Royal Tropical Institute

GFMER "MHealth4SRH" 2013
Online training course Mobile Phones for Sexual and Reproductive Health
Weblecture, April 2013

Setting up an mHealth project

mHealth for maternal and newborn health in low-resource settings, Sierra Leone

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Medical Research Centre

Government of Sierra Leone

University of Sierra Leone

TEXT TO CHANGE

Royal Tropical Institute

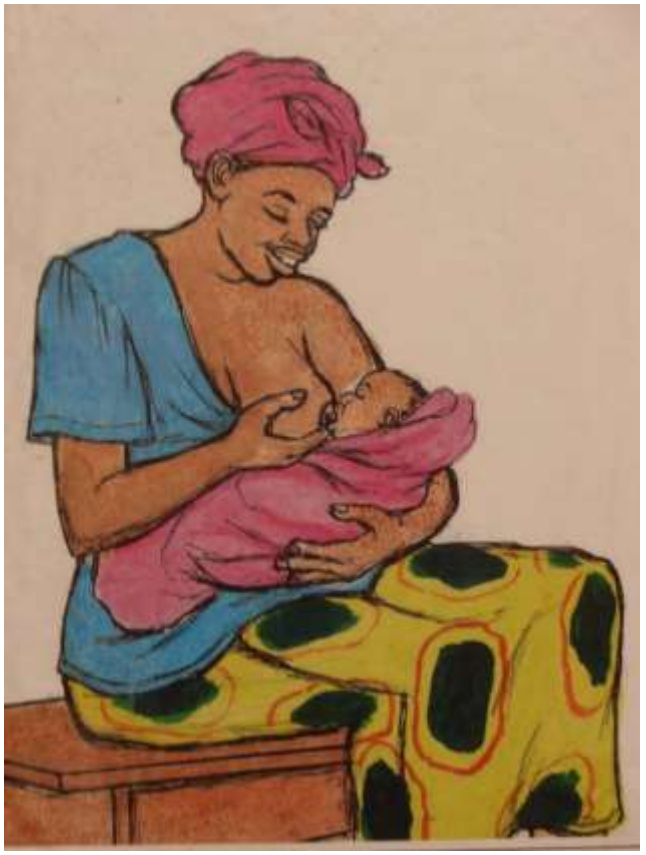
Mannion Daniels

This research was carried out and reported on by:

- Ministry of Health and Sanitation, SL
- Medical Research Centre, SL
- University of Sierra Leone
- Royal Tropical Institute (KIT), NL
- Text to Change, NL
- Mannion Daniels, UK

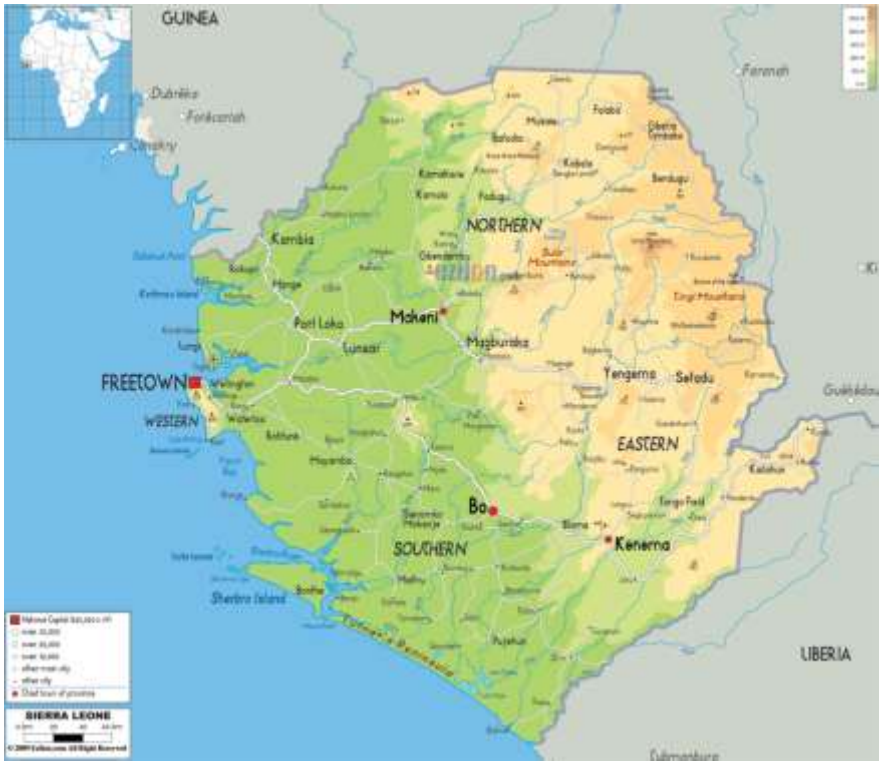
Overview

- Sierra Leone
- Project objectives
- Preparatory activities
- Formative research issues
- Some research outcomes



