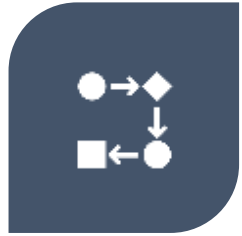




**Examining Option B-Plus:**  
***Is it the Panacea We Had Hoped For?***  
Grace John-Stewart

**Adherence 2019 • June 17-19 • Miami**





MTCT PROGRESS



RETENTION AND  
ADHERENCE



MCH AND HIV



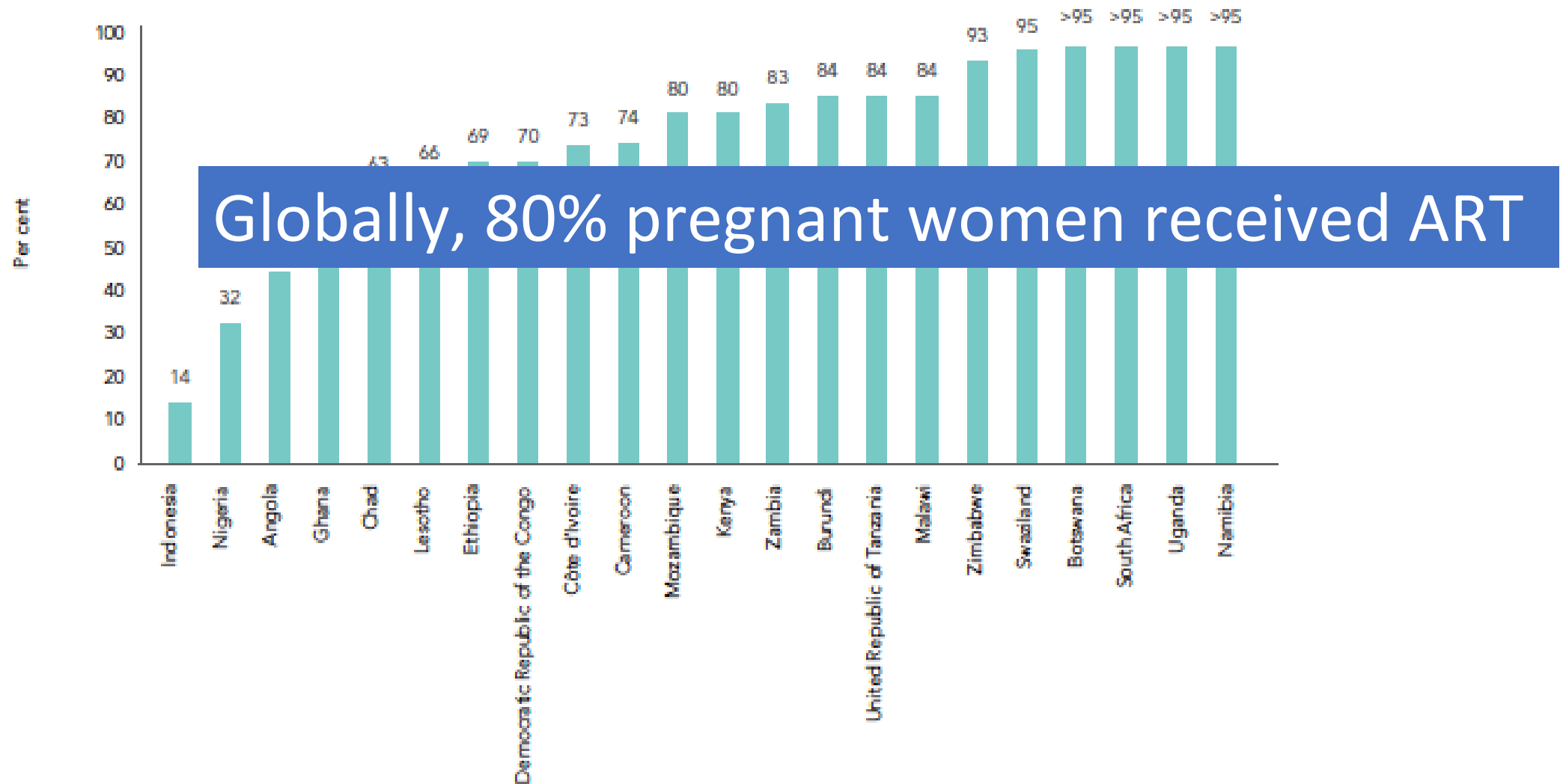
INFLUENCES



INTERVENTION  
APPROACHES

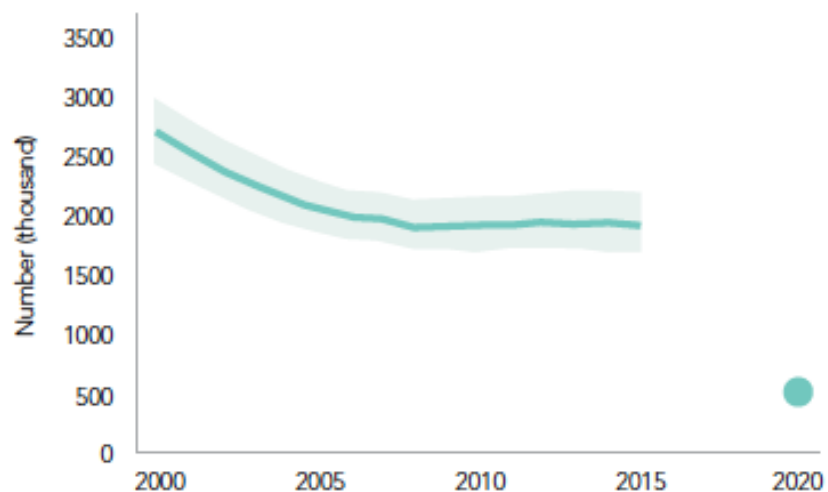


**Figure 4.** Pregnant women living with HIV receiving antiretroviral medicines (either prophylaxis or lifelong therapy) to prevent mother-to-child transmission, by country, 2016





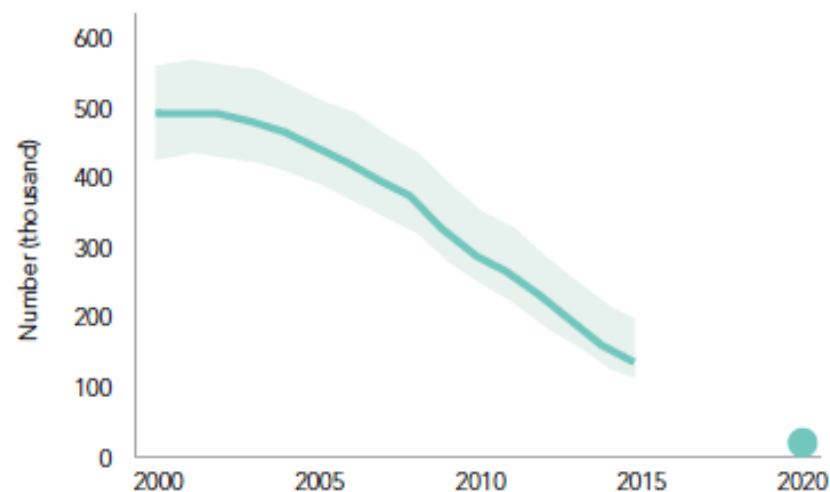
### New HIV infections among adults (aged 15 years and older), global, 2000–2015



— New HIV infections    ● Target

Source: UNAIDS 2016 estimates.

