

**Using mobile  
phones to  
improve quality at  
the point of care**

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# Objectives

- Describe the role of clinical protocols in low-resource settings.
- Explain how mhealth tools are being used to improve quality of care at point of care
- Provide lessons learned and recommendations for future efforts

# Why do we talk of mhealth now?

- More than 506 million mobile phone subscribers in Africa
- Tanzania has more than 25.6 million mobile phones
- Current generation of mobile phone can handle more complex functions than just a call and SMS

# The M of mHealth: What does a phone do?



- ✓ send and receive voice data
- ✓ send and receive alphanumeric data
- ✓ run programs using processing
- ✓ store data, voice
- ✓ take and store video or photos
- ✓ show video or photos
- ✓ use peripherals (diagnostics)
- ✓ know where it is (GPS)

# Why is mhealth important?

- mHealth has the potential to support address the following issues:
  - Disparities in accessing standard health care services.
  - inadequacies of the health infrastructure within countries (flow of information and supply chain, voucher for mosquito nets)
  - Referral tracking system
  - Health communication eg sms messages.

# A summary of main categories for mHealth solutions in Tanzania

- Advocacy/health education messages e.g. Wazazi nippendeni, FP messages
- Service provision – decision support tools for HW/CHW to provide quality services without skipping the information) e.g. TB diagnosis, referral tracking, maternal app
- M&E data collection tools e.g ODK
- Tracking supplies e.g ILS Gateway,
- Mobile banking money transfer e.g MPesa

# Why protocols?

- Clinical standards are used to improve and maintain quality of care globally
- Guide health workers through diagnosis, treatment and counseling
- Typically reinforced by training and supervision

# So what is the problem?

The problem is the protocols are not used correctly

- HW do not accurately follow protocols
- Expensive to change
- HW embarrassed to use a book in front of patients



Haitham M. Ahmed, Marc Mitchell, Bethany Hedt, National implementation of IMCI: Policy constraints and strategies, *Health Policy* (2010)

# Why are protocols important?

- Example: Malnutrition
  - ✓ Acute malnutrition is an entirely treatable condition
  - ✓ Due to improper treatment case fatality rates at 20-30% vs 5% with proper treatment
- Example: cIMCI
  - ✓ Estimated nearly 50% of health workers did not make appropriate referrals of sick children

# What D-tree does

- Provide decision support tools for use by frontline health workers
  - ✓ Design, Test and Deploy applications
  - ✓ Partner with MOH and other NGO partners
- Focus areas:
  - ✓ Maternal and Child Health
  - ✓ Chronic Disease
  - ✓ Facility and community health workers

# eIMCI

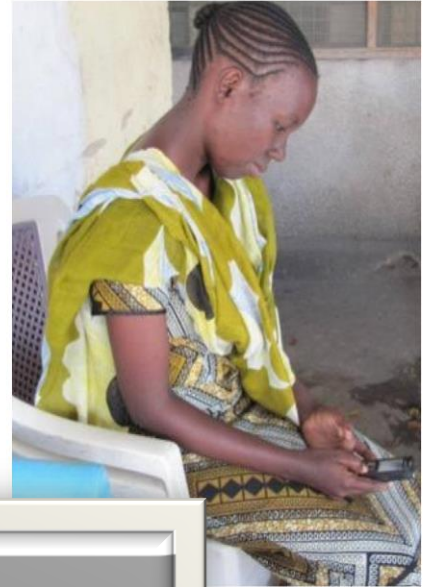
## 18 Health Centers in rural Tanzania n = 1221

1. Adherence to correct protocol (paper vs. eIMCI)
2. Correct diagnosis (paper and eIMCI vs. expert)
3. System performance (time, consistency)



# Community Health Workers

- Over 300 HBCPs in Dar using mobile phones to provide care
- Reminder option for pending referrals and visits to clients
- Supervisors Update and reminders for overdue visits (SMS)



Title	
Jina la Mteja	ANNA JOHN
Namba ya Kaya	25
Kijiji/Mtaa	MBAGALA
Mteja aliyetembelwa yupo?	Ndiyoc
Ana miaka mingapi?	
Options	
Back	

# eFamily Planning

- Guides CHWs through FP algorithm based on evidence-based tools
- Enables CHWs to COUNSEL, SCREEN, PROVIDE, REFER (FP, STI and HIV/AIDS services)
- Helps clients to make best contraception decisions based on individual desires and medical history



# Maternal health

- **Facility-based and community based antenatal care, postpartum care and neonatal protocols**

## The protocols focus on:

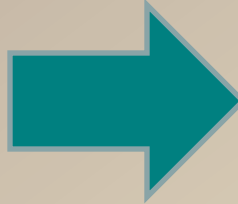
- Identifying risk factors
- Screening for danger signs, complications
- Monitoring lab results to ensure all tests are done (BP, HIV, syphilis, Hb etc)
- Encouraging facility delivery
- Electronic patient records; mother-baby pair tracking
- SMSs to pregnant and postpartum women to improve attendance
- Comprehensive counseling including individual birth planning, nutrition and family planning.



# Maternal Health - examination

Examine Client's breasts for abnormality. Are any of the following present?

- Pain
- Discharge
- Lumps
- Ulcers
- Fungal infection
- Flat nipple
- Other abnormality



**TREAT: Prescribe anti-fungal cream. Instruct client how to administer**

OK. Ready to Continue.

# Nutrition in Zanzibar

- Application guides nurses through: screening, enrollment, appetite test, examination, and counseling
- Provides cues for referral and discharge; warns of missed appointments
- Health workers can register CHWs and send SMS reminders for missed appointments to mothers and CHWs



# Saving Mothers' Lives: Maternal Health



**> 50% of births are at home**

**when transfer to hospital is needed there are 3 delays:**

- The decision to seek care
- The transfer to a facility
- Treatment at the facility

# Saving Mothers' Lives: Maternal Health

- **Screening pregnant mothers** to identify risks or danger signs
- **Establishing community-based referral systems** to transport women in labor
- **Coordinating payment of transport** to health facilities and hospitals using mobile banking
- **Following up with the family within 2-5 days** after delivery to ensure a continuum of care, including post-partum and post-natal care

# Lessons learned

- Fast pace of technological change
- Change Management essential at all levels
- Continuous support needed in use of data at all levels
- Field refinement is critical
- Users must feel application supports them
- Phones can improve prestige and self-esteem of health workers

# Opportunities (and threats)

- Opportunities

- ✓ Low cost smartphones
- ✓ Telco partnerships possible on global scale
- ✓ Point of care diagnostics
- ✓ Content libraries being developed for applications and multi-media
- ✓ Integration with other applications
- ✓ Social media

- Threats

- ✓ Lack of intermediate funding
- ✓ Lack of power sources in hard to reach areas

# Recommendations

- Involvement with mHealth working group in each country
- Look for existing projects to leverage
- Adapt each project around the in-country m/eHealth ecosystem
- Partner with MOH and consider the entire health system
- Plan for integration with HMIS from the start
- Plan for scale
- Leverage mFinance, mAgriculture, other e/mDevelopment initiatives

# Thank you!

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