Sierra Leone

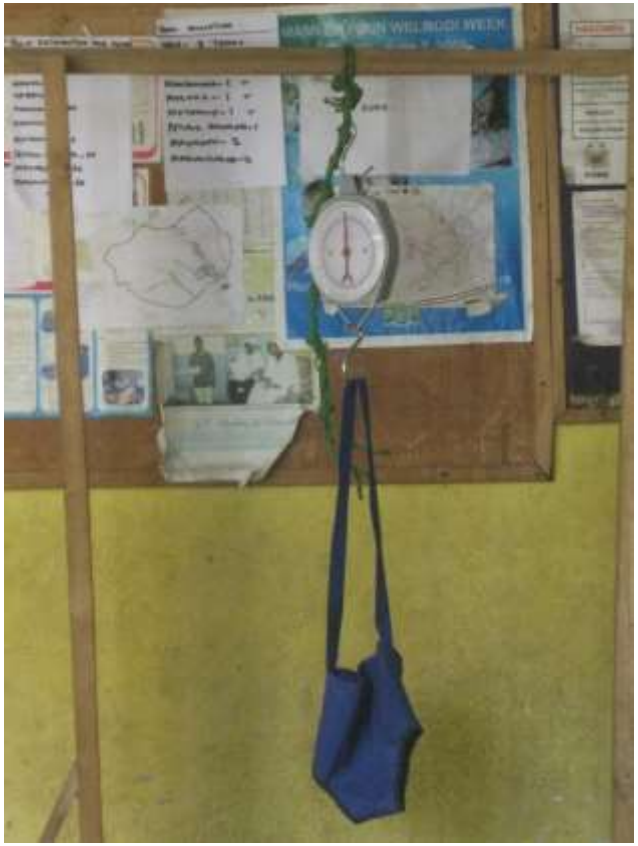
- Pop 6.4m (2009)
- 70% <poverty line
- HDI rank 180/187
  (UNDP 2011)
- Life expectancy 47yrs
- Literacy 41% (F<M)



http://www.ezilon.com/maps/africa/sierra-leone-physical-maps.html

Sierra Leone – fragile health system

- Rebuilt after civil war >> progress, but challenges
- Free Health Care Initiative 2010



Sexual & reproductive health

— Govt priority

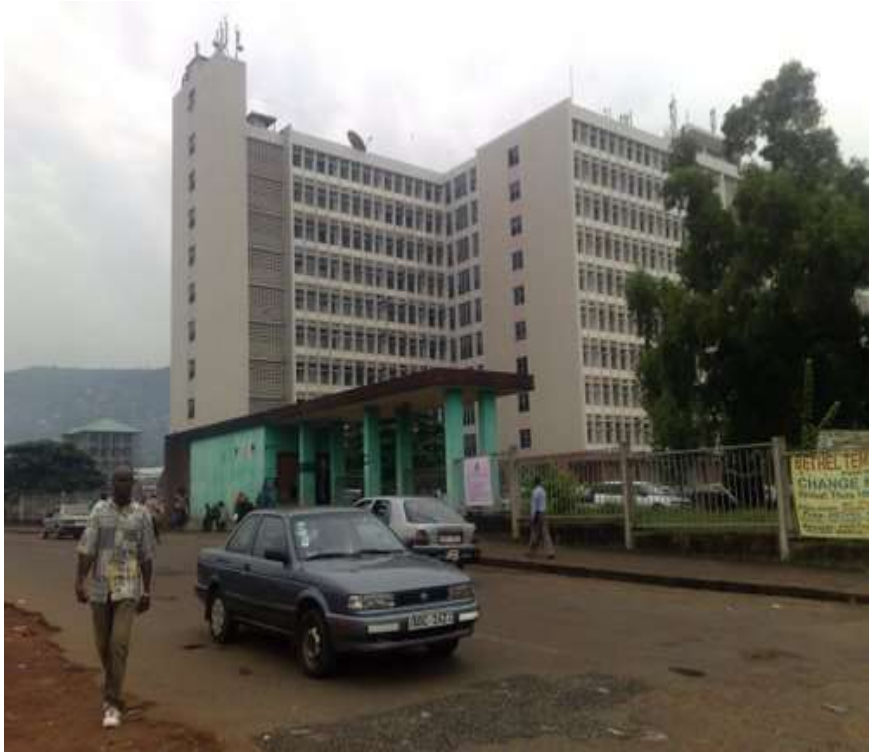
- Maternal mortality 970/100,000
- Skilled attendance @birth 42%
- FP 8%, unmet need 36%
- Health workers overwhelmed

Sierra Leone – expanding mobile networks

- 4 mobile network providers (GSM)
- Mobile penetration rate 34%
- Coverage ?