### New HIV infections among children (aged 0–14 years), global, 2000–2015



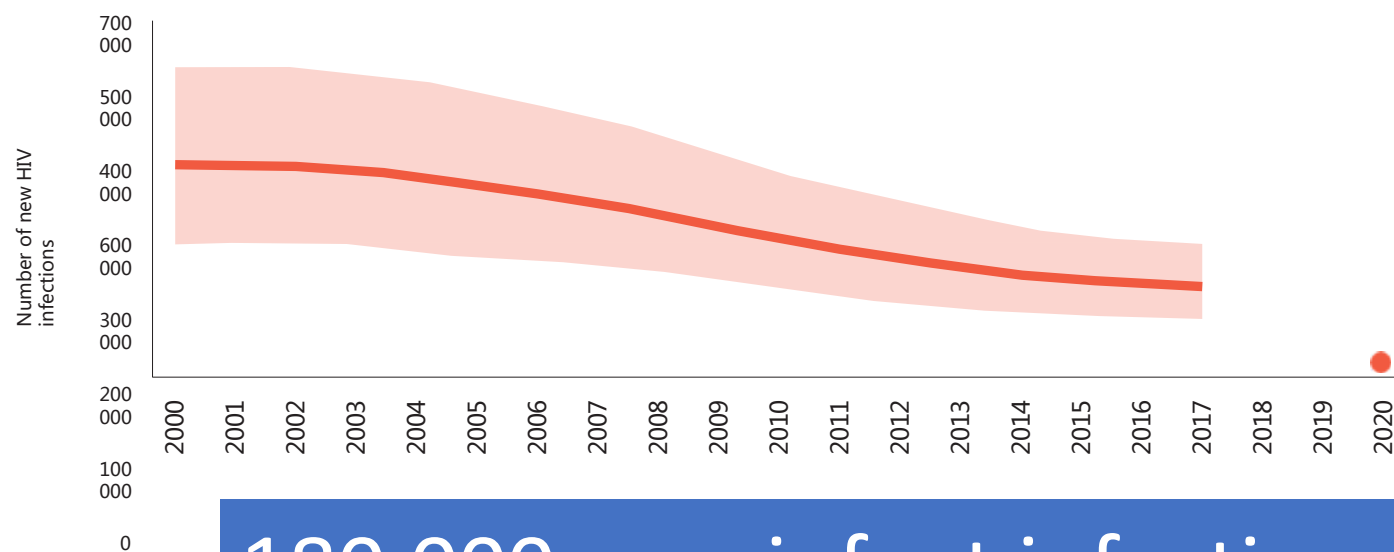
— New HIV infections    ● Target

Source: UNAIDS 2016 estimates.



# 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

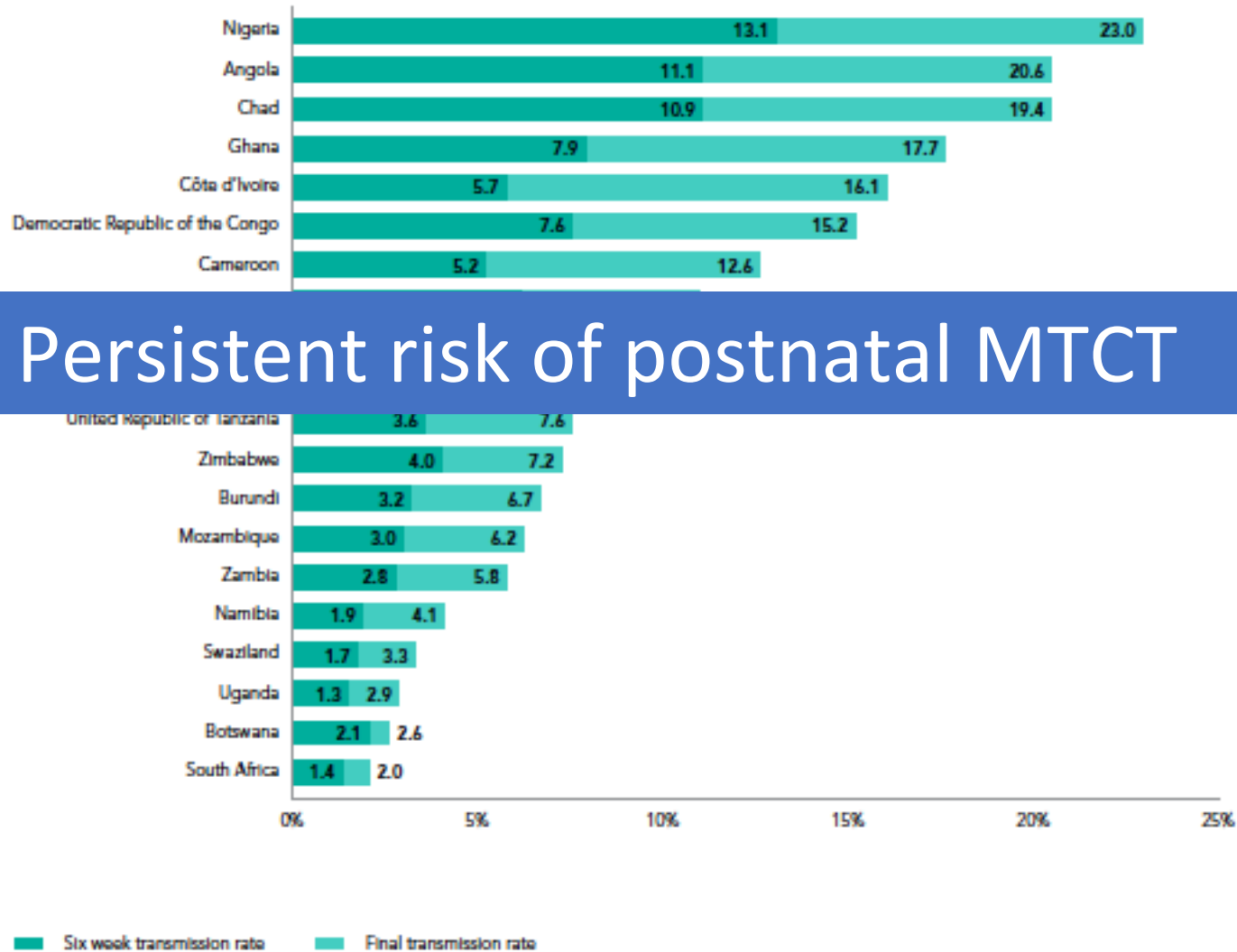
<sup>1</sup> These World Health Organization estimates include 399 000 adverse birth outcomes in 2012 and 368 000 adverse birth outcomes in 2016.

<sup>2</sup> 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.

