Bringing community data to community leaders: Using digital tools for a locally-owned HIV prevention and response in Eswatini

Natalie Tibbels, MSPH
Monitoring Officer
Johns Hopkins Center for Communication Programs (CCP)

Panel session: **Real-time Data for Decision Making**

Global Digital Health Forum

December 11, 2018

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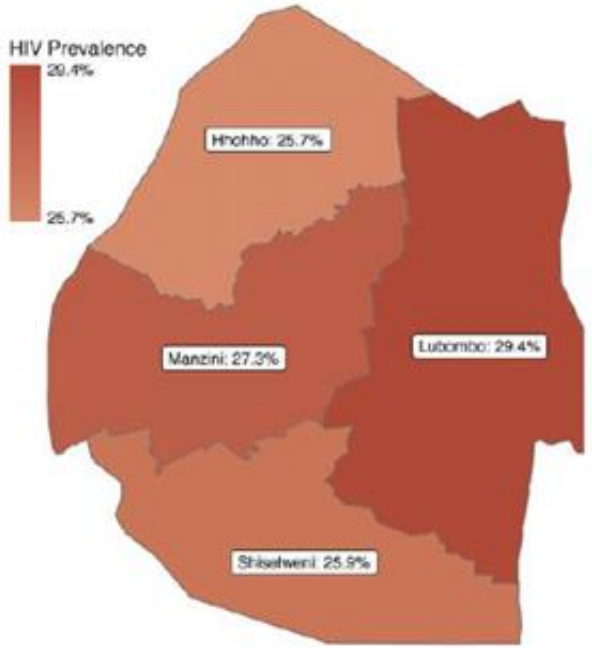
Breakthrough ACTION
FOR SOCIAL & BEHAVIOR CHANGE

The Kingdom of Eswatini

Status of HIV epidemic

- Highest HIV prevalence in the world: 27% (adults aged 15 and older)
- Impressive progress, but with gender disparities
  - Diagnosed: Women 89% vs. men 77% (HIV positive adults who know their status)
  - On ART: Women 91% vs. men 76% (HIV positive adults regularly on ART)
- Need to reach men with testing, antiretroviral therapy (ART), and gender norms change



Source: http://www.unaids.org/en/regionscountries/countries/swaziland/
Swaziland HIV Incidence Measurement Survey 2 (SHIMS2). Summary Sheet: Preliminary Findings. July 2017

The Kingdom of Eswatini

Administrative and traditional structure

Region (4)

Regional Administrator

Inkhundla (55)

Inkhundla Council

Bucophe

Chiefdom (385)

Chief and Inner Council

Chiefdom Development Committee

The HC4 program

Prioritizing a local response

HIV Response: Coordination, Community Capacity, and Communication (HC4)

Program goal: To build the capacity of local, regional, and national structures to support, coordinate, and sustain a **community-led HIV response** and **engage men** to reach the 95–95–95 targets, prevent new infections, and create a safe, supportive environment for adolescent girls and young women (AGYW) and people living with HIV

The HC4 program

Prioritizing a local response

How:

- Work with **leaders**, especially on data use
- Reach **men** with messages and services
- Coordinate **partners** and administrative structures

Data into action

Developing a system to support the community

Program monitoring

- Collect individual and aggregate data
- Secure data storage
- Robust analysis tools
- Integrate with CCP's organizational platform

Community monitoring

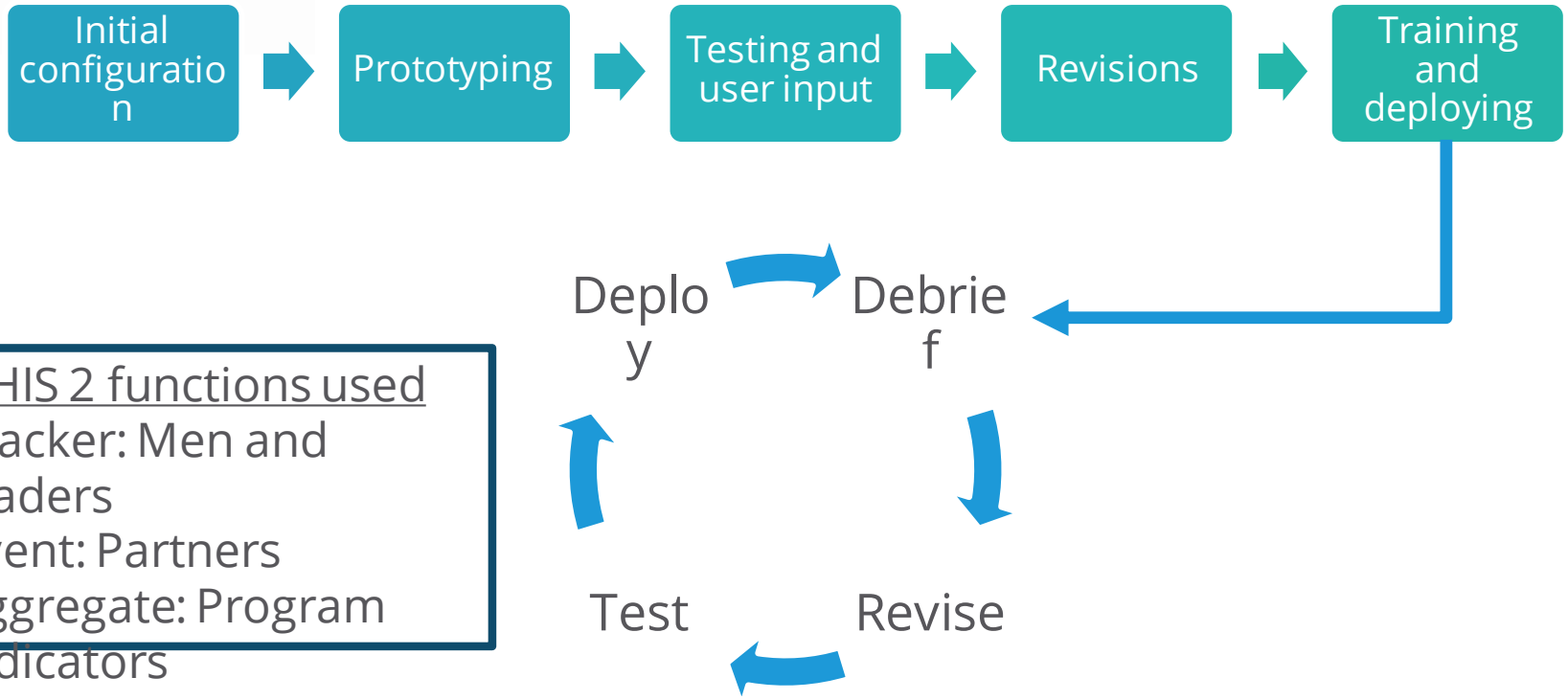
- Integrate data from multiple local sources
- Iteratively developed with leaders *(what and how)*
- Integrate key program M&E indicators
- Custom visualizations—*geo mapping*

Program monitoring system

Platform selection

Program monitoring system

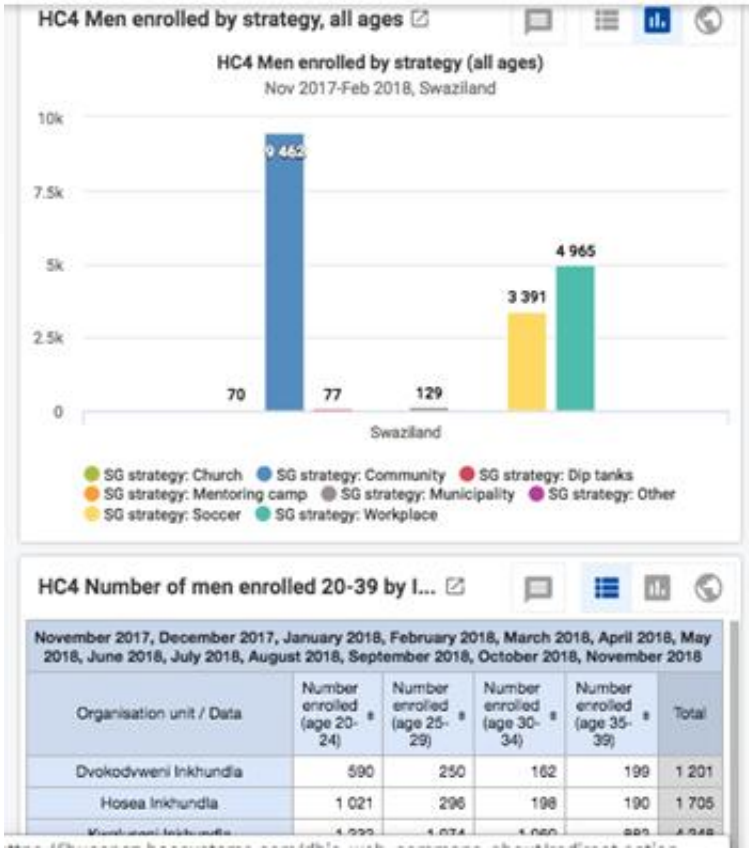
Development process



DHIS 2 functions used
Tracker: Men and leaders
Event: Partners
Aggregate: Program indicators

Program monitoring system

Use



HC4 Enrollment of men by occupation (...