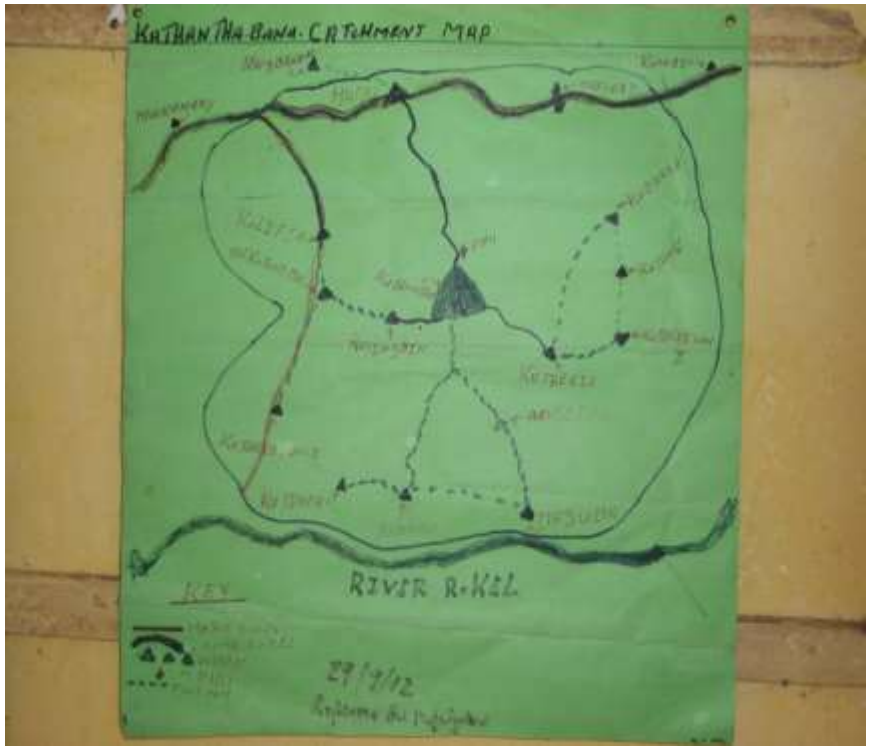
MoHS: seize opportunity

- Context-related barriers: policy, cost, demand?, infrastructure (WHO 2010) >>Research



Project objective

Improve maternal and newborn health (MNH) in Bombali district via mHealth interventions



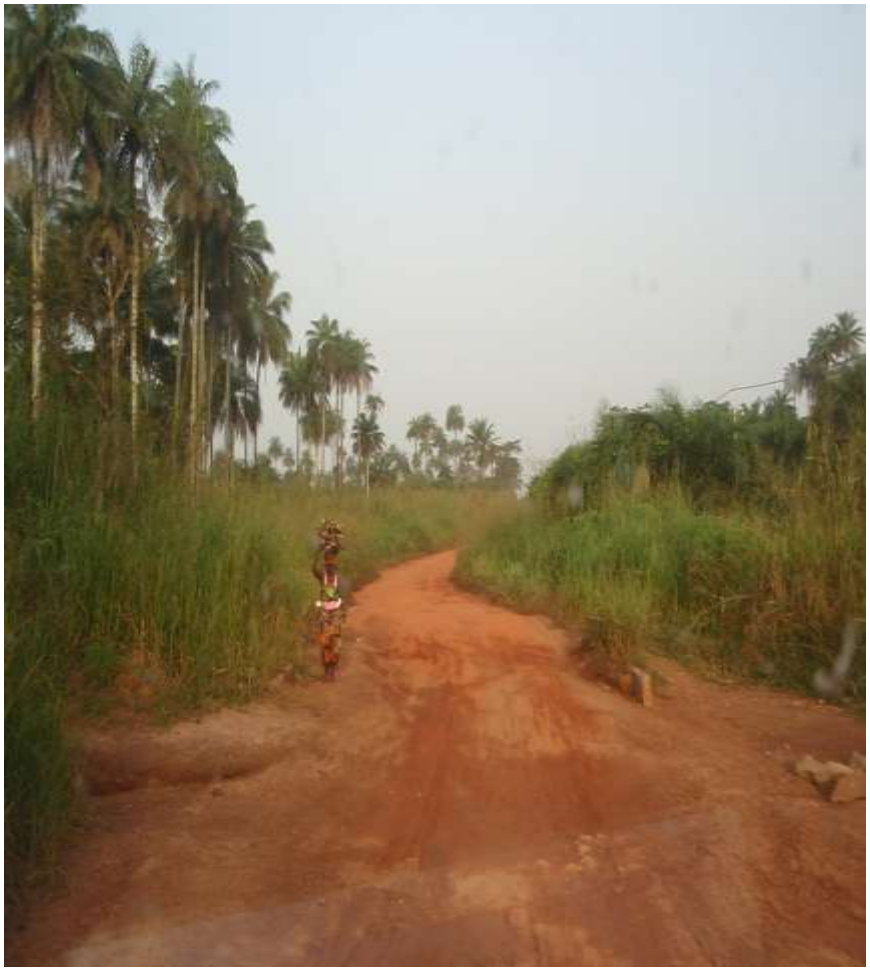
Outcome measures:

- Service delivery
- Service uptake
- Health outcomes

Project main components

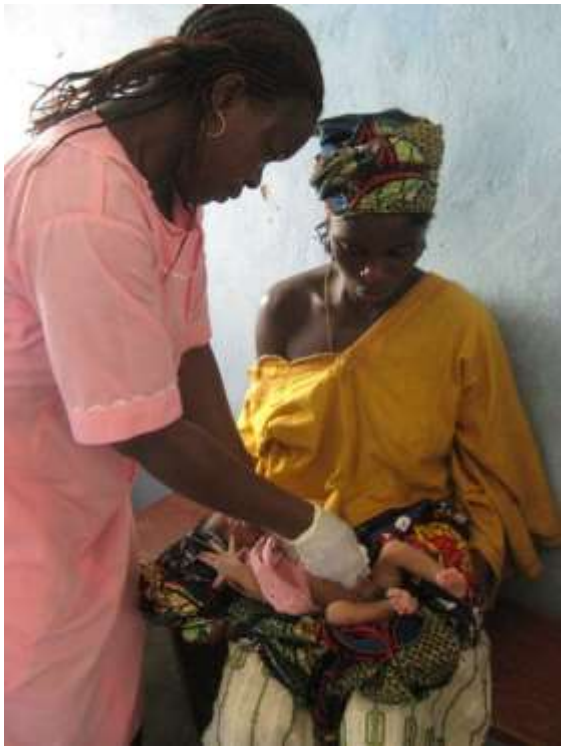
Components:

- Feasibility stud (2010-11)
- Intervention (2012-13, ongoing)
- Impact research (2012-13, ongoing)



Project preparatory activities

1. Literature review
2. Inventory current mHealth initiatives
3. Engage with mobile network operators
4. Engage with ICT/communications regulatory authority
5. Stakeholder meeting involving also private-for-profit parties
6. (national) mHealth advisory committee established

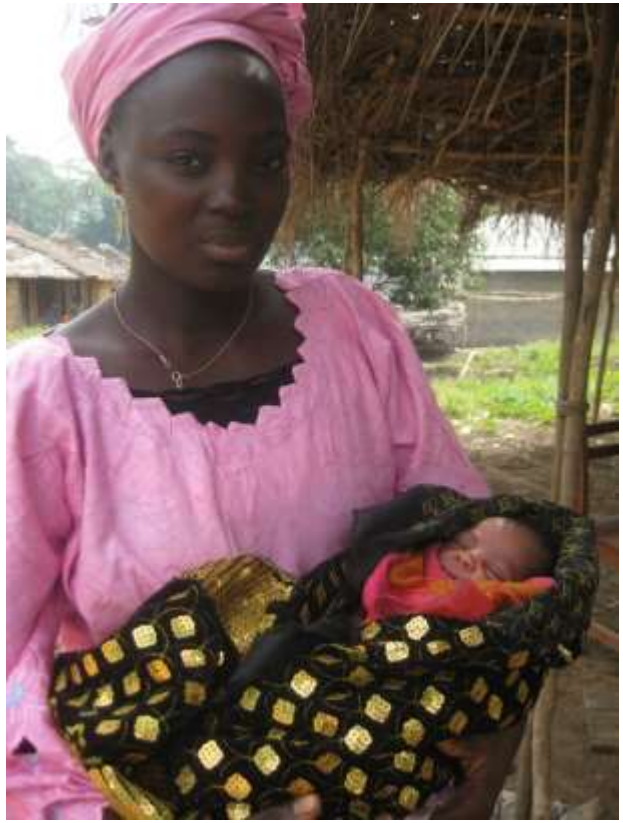


Project intervention

1. Improve HW-HW communication (virtual private network; voice, texting)
2. Improve HW to client monitoring/communication
3. Improve client to facility communication (using clients' own phones)
4. Improve client access to information (national toll-free information line)

