Implementing a National mHealth System Improves Viral Suppression and Retention in Routine HIV Care in Kenya

1A. Wachira, 1M. Kimani, 3K. Owuor, 2S. Maina, 1I. Mukui, 1B. Mambo, 1B. Kigen

1National AIDS and STI Control Programme, Ministry of Health, Directorate of Preventive and Promotive Health Services, Nairobi, Kenya.

2mHealth Kenya,

3Centre for Health Solution Kenya (CHS).
Conflict of Interest

• Nothing to disclose
Outline

• Background
• Methods
• Findings
• Conclusion
Background

- Kenya guidelines support testing and treatment uptake
  - ART Guidelines, 2016 recommends Test & Start
  - HTS Guidelines, 2018 recommends partner notification and linkage

- As the country scales identification and linkage, averting HIV associated disability and death becomes increasingly important

- Barriers:
  - Challenges in retention over time
  - Viral Suppression remains a concern
Background – mHealth

- Text message interventions promote ART adherence (Strong evidence since 2010)
  - Increased adherence with SMS (OR=1.39)
  - Improved VL (OR=1.56)
- Similar evidence emerging for PrEP
In 2018, the number of mobile phone subscriptions in Kenya surpassed the total population

- Text is the single most used feature on smart phone
  - In 2018, 64.7 billion domestic texts were sent; Average of 180m messages/day
  - Texts have a 99% open rate

https://www.textrequest.com/blog/texting-statistics-answer-question
Methods

• In Nov 2016, MOH-Kenya rolled out mHealth service “Ushauri” in 105 facilities with poor Viral Suppression outcomes

• It is a web-based appointment management platform
  • Serves as the repository for patient data
  • Performs targeted message scheduling and delivery
  • Standardized messages prepopulated in the system
  • Reminders sent prior to the appointment date (2 days & 24 hours prior)

• Additional Roles
  • Supporting adherence – Weekly educative and motivational texts
  • Broadcast – Communicating unanticipated events

• Link with toll-free national Call Centre for a 2-way loop
Ushauri Facility Process Flow

Your Automated Appointment reminder and Defaulter Tracing Diary system.

Stakeholders/Partners are able to get reports based on their KPIs and make policy based on the live interactive data dashboard made available on the web system.

All registered patients are able to receive alerts on their due appointments as well as alert their care givers if they are not doing well.

All consenting patients can receive wellness and educative information text messages from the system.

Communicate to your patients/users.

At Facility/Partner Level

The care and treatment team can add new client, book a new appointment, and trace all defaulter form the comfort of a mobile device.

At Facility/Partner Level

Stakeholders/Partners are able to get reports based on their KPIs and make policy based on the live interactive data dashboard made available on the web system.
Methods Cont..

• Facilities receiving intervention were matched with those without for comparison based on:
  
  • Patient volume
  
  • Facility level
  
  • Baseline viral suppression and retention
  
  • County of operation and presence of implementing partner

• Retrospective facility data extracted from the National Data Warehouse

• Mixed effects linear regression analysis done on Stata (V 15.1)
Findings

• A total of 96,216 patients enrolled (as at Dec, 2018)
  • 72% of the target number

• Enrolment rate varied across the facilities
  • 99.8% - 18.2%.

• There was a statistically significant increase in the suppression and retention rates post intervention
Change in Viral Suppression

Mean Viral Suppression By Months

Mean Viral Suppression

Months (Jan 2017 - Dec 2018)
## Pre-Post Intervention VS

<table>
<thead>
<tr>
<th>Category</th>
<th>Pre-intervention mean (%)</th>
<th>Post-Intervention mean</th>
<th>Adjusted Change in VS Rates* (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Sites (Implementing Ushauri)</td>
<td>76.9 (72.6, 79.9)</td>
<td>82.9 (78.4, 87.9)</td>
<td>6.0% (4.8%, 7.3%) P&lt;0.001</td>
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<tr>
<td>Control Sites</td>
<td>78.1 (74.3 – 83.1)</td>
<td>82.2 (76.4 – 86.1)</td>
<td>4.1% (3.6, 4.4) P&lt;0.001</td>
<td></td>
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<tr>
<td>Counties</td>
<td>80.6 (77.1, 83.6)</td>
<td>84.5 (82.9, 87.3)</td>
<td>3.9 (3.2% – 4.8%) P=0.009</td>
<td></td>
</tr>
</tbody>
</table>

*Adjusted for facility level and number of patients enrolled
Retention Trends by Month

Mean Retention (%)

Pilot Sites
Control Sites

Months

2017

2018
Conclusions

• Text messaging is a promising strategy in Improving Viral Suppression and Retention in Routine HIV Care

• mHealth intervention is currently undergoing Nationwide scale up based on the results of the pilot.

• Consideration should be made for communities with low mobile phone access
Acknowledgement