Men's enrollment (all ages) by occupation, Swaziland	
November 2017, December 2017, January 2018, February 2018, March 2018, April 2018, May 2018, June 2018, July 2018, August 2018, September 2018, October 2018, November 2018	
Data / Organisation unit	Swaziland
Occupation: Construction	3 834
Occupation: Driver	388
Occupation: Factory worker	855
Occupation: Other	11 126
Occupation: Public service	730
Occupation: Self-employed	1 953
Occupation: Student	8 577
Occupation: Sugar industry	765
Occupation: Timber industry	2 347
Occupation: Unemployed	12 781
Total	43 356

HC4 Number of men enrolled 20-39 by l...

November 2017, December 2017, January 2018, February 2018, March 2018, April 2018, May 2018, June 2018, July 2018, August 2018, September 2018, October 2018, November 2018					
Organisation unit / Data	Number enrolled (age 20-24)	Number enrolled (age 25-29)	Number enrolled (age 30-34)	Number enrolled (age 35-39)	Total
Dvokodvweni Inkhundla	590	250	162	199	1 201
Hosea Inkhundla	1 021	296	198	190	1 705

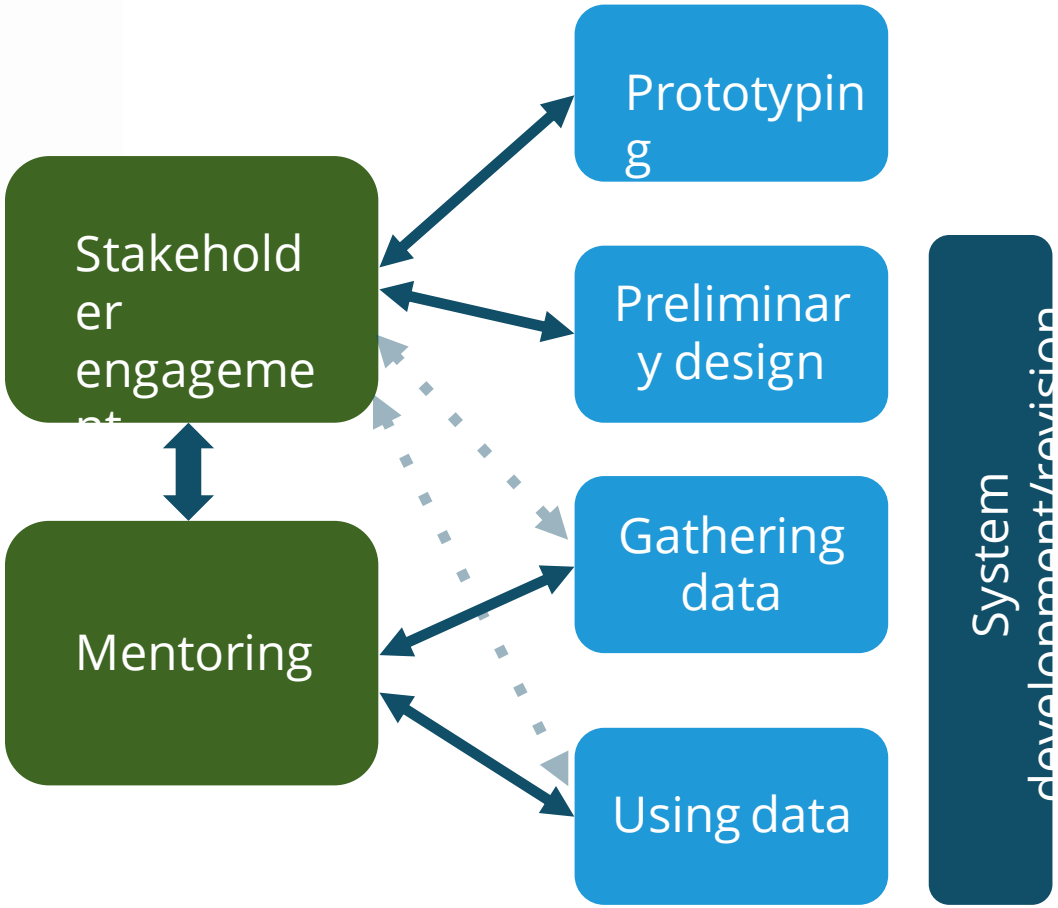
Community monitoring system

Components

1. **List of organizations** working in the community
2. **Map of community structures and local relevant data:** Health facilities, schools, dip tanks, and condom distribution points
3. **Demographic, health, and social data:** High-level indicators such as local population, condom distribution, school enrollment, HIV outcomes, prevention activities, and v
   circumcision (VMMC)
4. **Services offered:** Geoloca
   partner events and numbe
   served

Community monitoring system

Development process



Data into action

Developing a data system to support a community-led HIV response

Challenges

- System boundaries
- Timeline
- Managing expectations
- Data security and ethics
- Platform limitations

Opportunities

- System integration
- Leaders' eagerness
- Donor and government support
- Building evidence
- Learning

Thank You

For more information, please contact:

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mHealth Technology used for MDR DOT Monitoring in Bangladesh

5th Annual Global Digital Health Forum 2018, Washington, DC

Ebne Sayeed Md. Imtiaz
Challenge TB, Bangladesh

Presented by Sherri Haas, Management Sciences for Health

Background

- Community based programmatic management of drug resistant TB (cPMDT) is conducted at household level
- DOT providers visit patients daily, conduct DOT, monitor drug side effects, provide education and support for follow up
- Regular monitoring is required to ensure adherence and adjust treatment
- mHealth application facilitates the process of monitoring and adjustment
- NTP introduced mHealth application in 2013 with USAID assistance

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CHALLENGE TB

TB mHealth

- Web based monitoring tool for TB
- Get input from mobile devices through GPS based application
- Track services delivered by DOT providers
- Maintain electronic medical records
- Send treatment information daily from patients' home to central server
- NTP can analyze recorded data through graphs and charts