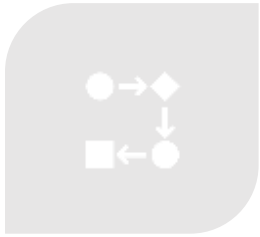


Figure 5

Six-week and final mother-to-child transmission rates, by country, 2015







MTCT PROGRESS



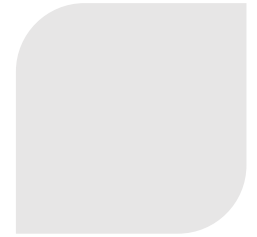
RETENTION AND  
ADHERENCE



MCH AND HIV



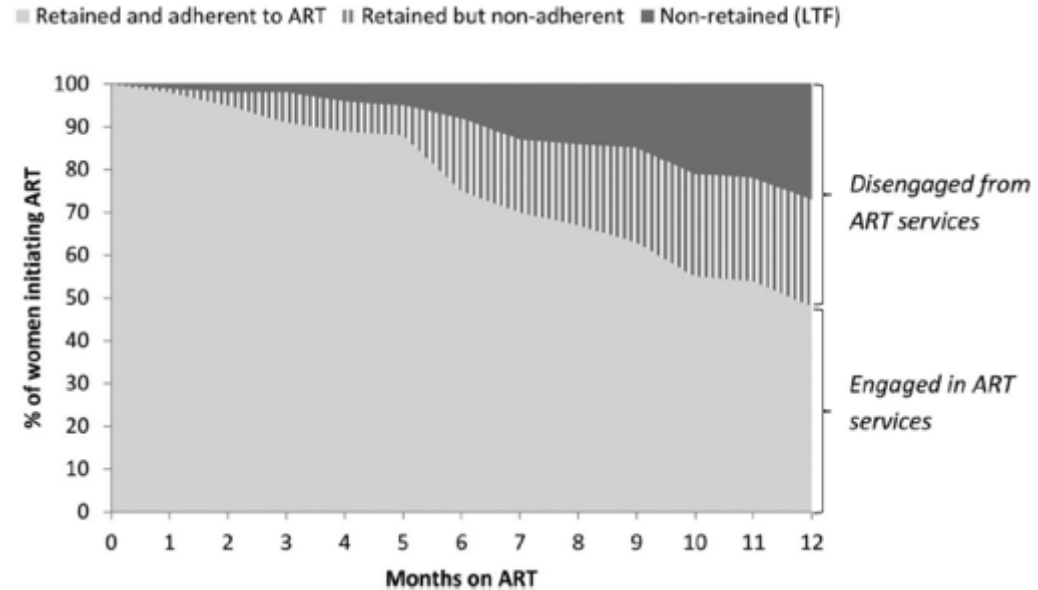
INFLUENCES



INTERVENTION  
APPROACHES



- Retention<sup>1</sup>
  - <25-75% at 12 mos
- Adherence<sup>2</sup>
  - 30 to ~50% at 12 mos
- Suppression<sup>3</sup>
  - 84% at 6 mos in Malawi
- EID<sup>4</sup>
  - <50%



Postpartum engagement in care  
*Myer JAIDS 2017*

1. Miller AIDS Pt Care & STD 2017, Atanga Trop Med Int Health 2017, 2. Erlwanger JAIDS 2017, 3. Hosseinipour JAIDS 2017, 4. UNAIDS 2016, Get on the fast track.



Review article

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

Pascal Geldsetzer<sup>5,1</sup>, H Manisha N Yapa<sup>2</sup>, Maria Vaikath<sup>1</sup>, Osondu Ogbuonji<sup>1</sup>, Matthew P Fox<sup>3</sup>, Shaffiq M Essajee<sup>4</sup>, Eyerusalem K Negussie<sup>4</sup> and Till Bärnighausen<sup>1,2</sup>

<sup>5</sup>Corresponding author: Pascal Geldsetzer, 677 Huntington Avenue, Boston, MA 02115, USA. Tel: +1 617 432 1232. ([pag395@mail.harvard.edu](mailto:pag395@mail.harvard.edu))

10 studies, 3 mHealth, 4 integration, 3 other

Weak evidence base, inconsistent retention measures,  
text reminders may improve early retention



RESEARCH ARTICLE

Open Access

# Medication adherence in pregnant women with human immunodeficiency virus receiving antiretroviral therapy in sub-Saharan Africa: a systematic review



Olumuyiwa Omonaiye<sup>1\*</sup>, Snezana Kusljic<sup>2</sup>, Pat Nicholson<sup>1</sup> and Elizabeth Manias<sup>1</sup>

Stigma, disclosure, distance, food deprivation, HIV knowledge influenced ART adherence

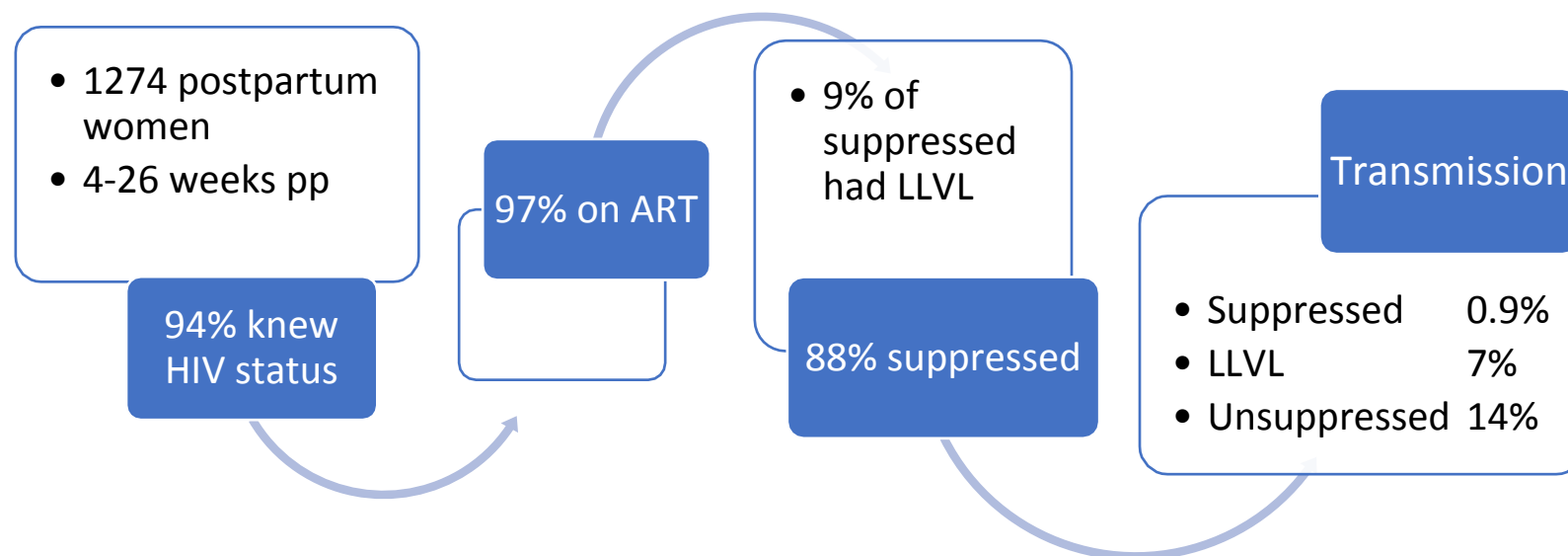


RESEARCH ARTICLE

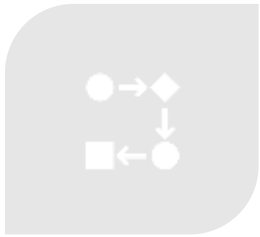
## Low detectable postpartum viral load is associated with HIV transmission in Malawi's prevention of mother-to-child transmission programme

Megan Landes<sup>1,2</sup>, Monique van Lettow<sup>1,2\*</sup> , Ernest Nkhoma<sup>4</sup>, Beth Tippet Barr<sup>5</sup>, Zinenani Truwah<sup>4</sup>, Erik Shouter<sup>6</sup>, Andreas Jahn<sup>6</sup>, Andrew Auld<sup>7</sup>, Thokozani Kalua<sup>8</sup> and Joep J van Oosterhout<sup>1,8</sup>

\*Corresponding author: Monique van Lettow, PO BOX 1071, Zomba, Malawi. Tel: +265 888 117 7316. ([mvvanlettow@jia2.international.org](mailto:mvvanlettow@jia2.international.org))







