

Use of mHealth technology to improve quality of care and child health services in Nairobi's Kibra slum

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Context

- Poor access to quality health services in urban slums is a global challenge.
- Globally, a billion people live in urban slums – most with limited access to public sector health services. Kibra, Kenya's largest slum, is no exception.
- Nairobi's Kibra slum is the largest slum in East Africa, home to nearly 300,000 people,
- Typically, care is first sought from private health care providers (PHCPs) – especially small clinics and chemist shops (often preferred because they are close-by, have more convenient hours, and offer more respectful care).
- The care these children receive is often substandard, or even harmful.
- Most PHCPs are not trained to follow WHO's integrated management of newborn and childhood illness (IMNCI) guidelines.

Introduction

- During January 2019 – April 2020, we piloted a project in Kibra urban slum area in Nairobi County, Kenya, to improve the availability and use of quality child health services delivered by health care providers, specifically focusing on private health care providers (PHCPs).
- We used an innovative mHealth clinical assessment and treatment platform, to improve knowledge, skills, and practice.

Aim

Our pilot project aimed to determine if using the mHealth clinical assessment platform, coupled with supportive supervision and community awareness raising activities, would lead to improved knowledge and practice among health care providers (HCPs) for the assessment, diagnosis and treatment of sick children, with a focus on childhood pneumonia and dehydrating diarrhea – the two biggest killers among children of 2-59 months of age.

mHealth technology developed by THINKMD

- It is a web enabled browser-based mHealth platform
- Facilitate non-physician health workers (specifically frontline health care providers) in child health assessment using the same logic and approach as physicians do.
- This platform has proprietary platform logic and is guided by World Health Organization (WHO) recommended IMNCI algorithm
- As a result, it creates WHO's IMNCI compliant assessments, triage, treatment, and follow up recommendations.

Focus of activities/intervention:

- To enhance the knowledge and skills of HCPs on the use of the mHealth technology, and to ensure their compliance to IMNCI guidelines for assessment, diagnosis and treatment of sick children;
- To establish stronger linkages between participating HCPs and sub-county health department for supportive supervision, monitoring, and reporting;
- To ensure HCP's access to quality drugs
- To assess the usability and acceptability of the digital clinical assessment tool.

Training

- 11 Master Trainers on IMNCI from MOH
- Two training batches : April 2019 and October 2019
- In total, 117 health care providers (clinical officers, nurses and pharmacists) were trained:
 - 95 received formal training;
 - 22 received on-the job training
- A total 89 HCPs were users of the mHealth platform at the time of the endline assessment.

Methods

- We collaborated with the Langata/Kibra sub-county health management team
- Adapted MEDSINC content to the Kenyan context
- Trained selected health care providers and equipped them to use MEDSINC (the digital mHealth platform) for assessment, diagnosis and treatment of sick children.
- Baseline (in February 2019) and Endline (March 2020)
- Measured changes by comparing baseline and endline results
- Assessed knowledge, practice, skill and compliance to the MOH-approved IMNCI guidelines in following ways - -
- Interview of health care providers to assess knowledge & practice
- On-site observation (to assess skill and compliance)
- Community survey and exit interviews at HCP's service location
- At endline, we also conducted a "usability and acceptability" survey

Results

The users of the mHealth technology demonstrated –

- Improved knowledge of danger signs for sick children
- Better management of childhood illness, especially diarrhea and pneumonia
- Increased dispensing of Amoxl DT (versus more costly antibiotics) for treating childhood pneumonia
- Improved compliance to follow IMNCI guideline for child's health assessment, diagnose and manage sick children
- Positive usability and acceptability findings

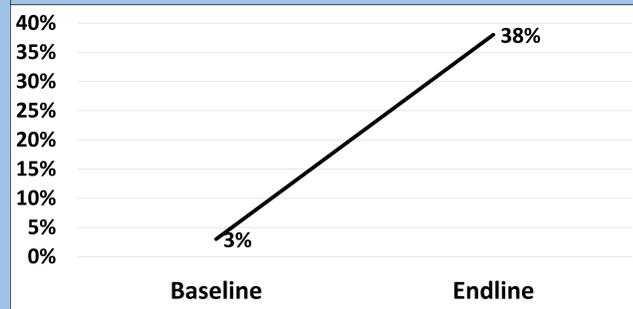
Compliance to IMNCI guideline by users of platform

Facility type	Mean Score at baseline	Mean Score at end line	Percent increase
Chemist clinics	38	75	97
Private clinic	65	77	18
NGO / FBO clinic	59	86	46
Public facilities	70	79	13
All health care providers	49	81	65

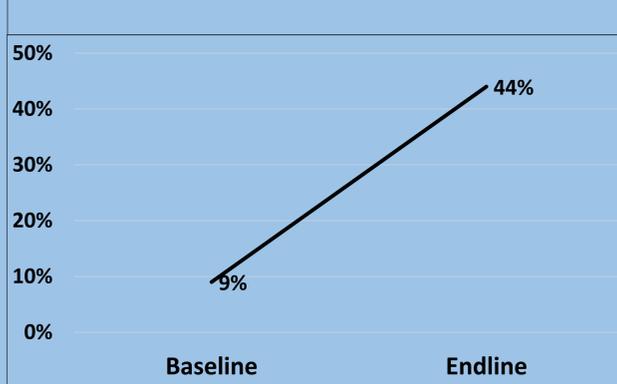
Proportion of health care providers who were aware that antibiotics should not be used for the management of simple diarrhea increased from 14% (at baseline) to 50% (at endline).

Management of simple diarrhea	Baseline	End line
Knew to treat with ORS and zinc	58%	71%
Knew not to dispense antibiotics	14%	50%

We found proportion of HCPs who dispensed Amoxicillin DT for treating childhood pneumonia increased from 3% at baseline to 38% at endline. Previously, many health care providers typically prescribed more expensive, advanced (third generation) antibiotic for children they diagnosed pneumonia



While only 9% of health care providers correctly identified all three danger signs at baseline, 44% of them answered correctly at the endline



Challenges

- High turnover of staff in some facilities and mitigation by on the job training
- HCPs are inclined to dispense revenue-enhancing drugs
- Ensuring internet access to upload data may have difficulties
- Recent impact of COVID-19 on MEDSINC use/reporting
- Some HCPs found the platform as time-taking, and thus got discouraged from using it consistently, although we found the average time taken per assessment by the platform was 7-9 minutes

Lessons Learned

- Results revealed the ability of our used mHealth technology to improve users' adherence to IMNCI protocol, and skill to identify danger signs
- Engaging community health workers is crucial to inform community about when/where to seek care

Disclaimer

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