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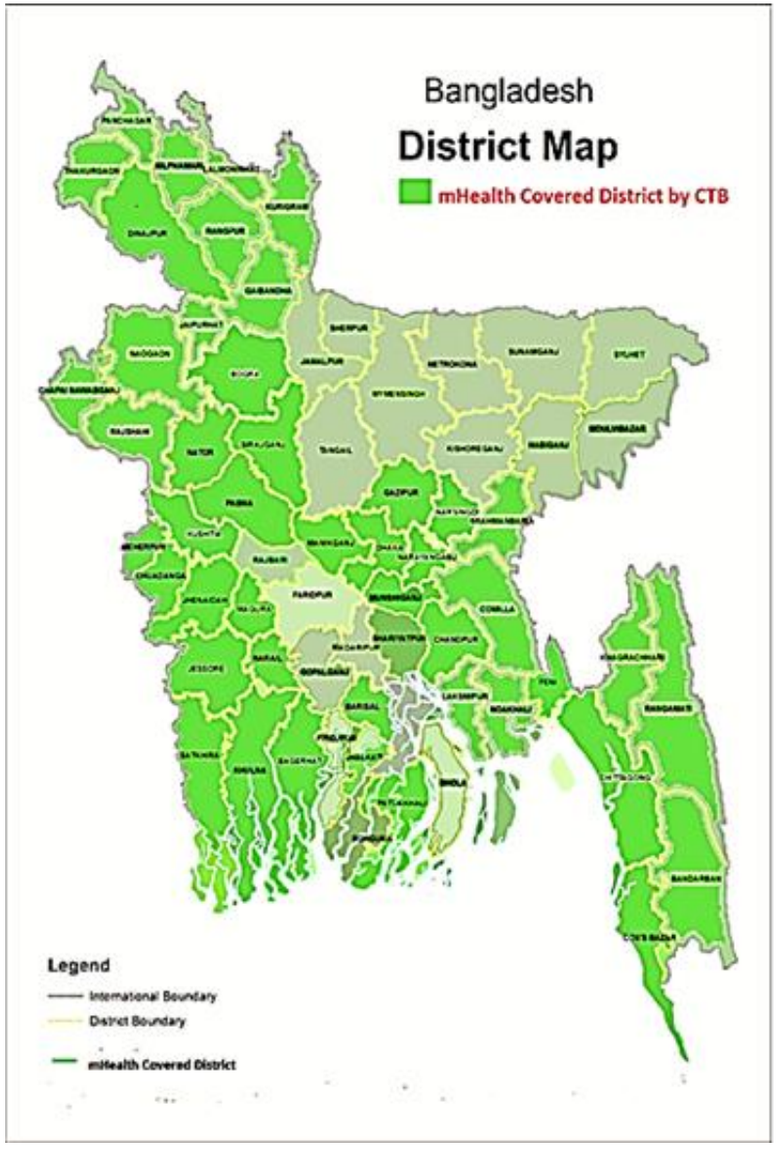
Why do we need TB mHealth

- To ensure treat adherence and prevention of drop out
- Locate DOT providers and places, enables real time monitoring
- Help effective and efficient management of adverse drug reactions
- Facilitate contact investigation through e-tool

Coverage

- District covered: **42**
- DOT provider engaged: **325**
- Patients under treatment: **384**



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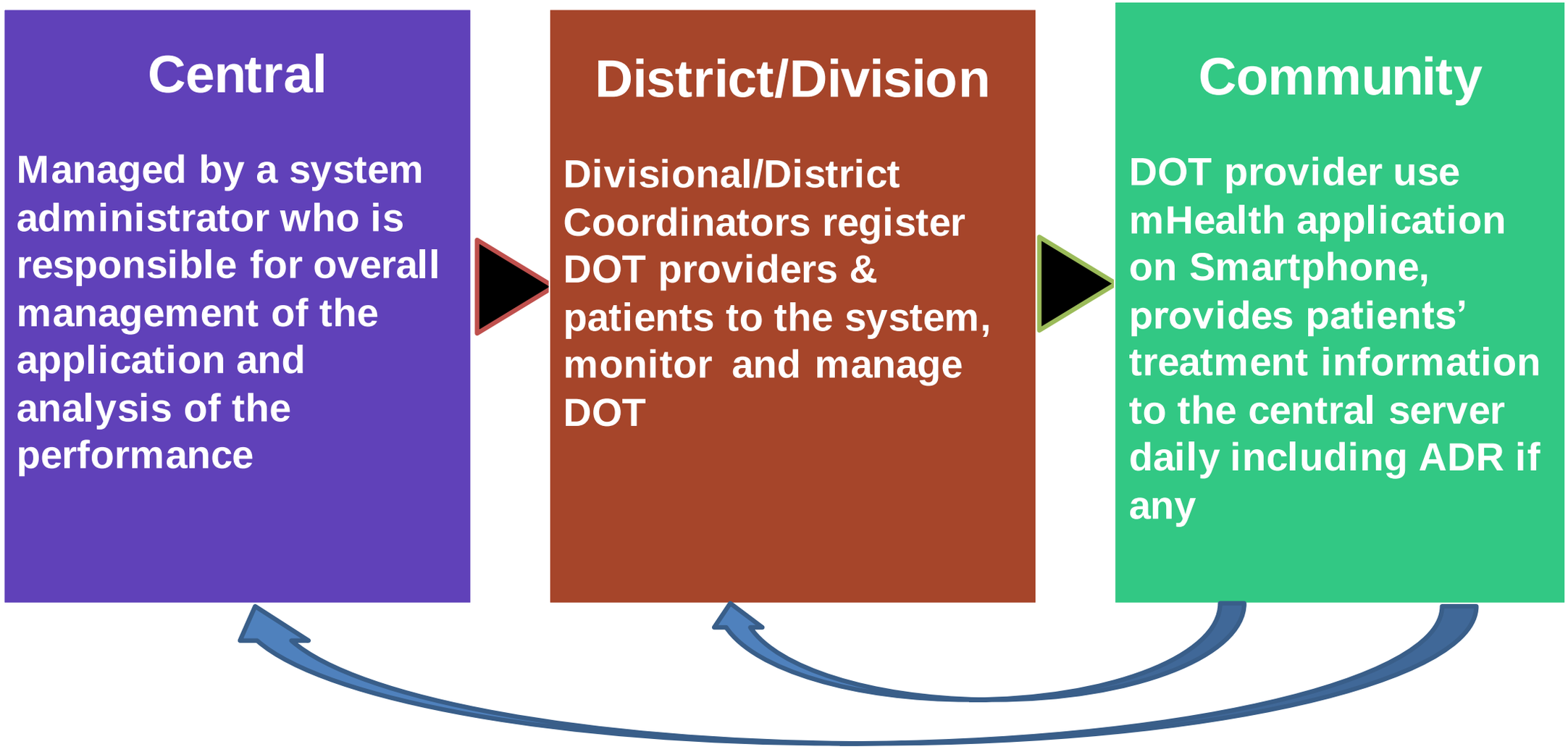
User's roles in TB Health



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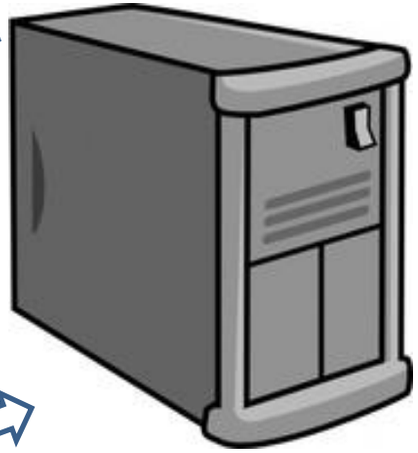
Pathway of Processes

DOT provider collects data with smartphone during home based DOT

Data transmitted via GSM network



Centralized sever storing distributes information externally and internally

Monitoring through pc

[Dashboard]