MTCT PROGRESS



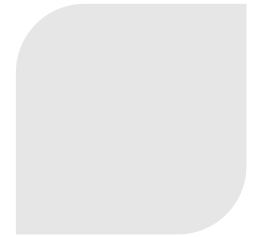
RETENTION AND  
ADHERENCE



MCH AND HIV



INFLUENCES

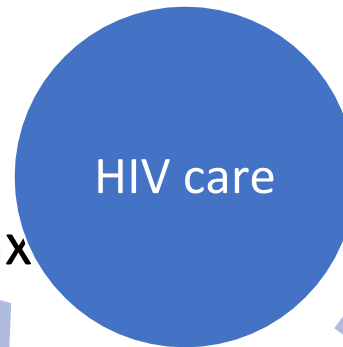


INTERVENTION  
APPROACHES





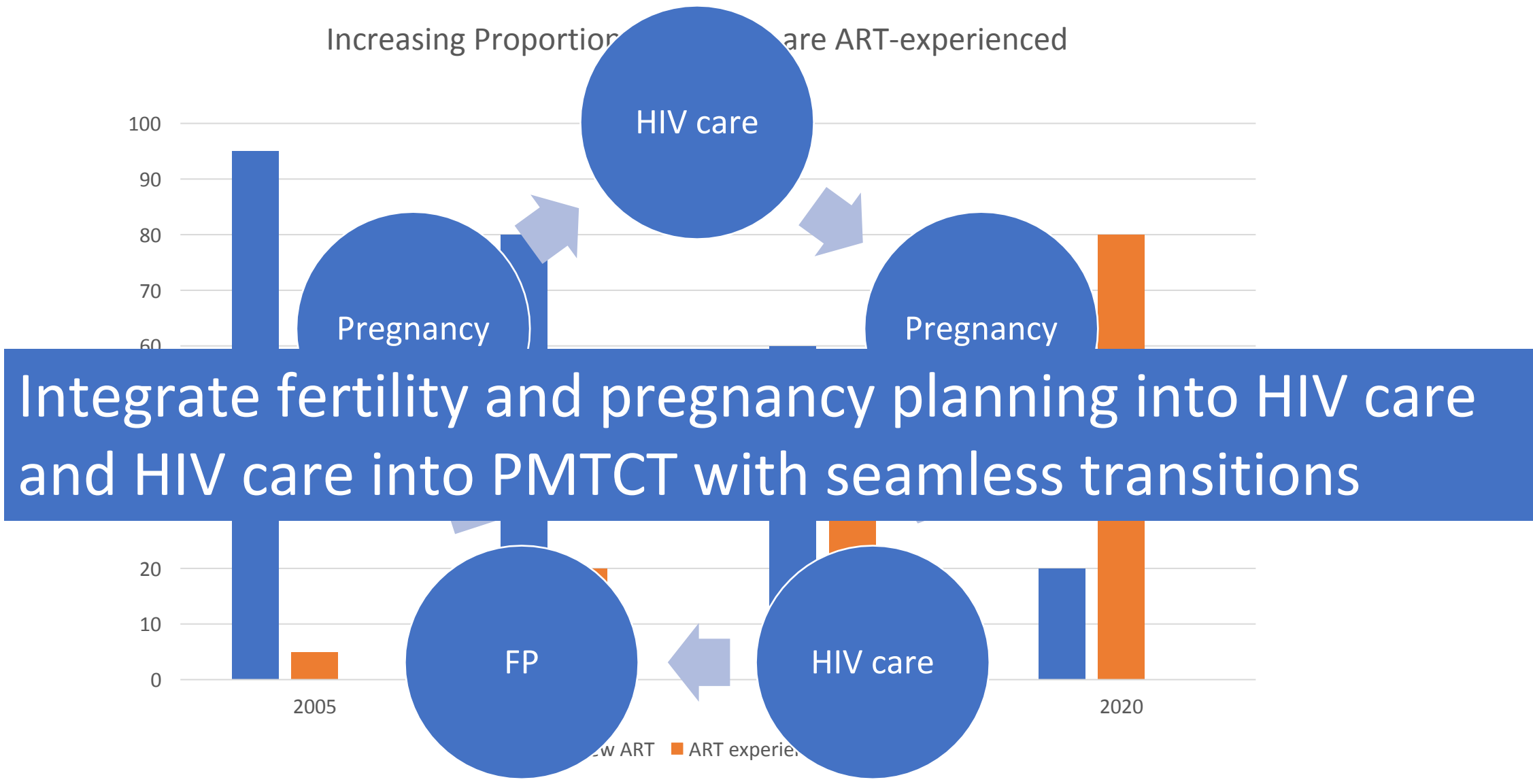
ANC  
Immunizations  
Vitamins  
Malaria prophylax  
Birth planning  
N  
B  
De  
Infant  
Maternal Care



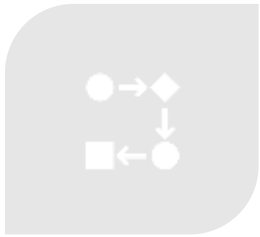
HIV testing  
ART adherence  
Pill refill  
Vital measures  
T  
is  
In. testing











MTCT PROGRESS



RETENTION AND  
ADHERENCE



MCH AND HIV



INFLUENCES



INTERVENTION  
APPROACHES



## RESEARCH ARTICLE

"I would love if there was a young woman who could encourage us, to ease our anxiety who would have if we were alone": Adaptation of the Mothers2Mothers Mentor Mother Model for adolescent mothers living with HIV in Malawi

Nicole B. Carbone<sup>1</sup>, Joseph Njala<sup>1</sup>, Debra J. Jackson<sup>2,3</sup>, Michael T. Eliya<sup>4</sup>, Chileshe Chilangwa<sup>5</sup>, Jennifer Tseka<sup>1</sup>, Tasila Zulu<sup>1</sup>, Jacqueline R. Chinkonde<sup>6</sup>, Judith Sherman<sup>6</sup>, Chifundo Zimba<sup>1</sup>, Innocent A. Mofolo<sup>1</sup>, Michael E. Herce<sup>1,7\*</sup>

Impact of HIV-status disclosure on HIV viral load in pregnant and postpartum women on antiretroviral therapy

Peer

Partner

Interventions to engage male partners and peers, address adolescents and maternal motivation/knowledge are needed

**Antiretroviral adherence, elevated viral load and drug resistant mutations in HIV-infected women initiating treatment in pregnancy: a nested case-control study**

Authors

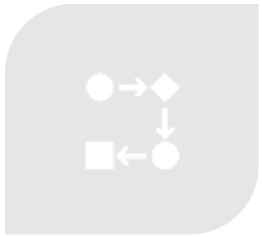
Landon Myer<sup>1,2</sup>, Andrew D. Redd<sup>3,4</sup>, Elton Mukonda<sup>1</sup>, Briana A. Lynch<sup>3</sup>, Tamsin K. Phillips<sup>1,2</sup>, Anna Eisenberg<sup>3</sup>, Nei-Yuan Hsiao<sup>5,6</sup>, Adam Capoferri<sup>4</sup>, Alison Zerbe<sup>7</sup>, William Clarke<sup>8</sup>, Maia Lesosky<sup>1</sup>, Autumn Breaud<sup>8</sup>, James McIntyre<sup>1,9</sup>, Daniel Bruno<sup>10</sup>, Craig Martens<sup>10</sup>, Elaine J. Abrams<sup>7,11</sup>, Steven J. Reynolds<sup>3,4</sup>

**Low detectable postpartum viral load is associated with HIV transmission in Malawi's prevention of mother-to-child transmission programme**

Megan Landes<sup>1,2</sup>, Monique van Lettow<sup>1,2\*</sup>, Ernest Nkhoma<sup>4</sup>, Beth Tippet Barr<sup>5</sup>, Zinenani Truwah<sup>4</sup>, Erik Shouter<sup>4</sup>, Andreas Jahrl<sup>6</sup>, Andrew Auld<sup>7</sup>, Thokozani Kalua<sup>8</sup> and Joep J. van Oosterhout<sup>1,8</sup>

\*Corresponding author: Monique van Lettow, PO BOX 1071, Zomba, Malawi, Tel: +265 888 117 734. ([mvanlettow@igribailternational.org](mailto:mvanlettow@igribailternational.org))