Feasibility study – rationale for formative research

0. It's not about phones…
1. Hype vs. evidence?
2. Feasibility in context?
3. Build local capacity



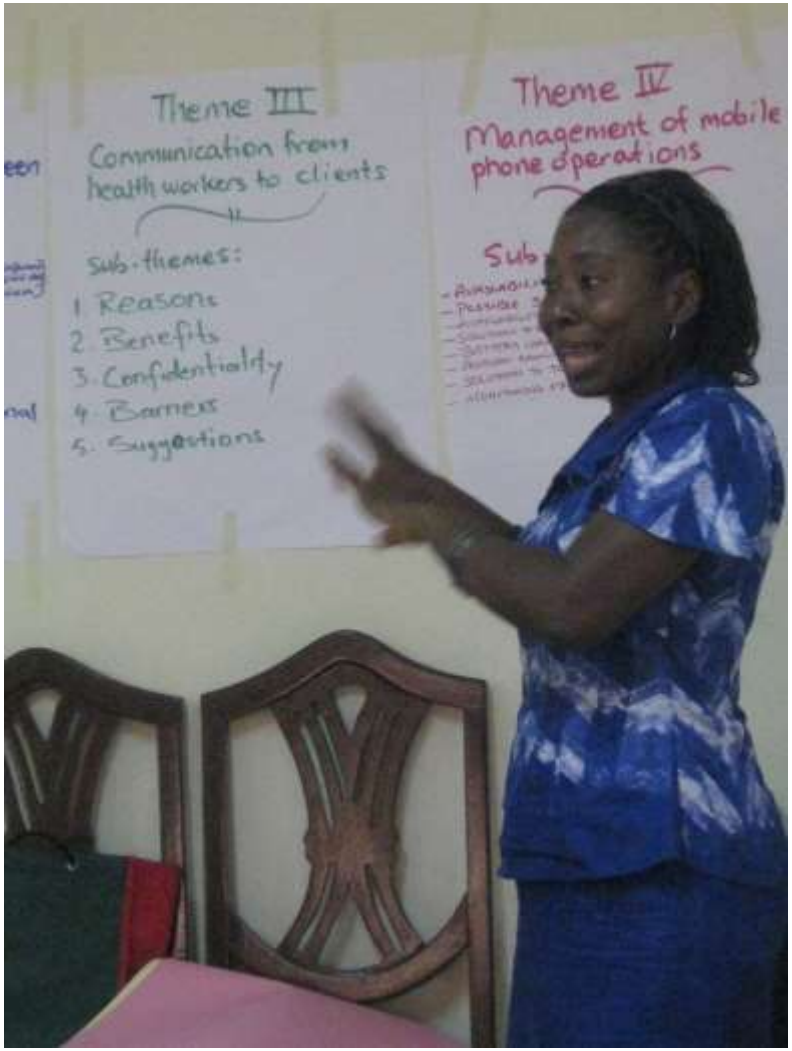
Feasibility study (2)

Feasibility study re. mobile communication to improve MNH in resource-poor setting (2010-11)

Focus

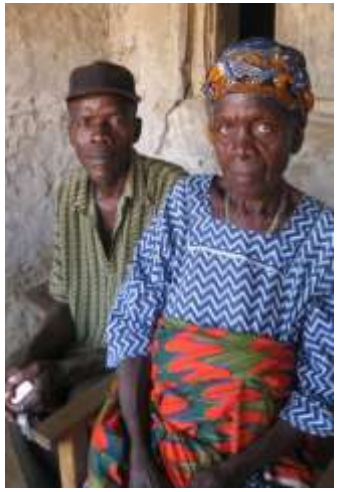
- Health worker perspectives/ behavior
- Client perspectives/behavior
- HW-client communication
- Health systems: risks, preconditions