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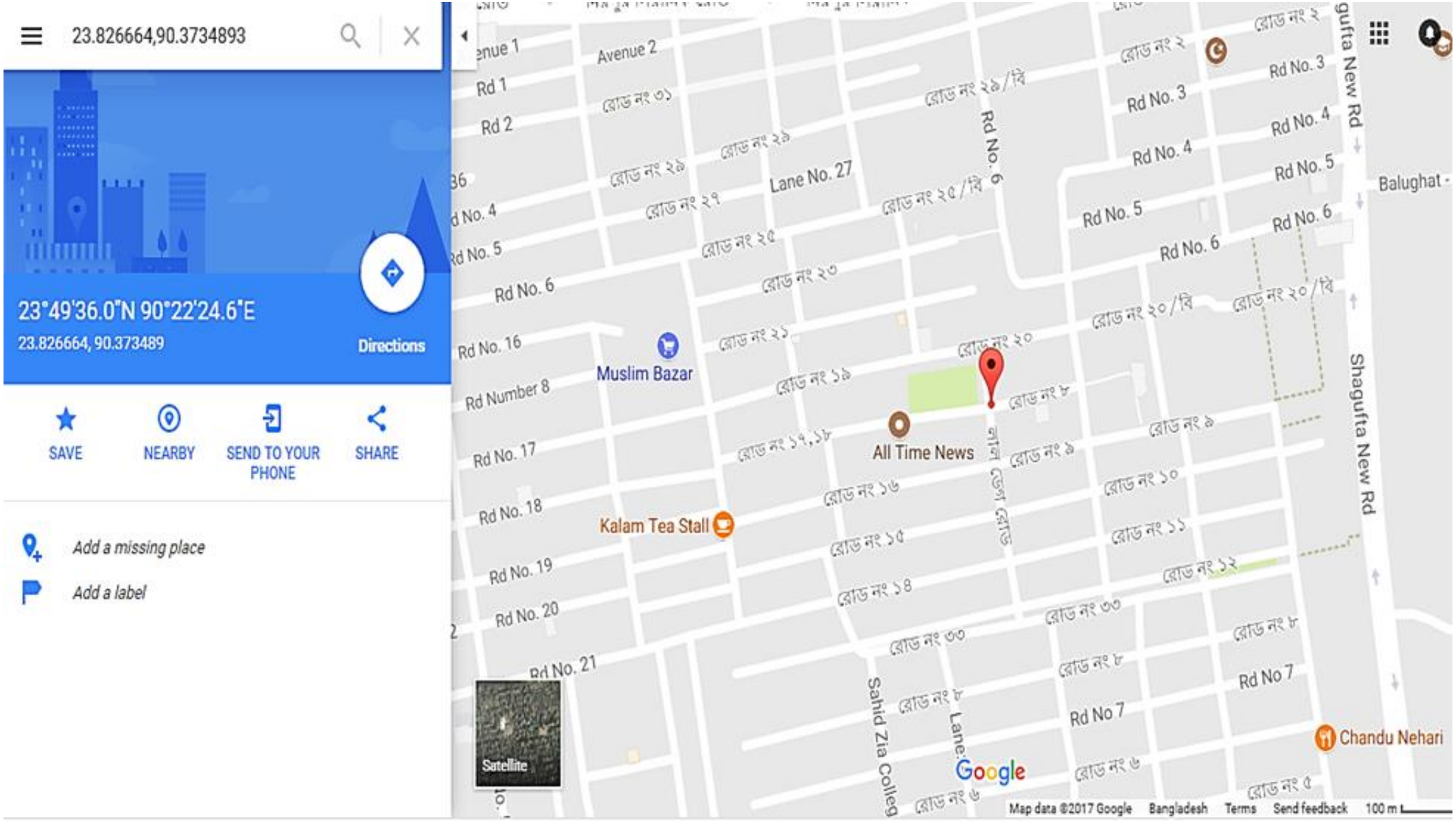
Location Information Captured by mHealth



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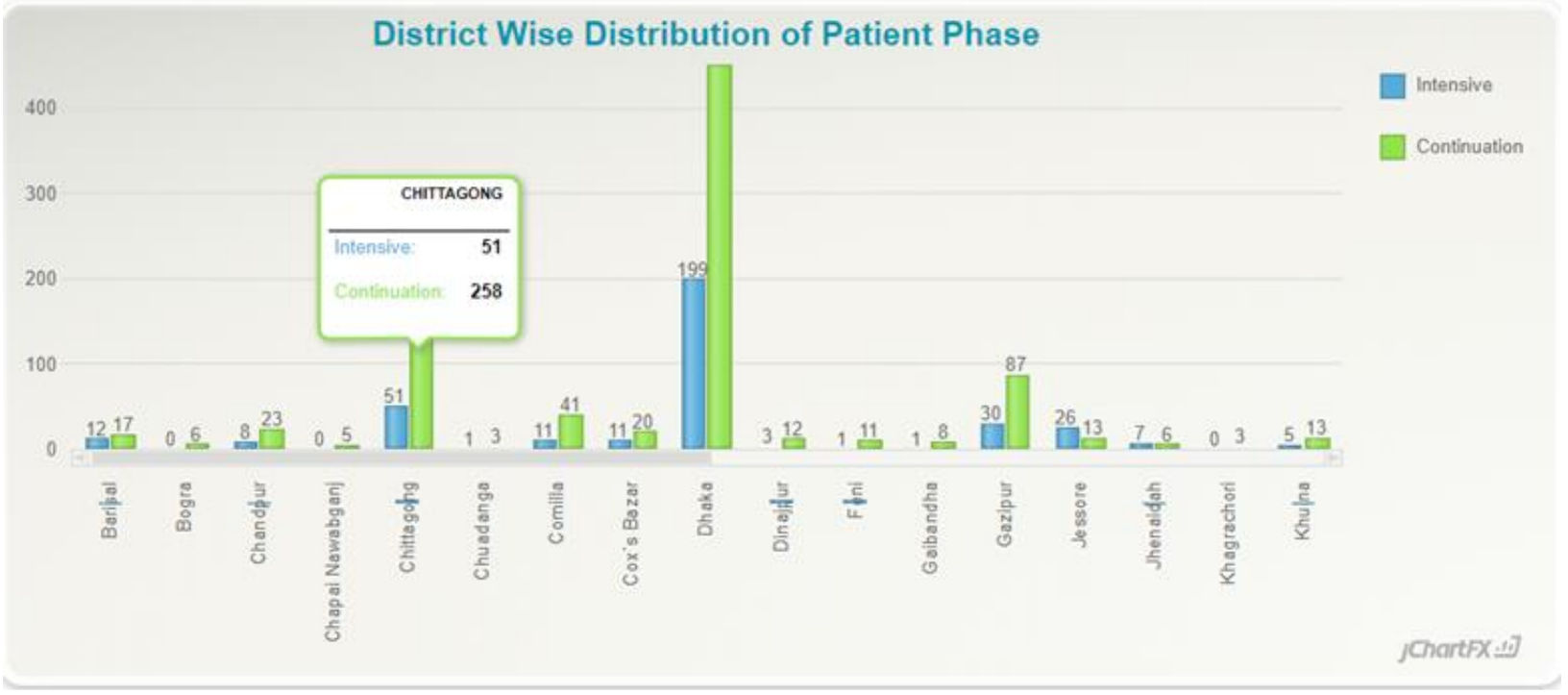
Result: DOT Monitoring & Data Analysis

- Patients' information, treatment start date, DOT providers' information and patient's status are available
- All contact details of the patient and DOT provider tracking is available