MTCT PROGRESS



RETENTION AND  
ADHERENCE



MCH AND HIV



INFLUENCES

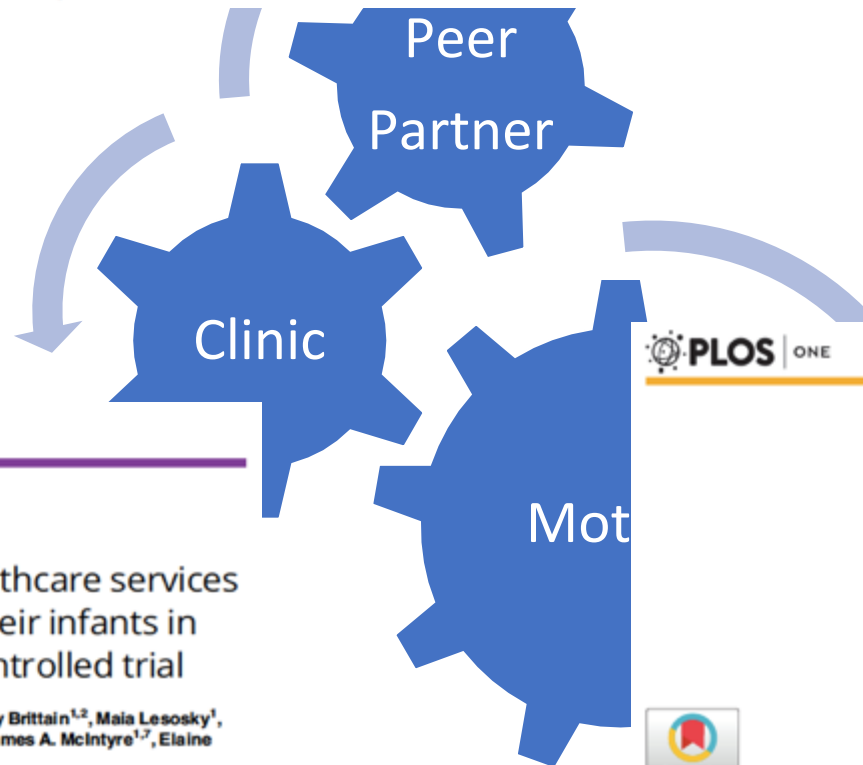


INTERVENTION  
APPROACHES



# Effectiveness of a Lay Counselor–Led Combination Intervention for Retention of Mothers and Infants in HIV Care: A Randomized Trial in Kenya

Ruby N. Fayorsey, MD, MPH,\* Chunhui Wang, MD,\* Duncan Chege, PhD,† William Reidy, PhD,\* Masila Syengo, MA,† Samuel O. Owino, MBChB,‡ Emily Koech, MBChB,†§|| Martin Sirengo, MBChB,¶ Mark P. Hawken, MBChB,† and Elaine J. Abrams, MD\*#



## RESEARCH ARTICLE

Integration of postpartum healthcare services for HIV-infected women and their infants in South Africa: A randomised controlled trial

Landon Myer<sup>1,2\*</sup>, Tamsin K. Phillips<sup>1,2</sup>, Allison Zerbe<sup>3</sup>, Kirsty Brittain<sup>1,2</sup>, Maia Lesosky<sup>1</sup>, Nei-Yuan Hsiao<sup>4,5</sup>, Robert H. Remien<sup>6</sup>, Claude A. Mellins<sup>6</sup>, James A. McIntyre<sup>1,7</sup>, Elaine J. Abrams<sup>3,8,9</sup>

## RESEARCH ARTICLE

The impact of approaches in improving male partner involvement in the prevention of mother-to-child transmission of HIV on the uptake of safe infant feeding practices by HIV positive women in sub-Saharan Africa. A systematic review and meta-analysis

Noah F. Takah<sup>1,2\*</sup>, Jeannine A. Alem<sup>1</sup>, Leopold N. Aminde<sup>1,3</sup>, Moffat Malisheni<sup>4</sup>, Grant Murewenhema<sup>5</sup>

**1** Department of Health Policy, International Diagnostics Centre Africa, Addis Ababa, Ethiopia, **2** Department of Clinical Research, London School of Hygiene and Tropical Medicine, London, United Kingdom, **3** Department of Clinical Epidemiology, School of Public Health, University of Queensland, Brisbane, Australia, **4** Department of Maternal and Child Health, Ministry of Health, Lusaka, Zambia, **5** Department of Maternal and Child Health, Ministry of Health, Harare, Zimbabwe





# mHealth to improve PMTCT retention and adherence



HIV *mhealth* system  
*Adapt for PMTCT*

MCH *mhealth* system  
*Adapt for PMTCT*

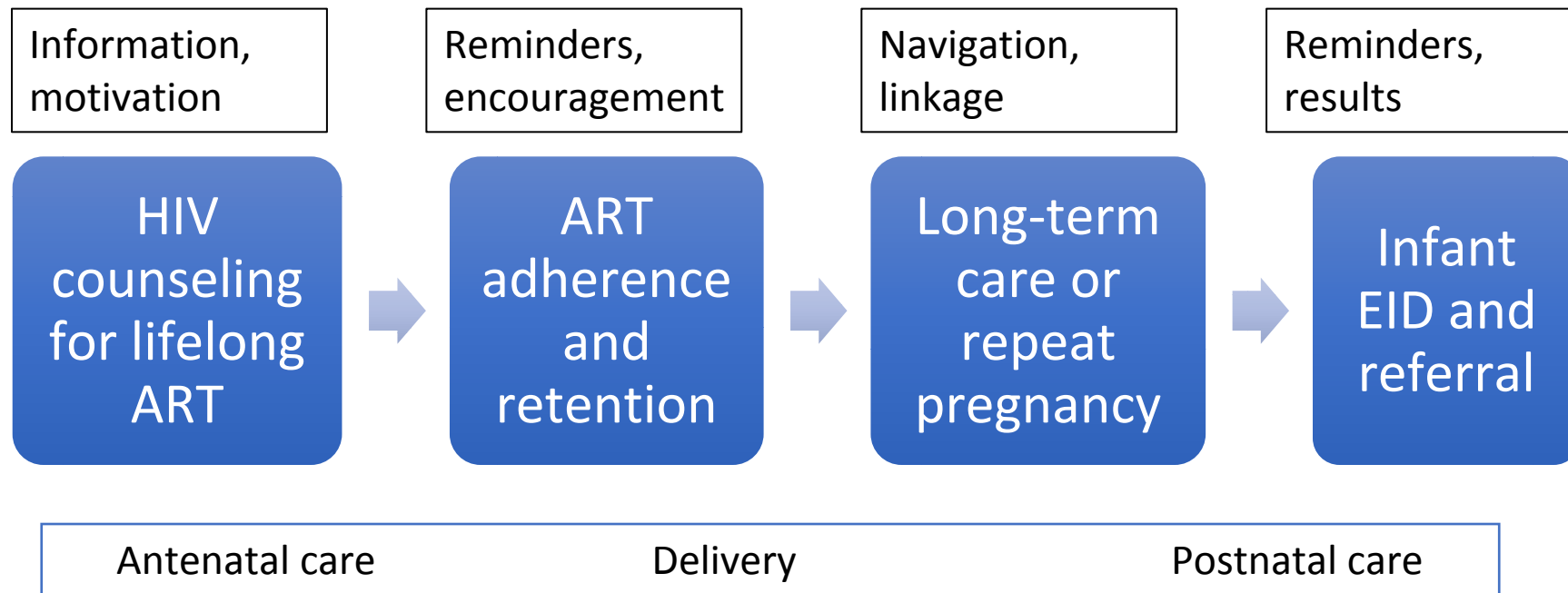


New system designed  
for PMTCT or HIV in  
women





# PMTCT cascade and mHealth intersections





|               | Design            | Approach       | Postpartum Follow-up        |
|---------------|-------------------|----------------|-----------------------------|
| Odeny 2014    | RCT<br>n=188      | 14 SMS         | 8 wks<br>RR 1.66, p=0.04    |
| Kebaya 201    | RCT               | Biweekly       | 10 wks                      |
| Schwartz 2015 | Pre-post<br>N=100 | Text and calls | 12 month<br>RR 1.03, p=0.81 |

Messaging improves early retention

19:20679  
://dx.doi.org/10.7448/IAS.19.1.20679



#### Review article

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

Pascal Geldsetzer<sup>5,1</sup>, H Manisha N Yapa<sup>2</sup>, Maria Vaikath<sup>1</sup>, Osondu Ogbuaji<sup>1</sup>, Matthew P Fox<sup>3</sup>, Shaffiq M Essajee<sup>4</sup>, Eyerusalem K Negussie<sup>4</sup> and Till Bärnighausen<sup>1,2</sup>