+Building local research capacities



mHealth domains framework

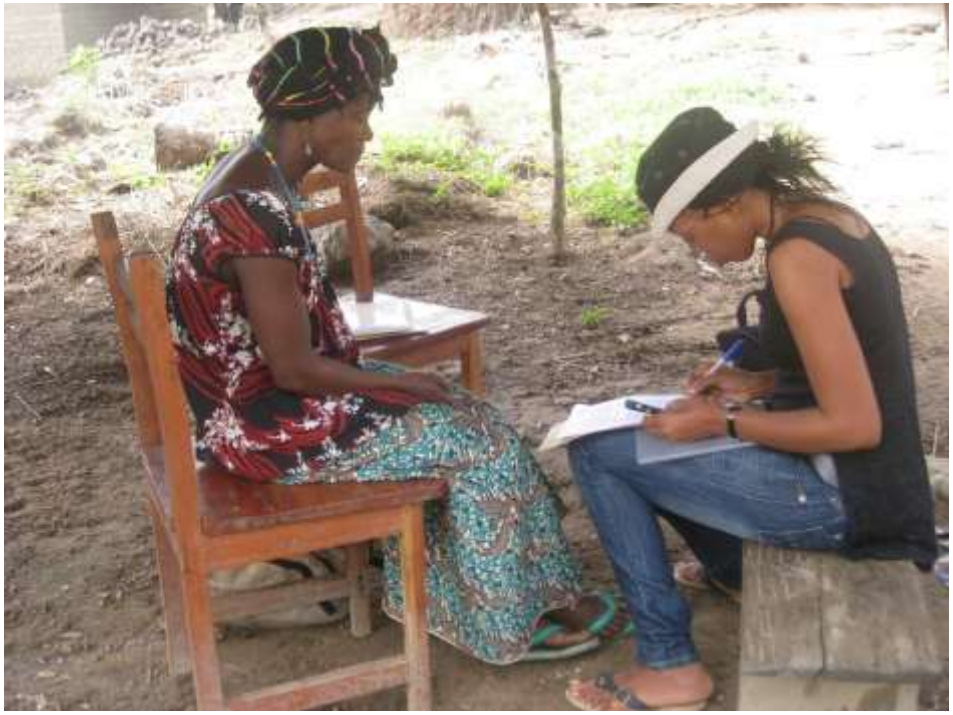
Health service domains *(w/client interaction)*	1. Education and awareness
	2. Point-of-care support
	3. Client monitoring
	4. Emergency medical response system
	5. Health financing
Other health system domains	6. Disease and epidemic outbreak surveillance
	7. Health management information system (HMIS)
	8. Human resources for health (HRH) management, supervision and professional development
	9. General coordination



(Source: own elaboration based on inputs from Mechael et al., 2010; Vital Wave Consulting, 2009; and Sloninsky, 2008)

Study design

- Feasibility study using qualitative methods
- 2 districts (other than intervention district)
- Literature review
- Interviews+focus groups
  - Health workers
  - Health managers
  - Health service clients
  - Community members (M/F and youth)
  - Key informants (community, national)

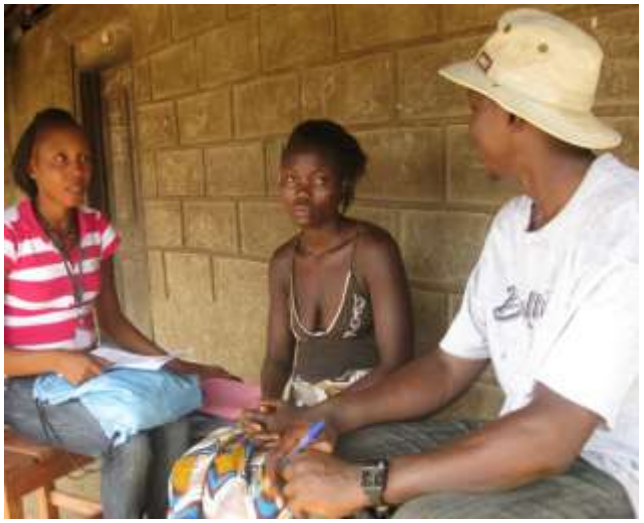


Key research issues

- Mobile communication behaviour (health workers and clients) incl. hardware, logistics, cost, technology, perceived benefits
- Aspects around mobile network providers: coverage, reliability, unit cost, corporate social responsibility, inter-operability, ICT regulations, consumer rights
- Risks and preconditions associated with integration of mHealth into health system

Findings: Health workers (N=18)

- All use **mobile for work**
  - General coordination
  - Referrals, emergencies
  - Supply chain management
  - Consult colleagues, supervisor
  - Some communication w/clients