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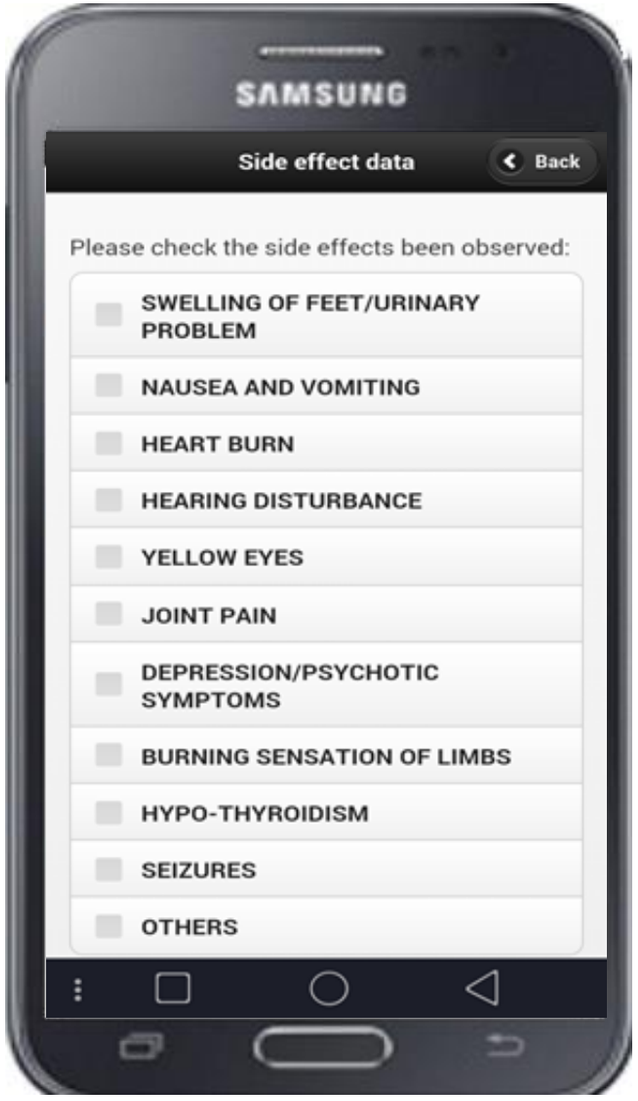
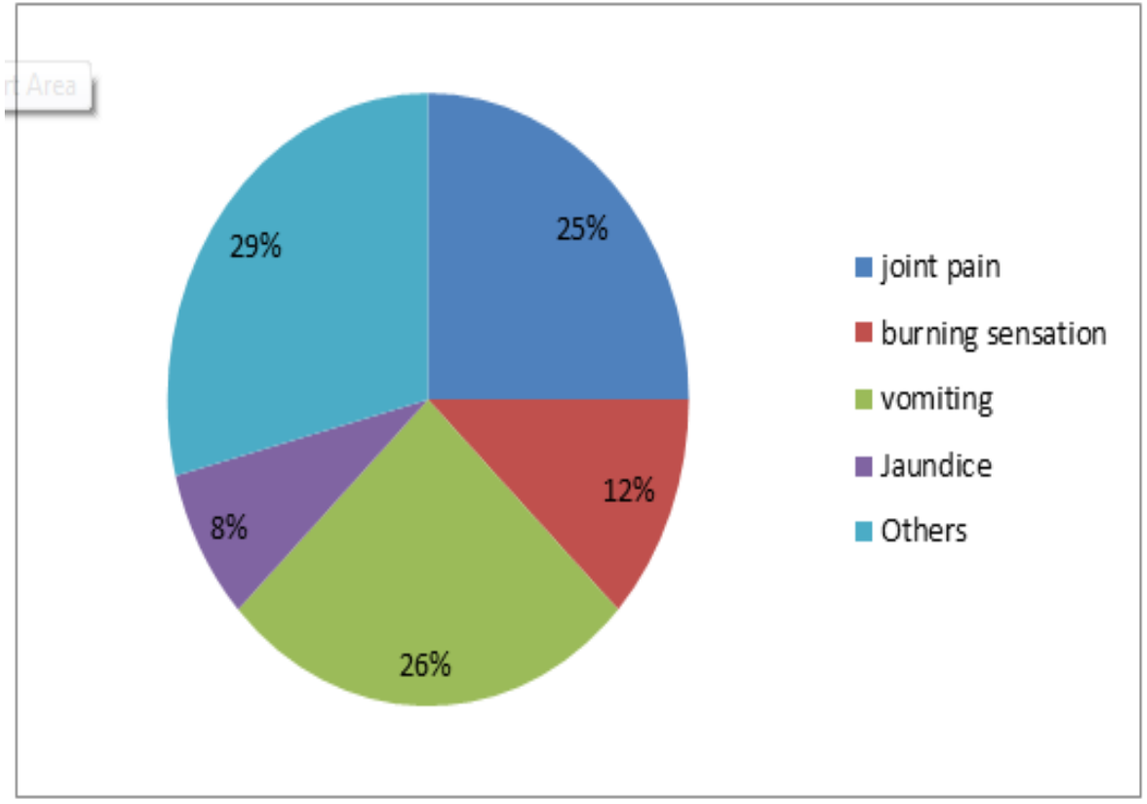
Result: Drug Side Effects Management





Most common side effects reported by patient (2017-2018)

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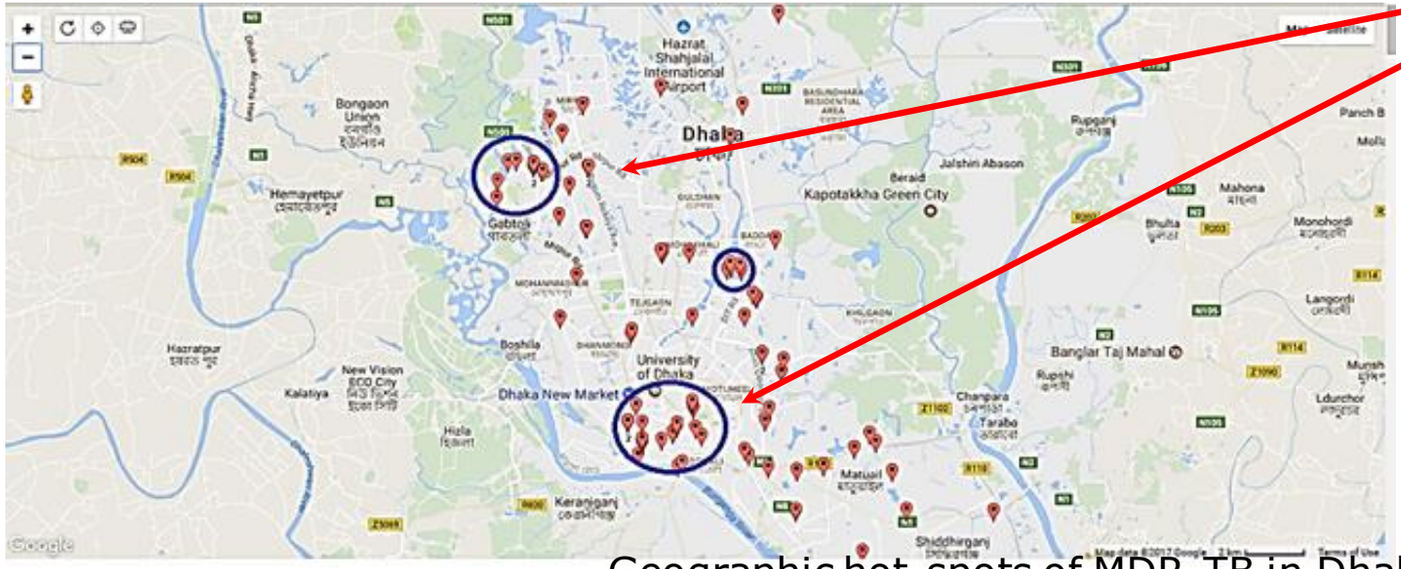
Distribution of DR TB Patient



Geographic hot-spots of MDR-TB in Dhaka

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Challenges and Limitations

- Motivated DR TB DOT providers
- Poor network coverage
- Users are less experienced in using Smartphone
- Regular monitoring and feedback
- Sustainability and ownership by NTP
- TB mHealth is not a diagnostic tool; it allows for monitoring DOT and overall health status of a DR TB patient under community-based treatment

Conclusion

Active monitoring at the central level and with field level cooperation, mHealth can play an important role to ensure patient adherence to DOT and effective monitoring to reduce burden of TB in Bangladesh.

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Acknowledgements

- National TB Control Program, MoHFW Bangladesh
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Thank you