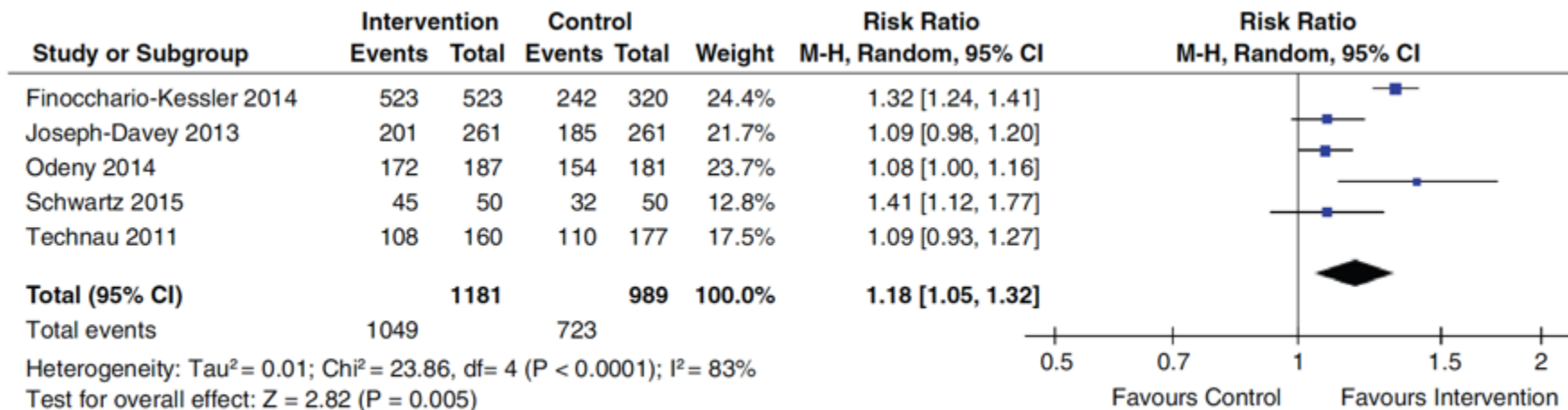


Figure 4. **E Messaging improves EID uptake**

Ambia J and Mandala J. *Journal of the International AIDS Society* 2016, **19**:20309  
<http://www.jiasociety.org/index.php/jias/article/view/20309> | <http://dx.doi.org/10.7448/IAS.19.1.20309>



## Review article

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

Julie Ambia<sup>1</sup> and Justin Mandala<sup>§,2</sup>

<sup>§</sup>Corresponding author: Justin Mandala, FHI 360, 1825 Connecticut Ave, Washington, DC 20009, USA. Tel: +1 202 884 8319. Fax: +1 202 884 8400. ([jmandala@fhi360.org](mailto:jmandala@fhi360.org))



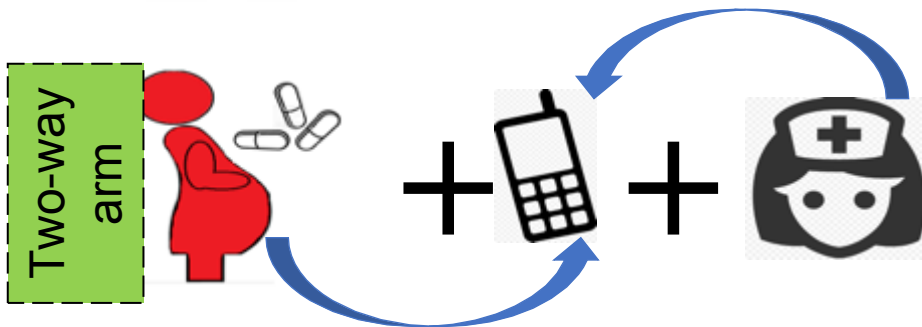
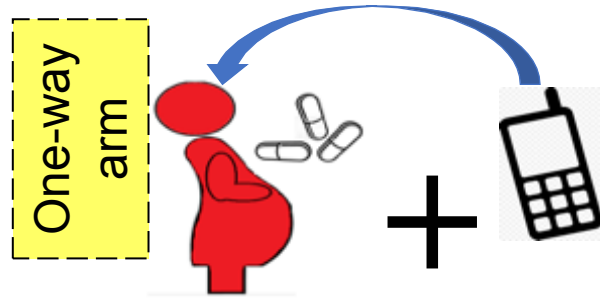
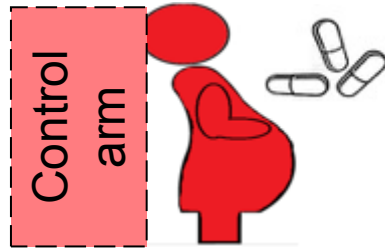
|                                                                                | Message topics                      | Design, size | Frequency        | Outcomes or Findings                  | End  |
|--------------------------------------------------------------------------------|-------------------------------------|--------------|------------------|---------------------------------------|------|
| Kassaye EGPAF, cluster RCT (AIDS Res and Treatment 2016)                       | Multiple approaches                 | Cluster RCT  | SMS 3-6 per week | No effect on maternal ARV uptake, EID | 2016 |
| TEXT-IT                                                                        |                                     | Randomized   | 14 SMS at q      | Retention 1 yr                        | 2017 |
| RCTs in progress on PMTCT long-term retention, adherence and viral suppression |                                     |              |                  |                                       |      |
| HITS                                                                           | women messages                      |              |                  | preg ART adherence                    |      |
| WelTel                                                                         | WelTel 'shida' with escalation call | RCT, 600     | weekly           | Retention 24 m pp, ART adherence, CEA |      |
| Mobile WACHX                                                                   | 2 way or 1 way SMA vs. control      | RCT 875      | weekly           | Retention 24 m pp, ART, VL, CEA       | 2020 |