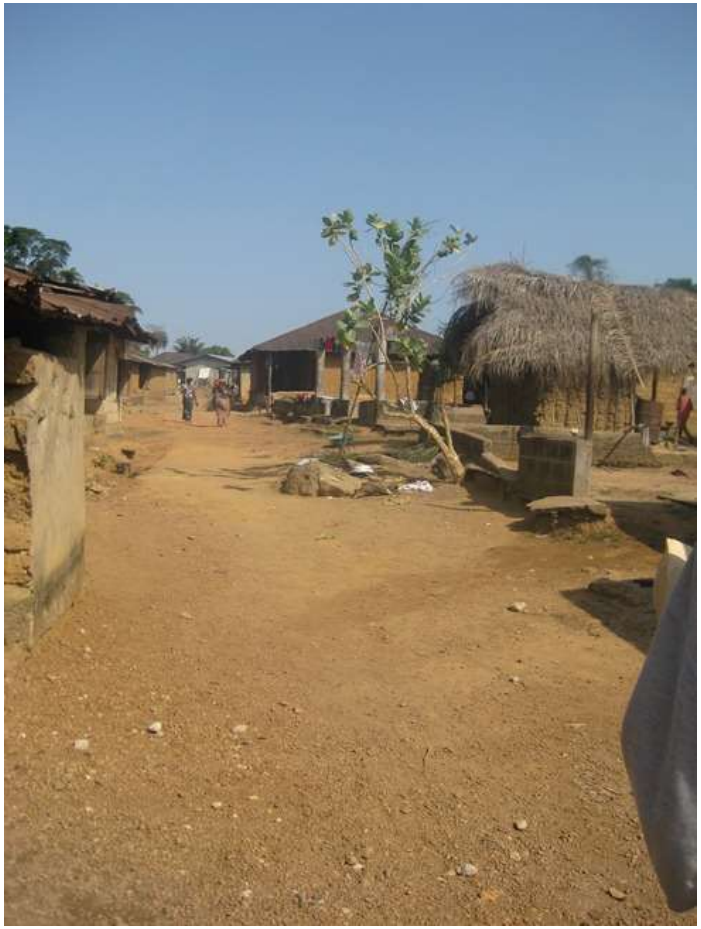


*"I also use [the phone] to ask advice of how to handle a case that I am not too familiar with. Like a pregnant woman came, unable to breathe well, so **I called my boss on the phone** (…); she gave me advice as to how to go about it."* (Female health worker, Kenema)

Findings: Health workers (2)

- All use voice, **50% use texting**
- VPNs set up, but not functioning well
  → use private phone, pay

"The more calls you make the more credit you will have to buy … it is a great sacrifice." (Female health worker, Western Area)



Findings: Health workers (3)

- Barriers – external: coverage; low literacy of clients and of some community HW e.g. trad. birth attendants
- Barriers – internal:
  - Access to duty phone (if VPN in place)
  - Access to battery charging (go solar?)
  - Access to airtime credit (as long as staff self-paying)
- High expectations re. mHealth!

"Sometimes batteries are changed or stolen at the tele-centre when sent to charge."
(Health worker focus group, Western Area)

Findings: Female clients (N=16)

- One-third owns mobile
- One-third accesses phone of relative
  >permission, dependency
- One-third: no access
  - All users use voice, no texting
  - So far never used for health-related issues

Findings: HW-client communication

Reasons

- Client follow-up e.g. during pregnancy
- Appointment (reminders)
- Treatment reminders
- Referral

"I expect them to call me and check on my general welfare and to encourage me to visit the clinic frequently, so that the position of my baby can be checked on a regular basis." (Female client, Kenema)

Findings: HW-client communication (2)

Reasons (contd.)

- Benefits for men (and sensitizing men)

"…*the benefit the men and the community as a whole get is that their wives and children would be treated well and problems of complications that pregnant women envisage during pregnancy will be solved.*" (Male community member)

Findings: HW-client communication (3)

All prefer voice, not text

- Illiteracy rates
- Better interaction
- Texting: delays

"I do not receive text messages because I do not know how to read. I can only receive calls. I cannot even make the call myself. My brother usually helps me out."
(Female Kenema client)

Findings: Suitable contents

- Most SRH issues OK: FP, pregnancy, ANC, …

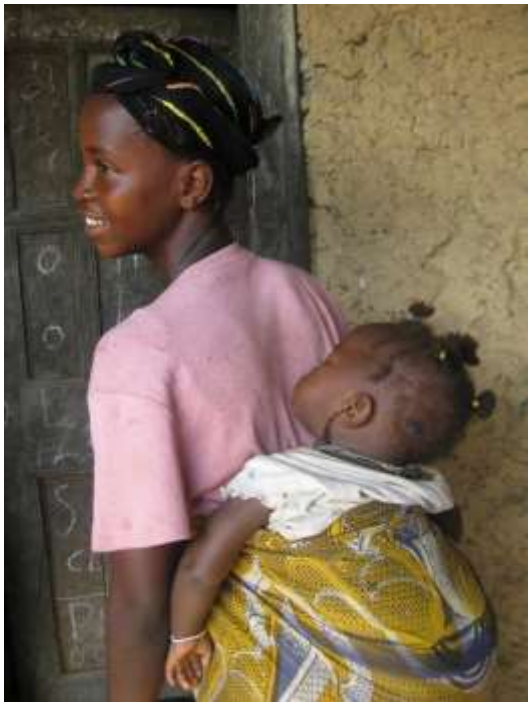
  *"It will be very helpful to **receive information on family planning especially for teenagers** who do not have the opportunity of discussing such issues. Even the shy ones can be informed via the mobile phone."*
  (Female comm. key informant, Western Area)