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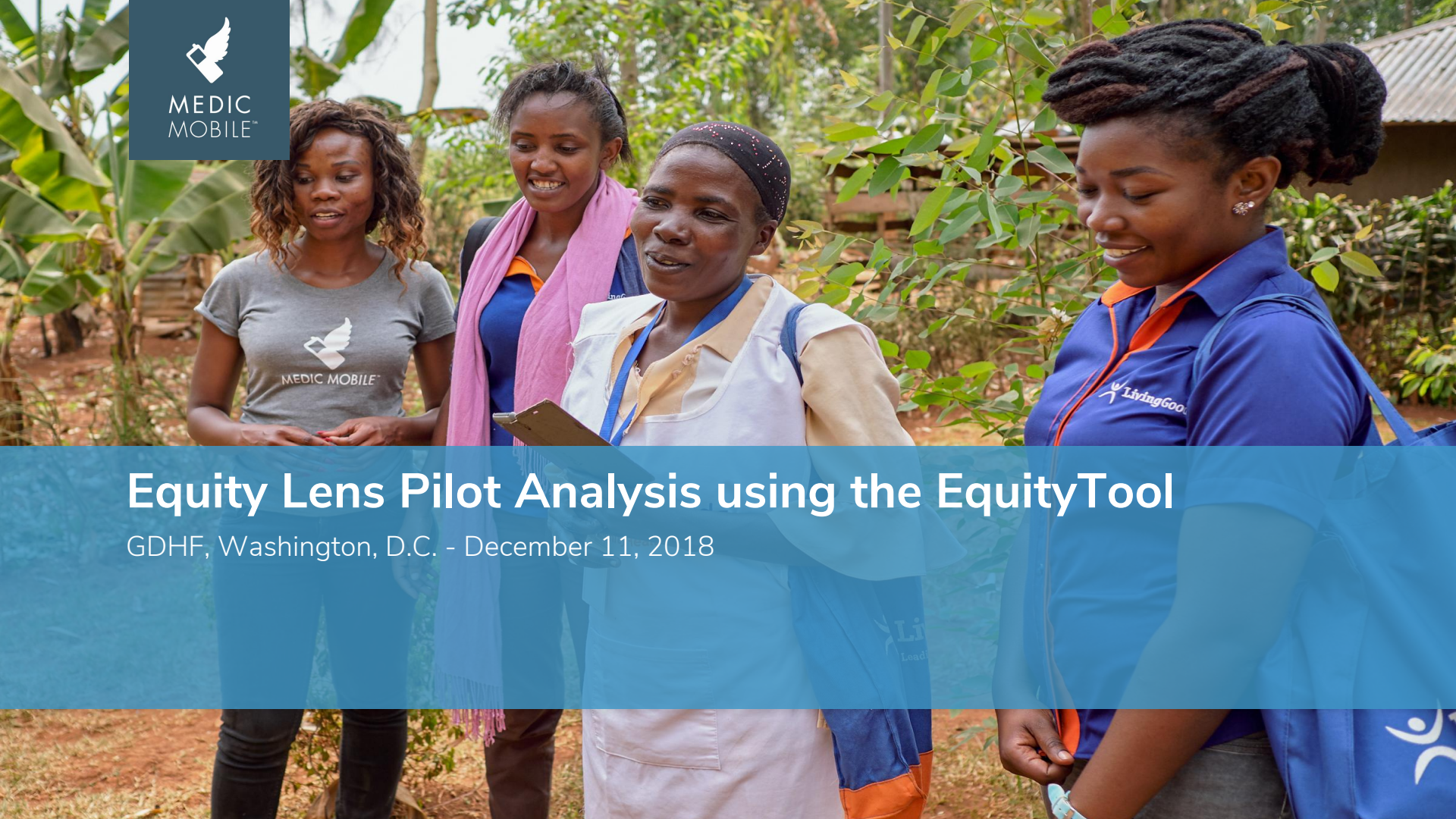


Equity Lens Pilot Analysis using the EquityTool

GDHF, Washington, D.C. - December 11, 2018

1

Overview of Medic Mobile's work

MEDIC MOBILE™

Medic Mobile

We build world-class software for health workers providing care in the hardest-to-reach communities.

MEDIC MOBILE™

Software for Community Health

The Medic Mobile toolkit is free, open-source, and designed with health workers.

23,000+ health workers

~800,000 home visits per month

Equity Lens

How might we ensure that quality healthcare is reaching everyone, especially the most vulnerable and marginalized?

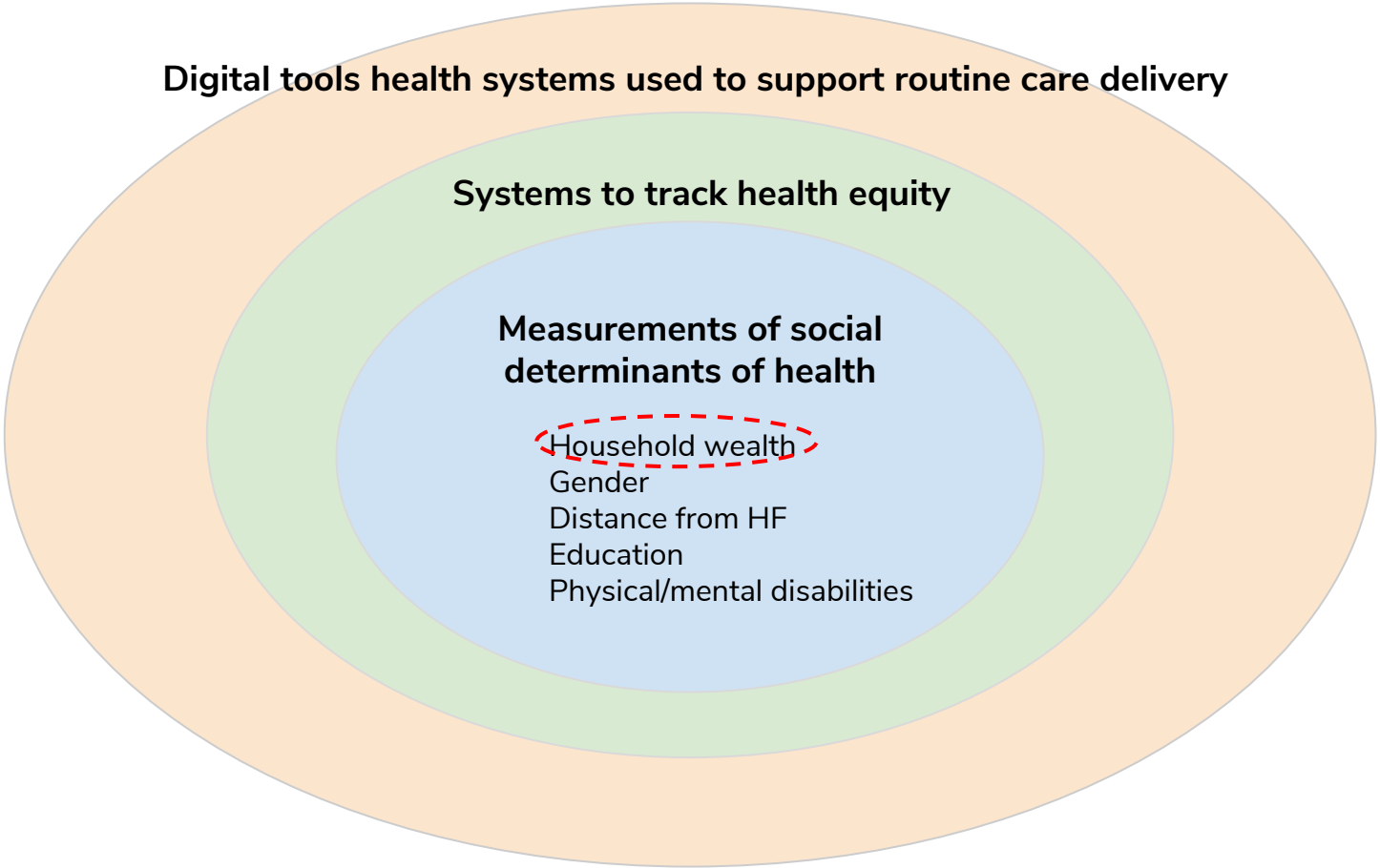
Why measure equity?

1. Even as new models of care supported by our tools are increasing coverage in last-mile health settings, we know **health disparities still exist.**

2. Equity is at the core of **UHC**.

3. Understanding local health inequities has great potential to change **organizational behavior, resource allocation & health worker priorities**.

Our vision for Equity Lens



How to best measure relative wealth?

National-level analysis and initial design insights led us to believe relative wealth may be important. One challenge is that it's hard to measure...

