CORE Group Fall Meeting 2010
Concurrent Session: *"mHealth and CCM/Community Child Health: Charting the Way Forward"*
Tuesday, September 14, 2010 from 11:00 am – 12:30 pm
CORE Group facilitators: Ann Hendrix-Jenkins and Shannon Downey

Description
This working session brought together experts and those interested in community child health programs (including community case management of sick children (CCM)); operations/implementation research; and/or mobile technologies for health (mHealth). Participants outlined community child health programmatic barriers and challenges, and creatively devised mHealth solutions in small groups. Each group proposed at least one idea and assessed the feasibility.

MHealth/Information technology and community health experts engaged in dialog to enrich understanding of each other's perspectives. Participants generated specific, promising mHealth[1] applications for use in Community Child Health/ Community Case Management[2] (CCM) programs.

Participants self selected among small groups that looked at specific critical steps for CCM programs and brainstormed around the related program barriers and then possible mHealth solutions.

Small Group Work Results

1. Group I: Assigned to devise mHealth applications to facilitate the following steps:
   - Caretaker correctly recognizes malaria/pneumonia/diarrhea/malnutrition danger signs
   - Caretaker promptly seeks care from trained CHW
   - CHW provides appropriate assessment and diagnosis

Critical Step: Caretaker correctly recognizes malaria/pneumonia/diarrhea/malnutrition danger signs	
Major Constraint	**mHealth Solution**
Ex. Can be difficult to teach signs of condition	*Ex. Train caretaker using a mobile video of a child with condition*
Some groups have cultural and religious beliefs that are different	Videos on mobile phones : Show videos of figures of authority to back up what CHW is promoting — CHW can bring this message along on home visits
Illiteracy—don't have access to health information in a form they can understand	
Health information may not be given to all the appropriate people	
Lack of knowledge of danger signs that necessitate calling community health worker	
Caregiver and other family members/decision makers without access to knowledge	
Signs confusing (i.e. diarrhea + teething)	

[1] *mHealth* refers to the use of mobile technologies (e.g., cell phones, PDAs and netbooks) within medical and public health programs.
[2] *Community Case Management* refers to community-based finding, diagnosis, treatment and/or referral of children suffering from the most common causes of illness and death, including diarrhea, malaria and pneumonia.

Doesn't recognize urgency – "normal"	

Critical Step: Caretaker promptly seeks care from trained CHW	
Major Constraint	**mHealth Solution**
Ex. Caretaker may not be able to find CHW or child may be too sick to travel	*Ex. Caretaker calls the CHW to find their location or request that they come to the home*
No trained CHW Don't know where CHW is	GPS function on phone Text message (sms)
Not allowed to go Caregiver has other responsibilities	
Does not have capacity to take the child Going somewhere else before going to CHW	
Wait too long before going to CHW	

Critical Step: CHW provides appropriate assessment and diagnosis	
Major Constraint	**mHealth Solution**
Ex. CHW may not follow diagnostic algorithm	*Ex. CHW follows a phone-based job aid*
Lack of rigor when asking about danger signs Take shortcuts	sms for remote diagnosis Job aids with steps for diagnosis
Doesn't have time to provide diagnosis because others are visiting	
Not well trained, supervised, refreshed, or checked	Voice message, foster peer-support or Dr. or Nurse call to provide feedback on proposed interventions (more for mentorship than supervision)
No RDTs, no timers	Mobile apps to do calculations Take pictures of blood samples
Can't count	Mobile apps: particularly respiration app
Conflict with local practices/beliefs	

2. **Group II:** Assigned to devise mHealth applications to facilitate the following steps:
   - CHW has treatment in stock and dispenses it correctly
   - CHW provides appropriate health education and counseling
   - Caretaker adheres to treatment plan

Critical Step: CHW provides appropriate health education and counseling	
Major Constraint	**mHealth Solution**
Ex. CHW may not give adequate advice	*Ex. CHW follows a phone-based job aid*
Data collection in timely manner	Simple program on cell phone

Illiteracy, especially working with CHW who do home visits. Technology challenge: too expensive to respond, electricity, connectivity with internet	Pictures for reconciling response - Simple and user-friendly - Solar powered batteries - Charger kiosk: free phone charging with health talk - Use of video

3. **Group III:** Assigned to devise mHealth applications to facilitate the following steps:
   - CHW refers child to health facility for severe illness
   - Caretaker seeks timely follow-up
   - CHW provides timely and accurate data on patient