- Uncomfortable topics: STIs, HIV, test results

  *"The issue of HIV-AIDS and abortion, I find these were **very difficult to discuss on a phone** with a health worker for fear of scandal."*
  (Female client, Kenema)

Findings: Confidentiality

- HW keeping confidentiality?
- Location, others nearby?
- 'Phone sharing', how identify client?
- Ethics: HW to only call client after consent



"*I have observed women patients in hospital who label some female nurses as gossips. They prefer talking to the male nurses.*" (Male community key informant, Western Area)

Findings: Gender issues

- Women's 'secrets' e.g. husband unaware of FP use
- Husband's jealousy

"…some women did not get the consent of their husbands to become [FP] clients, and the use of a phone might cause problems from the husband." (Community key informant, Western Area)

"My husband is jealous a lot, so he checks my phone all the time for other numbers of people he says are my boyfriends." (Female client, Kenema district)

Findings: Perceived benefits

For clients

- Improved health awareness
- Better HW-client communication
- More responsive services, esp. emergencies, MNH

Findings: Perceived benefits (2)

For health workers

- Efficiency
- Diagnosis, case management
- Improved surveillance
- Better supply chain, HMIS
- Improved working relations

But…
"…[whenever you receive a call] *you are sure to be disturbed from whatever you are doing.*" (Female health worker, Western Area)

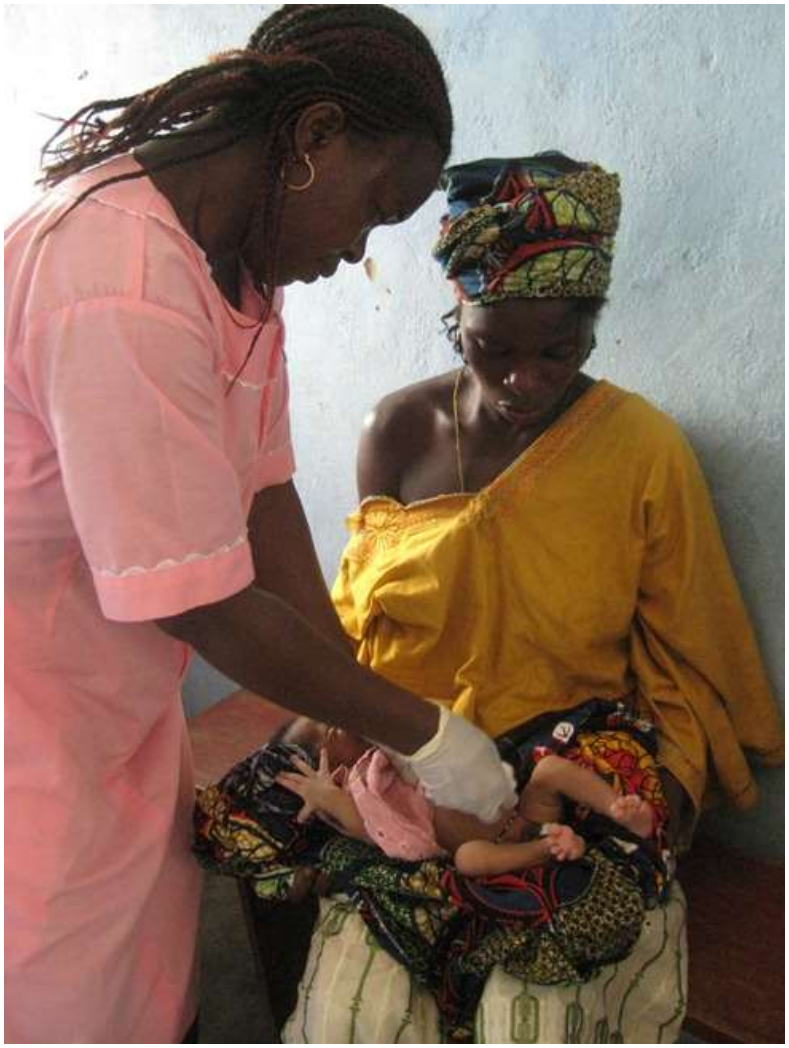
"It saves my energy and even that of the client. Otherwise I will walk to see the clients or the client walk to see me. It also saves my time because communication is quick and prompt." (Female health worker, Western Area)

Findings: Perceived benefits (3)

Health status

- Reducing (maternal) mortality, save women's lives

"It has reduced maternal mortality rate by giving emergency response especially in the case of calling for an ambulance for referrals". (Male health worker, Kenema)



Acknowledgement 2

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