# Mobile WACH-X

*Unger, Kinuthia, Ronen, Perrier*



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

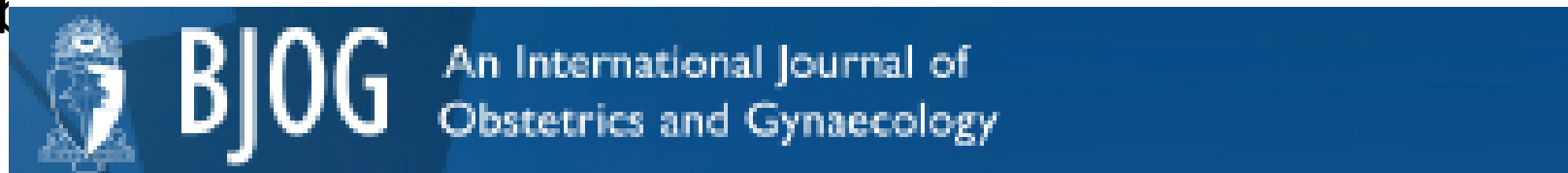






# Mobile WACH system designed for MCH

Hybrid mobile system for MCH



DOI: 10.1111/1471-0528.15287  
www.bjog.org

Maternal medicine 18

Critical point

Time Period

Messaging Themes

Pregnancy

Pregnancy sup

Bi

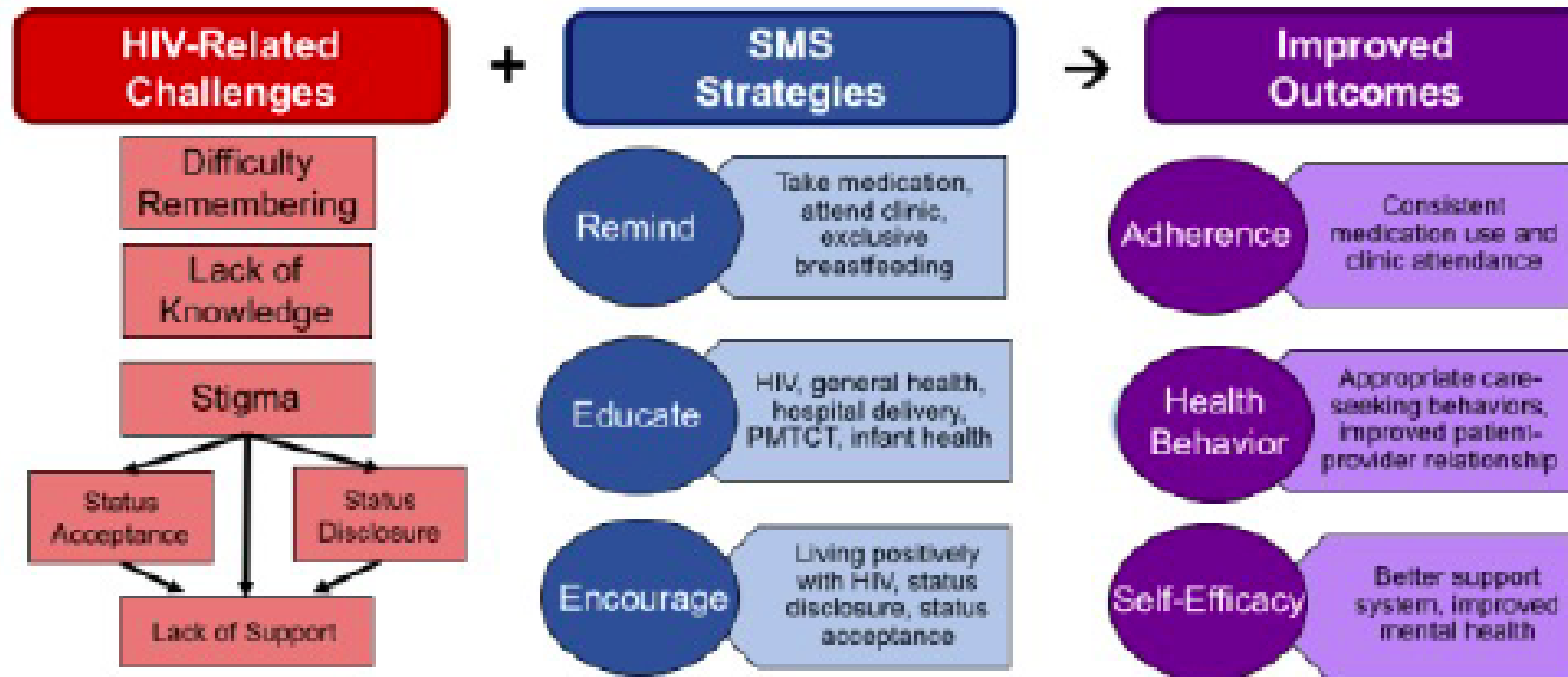
## Short message service communication improves exclusive breastfeeding and early postpartum contraception in a low- to middle-income country setting: a randomised trial

JA Unger,<sup>a,b</sup> K Ronen,<sup>a</sup> T Perrier,<sup>c</sup> B DeRenzi,<sup>d</sup> J Slyker,<sup>b</sup> AL Drake,<sup>a</sup> D Mogaka,<sup>a</sup> J Kinuthia,<sup>a,f</sup>  
G John-Stewart<sup>a,g,h,i</sup>

Infant reeding

Infant health





**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

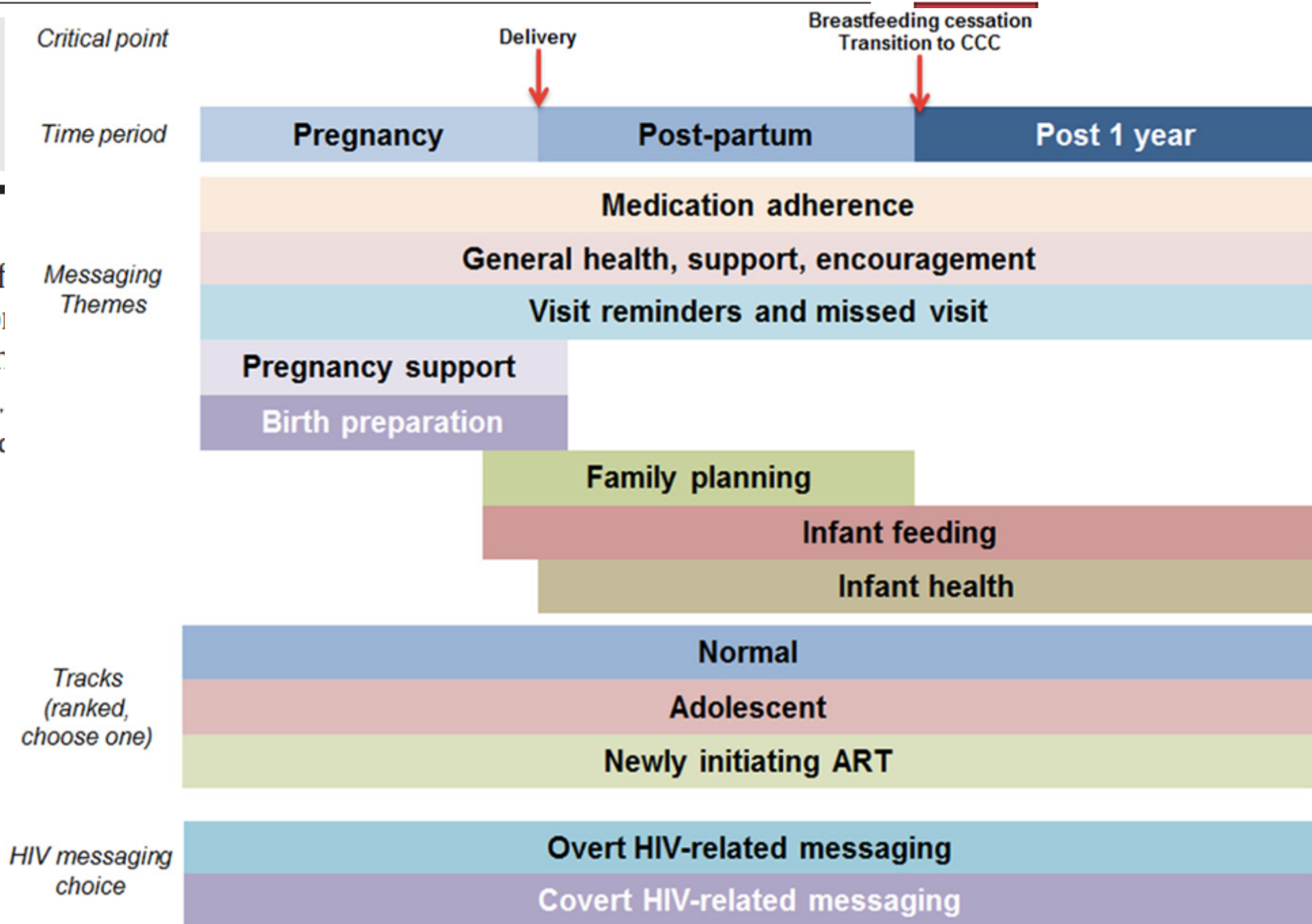


Photo with permission



# Evaluation of Option B+ p design and m

Alison L. Drake<sup>a</sup>  
Barbra A. Richard







**Mama Baby** Study ID: ---- ANC #: ----/---/--- CCC #: ---- TWO-WAY



Send Msg



Call Log 2



Mama Baby

Untranslated

Displaying Original

12 Aug 16 20:17

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

Related

Unrelated

Topic:

None

Reply

Dismiss

System

Displaying Original

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

Displaying Original

9 Aug 16 15:26

thanx val for the concern! be blessed!