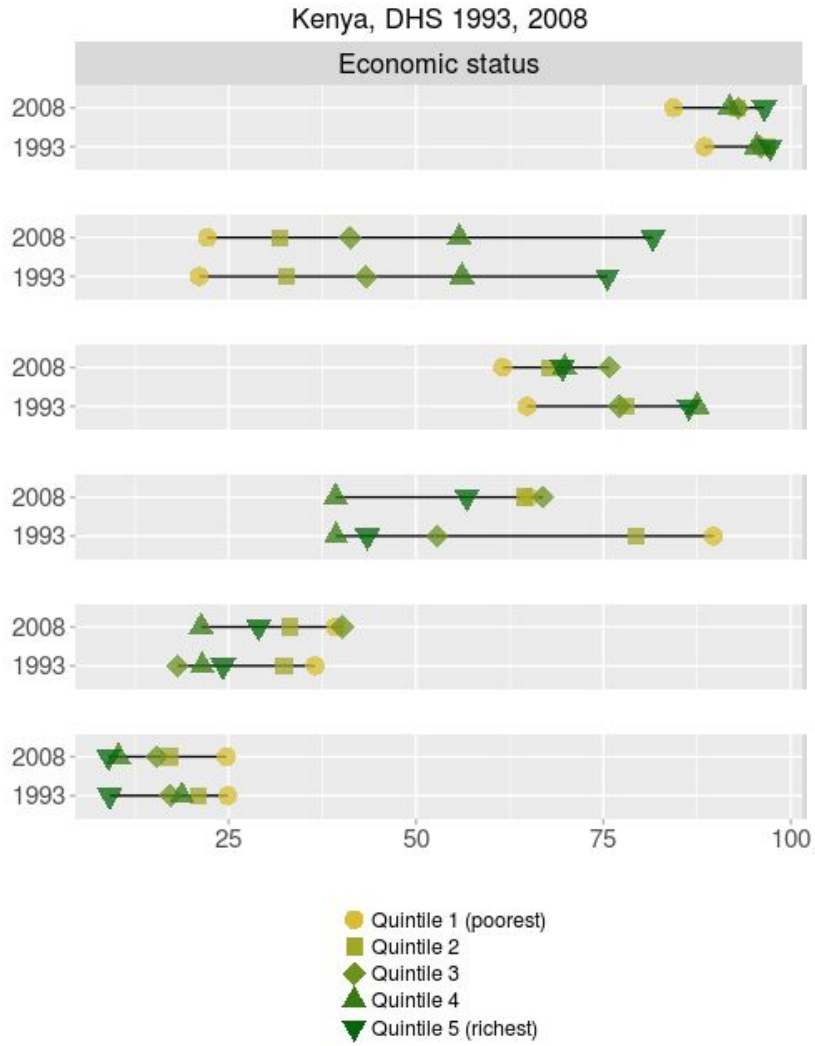
M4M's EquityTool

1. **Evidence-based**
2. **Externally Validated**
3. **Free**
4. **Open source**
5. **Able to be integrated within our digital toolkit**

Kenya

GDP/Capita: $3,200

How does this look at the county and sub-county level?



Antenatal care coverage
(at least 1 visit in the 2-3 years preceding the survey)

Births attended by skilled health personnel
(in the 2-3 years preceding the survey)

Full immunization coverage among 1 year olds

Infant mortality rate
(deaths per 1,000 live births)

Neonatal mortality rate
(deaths per 1,000 live births)

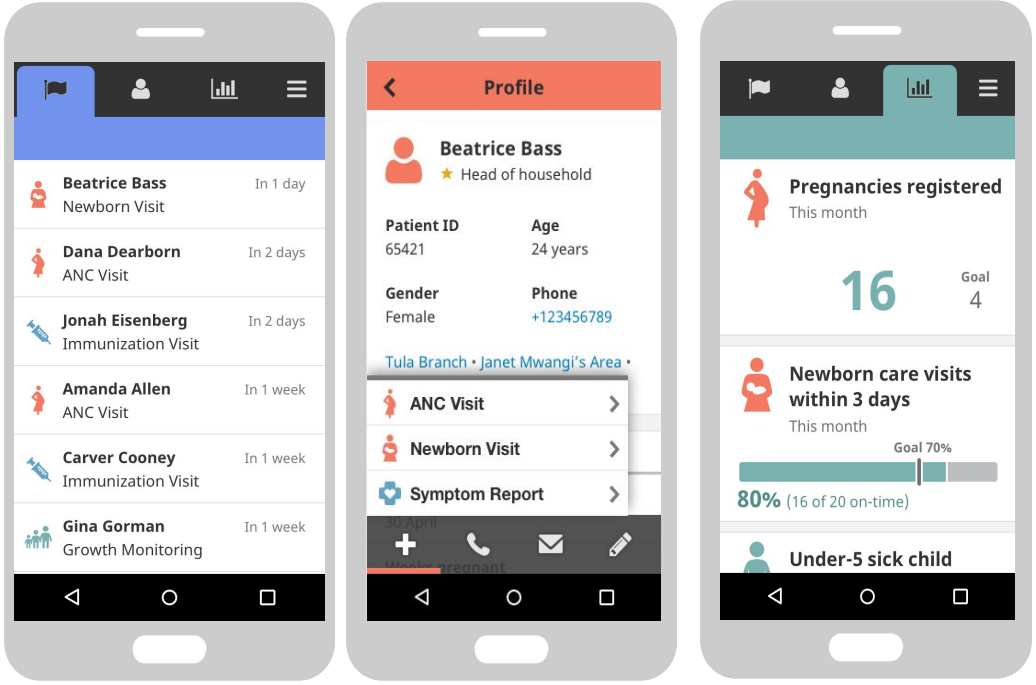
Underweight prevalence in children < 5 years

3

Integrating EquityTool into the Medic Mobile App

MEDIC MOBILE™

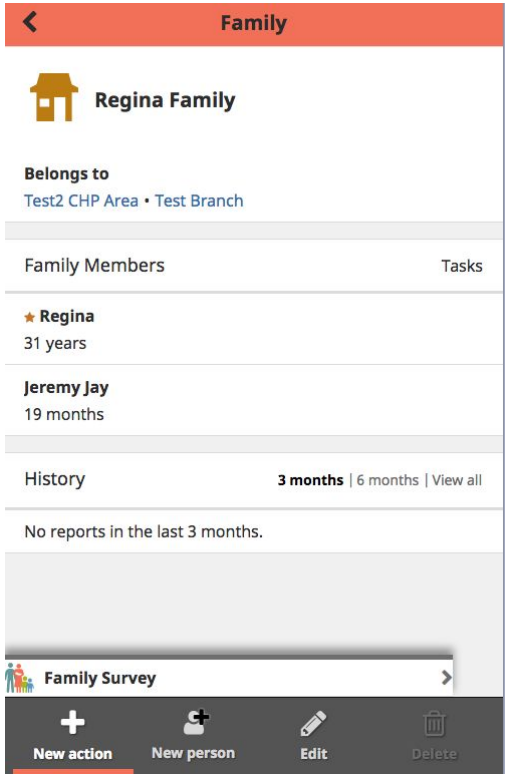
Living Goods CHWs use the SmartHealth App, powered by the Medic Mobile software toolkit

