum contraception in a low- to middle-income country setting: a randomised trial

JA Unger, a,b K Ronen, a T Perrier, c B DeRenzi, d J Slyker, b AL Drake, a D Mogaka, a J Kinuthia, a,f G John-Stewart a,g,hi
You Will Know That Despite Being HIV Positive You Are Not Alone: Qualitative Study to Inform Content of a Text Messaging Intervention to Improve Prevention of Mother-to-Child HIV Transmission

Jade Fairbanks, MPH, Kristin Beima-Sofie, MPH, PhD, [...], and Keshet Ronen, MPH, PhD
SMS messaging acceptable

Desire for

• Visit reminders
• Education
• Encouragement, support
• Praise
• Discretion
Evaluation of Option B+ p design andştir
Alison L. Drake Barbra A. Richard

Critical point:
- Delivery
- Breastfeeding cessation
  Transition to CCC

Time period:
- Pregnancy
- Post-partum
- Post 1 year

Messaging Themes:
- Medication adherence
- General health, support, encouragement
- Visit reminders and missed visit
- Pregnancy support
  - Birth preparation

Tracks (ranked, choose one):
- Normal
- Adolescent
- Newly initiating ART

HIV messaging choice:
- Overt HIV-related messaging
- Covert HIV-related messaging
Mama Baby

Untranslated

not yet still on breast feeding on sufficient breast milk not worried on it!

Mama Baby

12 Aug 16 20:17

System

12 Aug 16 20:00
Mama Baby, this is Valarie from Bondo. Breast milk is the best gift to give your baby. When you have HIV, it is most important to breastfeed exclusively the first six months and then introduce other foods while still breastfeeding until 1 year. This will help keep your baby healthy and free from infections. Have you started the baby on any other foods? Are you worried about your milk supply?

Mama Baby

9 Aug 16 15:26
thaxn val for the concern! be blessed!

Nurse

9 Aug 16 15:21
that's good, have a good day

Mama Baby

9 Aug 16 15:11
yes they gave me.
Mama Baby, this is Valerie from Bondo. Breast milk is the best gift to give your baby. When you have HIV, it is most important to breastfeed exclusively the first six months and then introduce other foods while still breastfeeding until 1 year. This will help keep your baby healthy and free from infections. Have you started the baby on any other foods? Are you worried about your milk supply?

Mama Baby

not yet still on breast feeding on sufficient breast milk not worried on it!

Related   Unrelated

Topic:     None

Mama Baby

thanx val for the concern! be blessed!
An mHealth SMS intervention on Postpartum Contraceptive Use Among Women and Couples in Kenya: A Randomized Controlled Trial

• Women like 2-way SMS
• Push messages kindle conversations
• SMS useful for confidential topics
• Can provide ‘real-time’ advice
• Issues can inform clinic counseling
• Providers gain skills

“It’s like the drugs I’m taking are [too] strong… I skipped [two] days. Can I just continue taking them?”

“I still don’t know whether to tell my boyfriend about my status – help please”

“Can somebody come and collect for me my drugs?”
MTCT PROGRESS
RETENTION AND ADHERENCE
MOTHER INFLUENCES
INTERVENTION APPROACHES
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Families in the studies

Community Advisory Board Members

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