Reply

Nurse

Displaying Original

9 Aug 16 15:21

thats good,have a good day



Mama Baby

Displaying Original

9 Aug 16 15:11

yes they gave me.

Reply

### Participant Details: Mama Baby

Edit

Phone number +254700000000

Status Post-Partum

Estimated Delivery Date 2016-??-??

Delivery Date 2016-??-??

Age 38

Send Day Friday

Send Time Evening (8 PM)

SMS Track 4 - Normal

ART Initiation 2016-??-??

Previous pregnancies 3

HIV Disclosure Yes

HIV Messaging HIV Content Allowed

### Clinic Visits and History



Visit History

Date

Type

When



System

Displaying Original

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

Untranslated

Displaying Original

12 Aug 16 20:17

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

Related

Unrelated

Topic:

None

Reply

Dismiss



Mama Baby

Displaying Original

9 Aug 16 15:26

thanx val for the concern! be blessed!

Reply



# An mHealth SMS intervention on Postpartum Contraceptive Use Among Women and Couples in Kenya: A Randomized Controlled Trial

*Elizabeth K. Hamington, MD, MPH, Alison L. Drake, PhD, MPH, Daniel Matemo, MPH, FMMed, MPH, Grace John-Stewart, MD, PhD, John Kinuthia, MBChB, MMed, MPH, and*



Number at risk

Control

129

115

65

37

2-way SMS

125

108

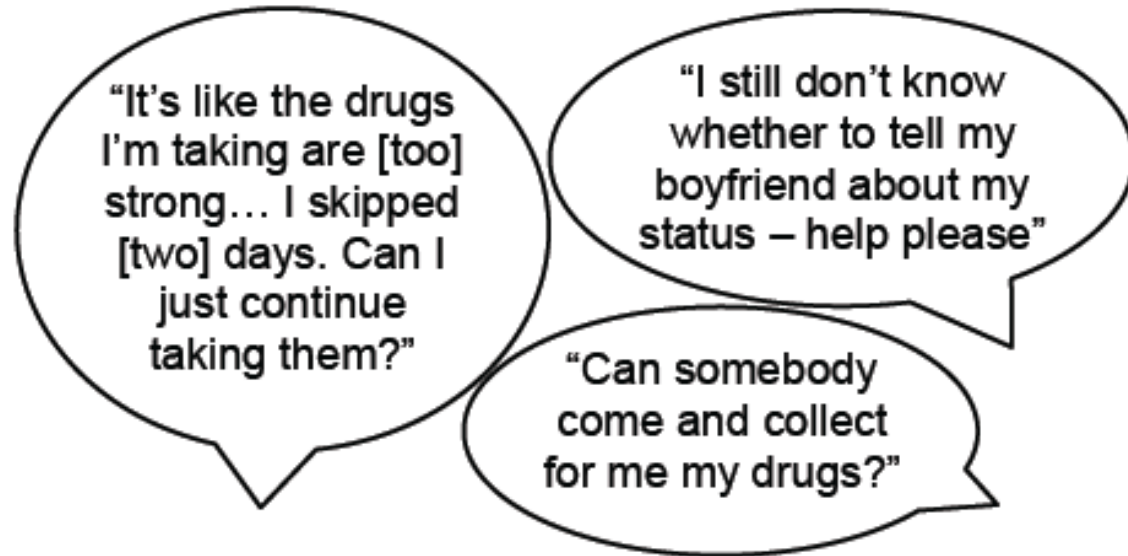
58

24

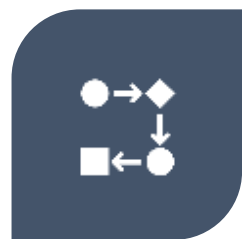




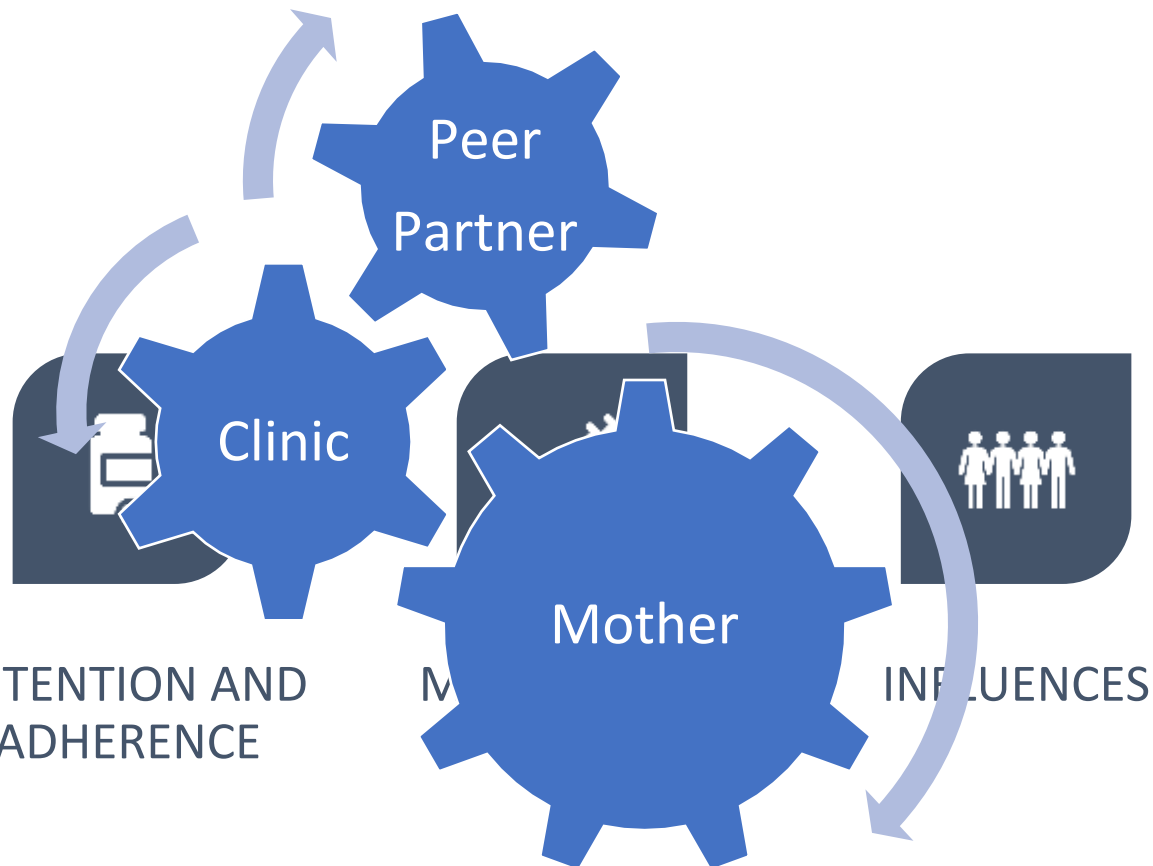
- Women like 2-way SMS
- Push messages kindle conversations
- SMS useful for confidential topics
- Can provide 'real-time' advice
- Issues can inform clinic counseling
- Providers gain skills







MTCT PROGRESS



RETENTION AND  
ADHERENCE

M

INFLUENCES



INTERVENTION  
APPROACHES





# Acknowledgements

## **University of Nairobi**

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Brian DeRenzi  
Elizabeth Harrington  
Barb Richardson  
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Emma Mukenyi  
Celestine Adogo  
Rose Onyango  
Georgina Mugodo  
Dyphna Kerubo  
Jael Mangira  
Concilia Mogarika  
Susan Atieno  
Grace Ochieng  
Naomi Momanyi  
Beatrice Atieno  
Adhiambo Brender  
Anne Opere  
Colleta Onunga  
Janet Adhiambo  
Winnie Achieng



## **Families in the studies**

## **Community Advisory Board Members**

NIH/NICHD 5 R01 R01 Mobile WACH-X  
NIH/NICHD 5 K24 HD054314-08