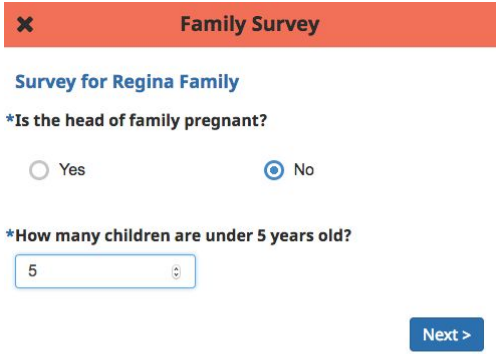


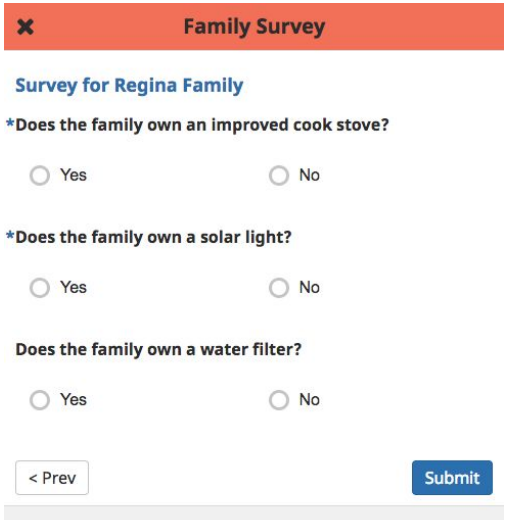
EquityTool Integration

13 Questions from Kenya EquityTool

	Instructions:			
	Below are the questions that should be used. They should not be altered in any way. Option 1 should be coded '1', option 2 should be coded '2' and if applicable option 3 should be coded '3'			
	If you are analysing using SPSS, you should go to the SPSS Syntax tab and follow the instructions.			
	If you are analysing using STATA, you should go to the STATA do file and follow the instructions.			
	If you are analysing using different software, go to the 'Other software' tab and follow the instructions.			
Variable name	**Question**	**Option 1**	**Option 2**	**Option 3 (if applicable)**
Q1	Je, nyumbani muna: Stima	Ndiyo	Hapana	
Q2	runinga/Televisheni?	Ndiyo	Hapana	
Q3	Sofa	Ndiyo	Hapana	
Q4	Kabati	Ndiyo	Hapana	
Q5	Masheni ya kucheza dvd	Ndiyo	Hapana	
Q6	redio	Ndiyo	Hapana	
Q7	meza	Ndiyo	Hapana	
Q8	Saa ya ukutani	Ndiyo	Hapana	
Q9	Sakafu ya nyumba yenu imetengenezwa na nyenzo gani?	Simiti	Udongo/Mchanga	Nyingine
Q10	Je, kuta za nje za nyumba yenu zimetengenezwa na nyenzo gar	Kinyesi cha ng'o	Nyingine	
Q11	Paa la nyumba yenu limetengenezwa na nyenzo gani?	Makuti/Makuti	Nyingine	
Q12	Je, nyumbani munatumia moto wa aina gani kupikia sanasana?	Kuni	Gesi	Aina myingine
Q13	Je, nyumbani munatumia choo cha aina gani?	Hatuna choo / kic	Aina nyingine	
Translated into:	English			
Q1	Does your household have: electricity?	Yes	No	
Q2	a television?	Yes	No	
Q3	a sofa?	Yes	No	
Q4	a cupboard?	Yes	No	
Q5	a DVD player?	Yes	No	
Q6	a radio?	Yes	No	
Q7	a table?	Yes	No	
Q8	a clock?	Yes	No	
Q9	What is the main material of the floor of your dwelling?	Cement	Earth, sand	Other
Q10	What is the main material of the external walls of your dwelling?	Dung/mud/sod	Other	
Q11	What is the main material of the roof of your dwelling?	Thatch/grass/ma	Other	
Q12	What type of fuel does your household mainly use for cooking?	Wood	LPG/Natural gas	Other
Q13	What kind of toilet facility do members of your household usually	No facility/bush/fi	Other	







EquityTool Integration

- Deployed at 3 Living Goods Branches in Kenya
- 4-month data collection phase
- 90% coverage (41,280 Households)

4

Equity Lens Analysis Approach

Equity Lens Analysis Questions:

1. What are the **characteristics of the households** in our sample?
2. **How often** are targets for **desired health outcomes** being reached?
3. **What factors predict** whether or not a **desired health outcome** will be achieved?

Health Outcomes of Interest

iCCM

- Time since symptom onset at assessment
- Treatment confirmations for diarrhea, pneumonia & malaria
- Assessment follow-ups (confirmed & on-time)
- Referral completion

ANC

- Early ANC Registration (within 1st Trimester)
- # of ANC Visits completed during Pregnancy
- Facility-based delivery

PNC

- # PNC Visits completed
- 1st PNC Visit on-time

Strategies for interpretation

If an organizational target was set, was the target met for this health outcome overall?

For a given health outcome, was an inequity observed?

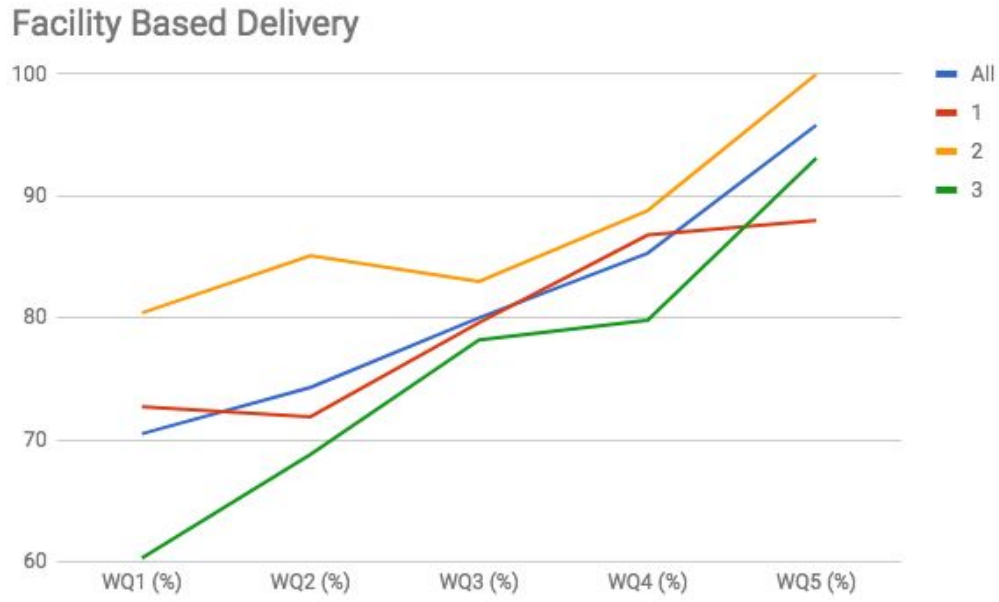
4

Snapshot of Preliminary Results

Patterns of health inequity

Meeting target and no inequities	**Meeting target and inequities**
Not Meeting target and no inequities	Not meeting target and inequities

Meeting target, strongest inequity measured



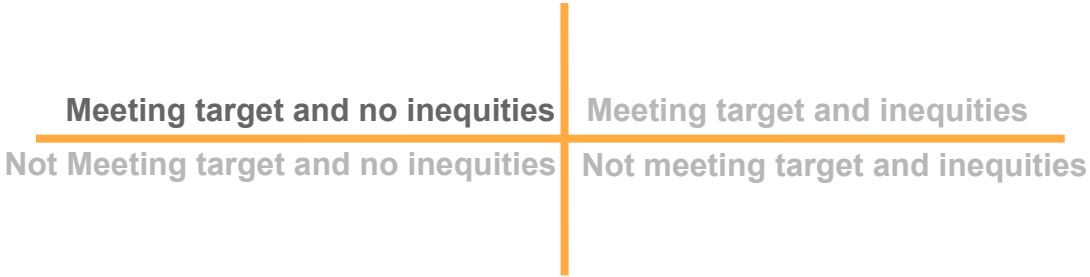
2014 DHS National average: 61%

LG Kenya equity pilot: 78%

2014 DHS WQ1: 30%

LG Kenya equity pilot WQ1: 70%

Patterns of health equity



First PNC Visit on-time saw no inequities present within the 3 LivingGoods branches.

According to national DHS averages (2014), there is clear inequity present.

- **53% of women overall** had 1st PNC Visit on-time
- **31% of women in lowest wealth quintile** had 1st PNC Visit on-time
- **74% of women in highest wealth quintile** had 1st PNC Visit

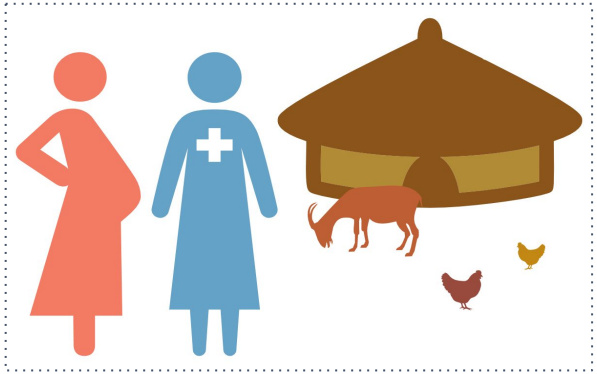
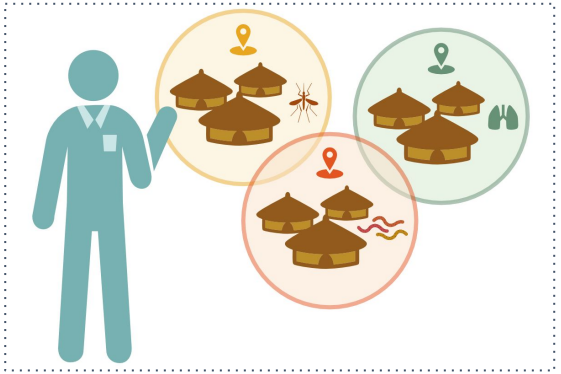
5

Implications & Next Steps

Product Implications & Next Steps

1. **Fine-tune analysis & findings**

2. **Expand Equity Lens Family Survey to more districts & deployment sites**
   - LG Uganda (>4,000 health workers)
   - Muso Mali (400 health workers)

3. **Brainstorm possible intervention types and product considerations**
   - Adjust CHW behavior with new or different activities based on WQ
   - Incentivize activity via new targets - “Equity Scores”
   - Make WQ information available to various parts of the app

How can in-app WQ data to strengthen our primary workflows?