Critical Step: CHW refers child to health facility for severe illness	
Major Constraint	**mHealth Solution**
Ex. Transportation may not be available or affordable	*Ex. Call for emergency transport; reimburse caretaker with mobile money*
Knowledge of symptoms (CWH) need of a reference	sms
Availability of health facility - distance, staffed with competent health professionals, affordable	Call health facility to notify/confirm referral
How to manage in home when care giver is absent, who goes	
Medication and supplies available	
Communicate back to CHW	Notify that Pt. was seen Plan of care Reminder for Rx Money transfers

4. **Group IV: Decided to address the issue of community mobilization for demand creation**

Critical Step: Demand creation for CCM services within populations with low literacy	
Major Constraint	**mHealth Solution**
New CCM services, therefore use of them is not a norm	Advertise via television or radio
Does supply meet demand?	Reverse 911 format: calling all parents in an area where there is a problem, e.g. diarrheal illness Registry of all phone numbers in village could be used in many ways: e.g. weekly robo-calls Simple text or recorded message that doesn't cost anything to receive Toll free call-in numbers
	CHW transfer minutes to caretaker's phone as incentive

	Charger kiosk in exchange for education/services Solar power charger
	iPad/Kindles – videos for education Icon based-photos as teaching tool

Other ideas:

- Incoming calls are free
- With illiterate populations – use of pictures and images, audio messages, pre-set buttons
- Air time provided
- E-banking
- E-IMCI
- Commodity management groups, use PDAs and collaborate
- Based on expressed need from communities
- Potential of PPP for communication

Feasibility Exercise:

Less Impact	**Less Expensive**		**More Impact**
		Low demand = registry with recorded calls Mobile phone communication between CHW and Health Facility Text medication/Rx reminders to care givers and CHW Diagnostic aids: - images and videos on phones to facility - ability to submit images for remote diagnostics	
		Low demand=CHW transfer minutes as incentives - charging solar kiosk in exchange for education Stream training video to phone with real-time interaction E-money transfer for transportation costs, incentives for CHW Pictorial applications for illiteracy	
	More Expensive		

APPENDIX 1: CORE Group Spring Meeting 2010 Summary—CCM

Community Case Management Concurrent Session – Small Group Work Write-Up

Speakers: *Yolanda Barbera and Amina Issa Mohamud, IRC*; *Jeanne Koepsell, Save the Children; and Megan Wilson, PSI*

*Three CORE Group Members, **IRC**, **PSI** and **Save the Children** who are all working on CIDA-funded CCM programs in multiple countries, presented on lessons being learned through providing life saving interventions through CCM and on the related impact on under-five mortality. Presenters and participants worked in small groups to address barriers and challenges to CCM scale-up and possible solutions and best practices. They focused on four different areas and the ideas generated during the group work are written-up below.*

Small Groups:

I. **Procurement & Supply Chain Management**

Barriers & Challenges

- Poor forecasting
- Government policies and requirements

Solutions & Best Practices

- Coordination between community, facility and governments
- Partnering approach with government for the start

II. **Training**

Barriers & Challenges

- If training by specialty then training would be altered
- Cost of training
- Length of training

Solutions & Best Practices

- Opportunity costs of attending
- How to keep them interested/coming (paid, volunteer)
- Changing ideas/activities to newer techs (BC @ Ministry Level)
- Having support and consensus of partners, roles, expectations
- Supervision (more + better)

III. **Supervision**

Barriers & Challenges

- Few/no civil service supervision
- Lack of increased attitude for supportive supervision (audit)
- Lack of $ and time to support supervision (transport, etc.)

Solutions & Best Practices

- Advocate for increase resources for supervision
- Training on supportive supervision at TOP Levels
- Quality improvement verification checklist (QIVC)

IV. **CHW – Motivation & Incentives**

Barriers & Challenges

- Competing priorities
- Competing survival strategies
- Different incentive structures – NGOs, governments
- Campaign vs. routine
- Continuity – funding stops
- Sustainability

Solutions & Best Practices

- Social support
- Positive supervision
- Info fed back
- Community mobilization and engagement to support CHWs – coherent and integrated
- Mentoring to retain knowledge
- New challenges for CHWs
- Volunteer contract – fixed term
- Basket approach/other things to offer
- Meet other CHW needs
- Provide CHW with other skills
- Volunteers prioritized for livelihood benefits
- CHW set up loan groups post training in the area
- Pay for service

APPENDIX 2: CORE Group Spring Meeting 2010 Summary—CCM —mHealth

mHealth Concurrent Session—Plenary: mHealth… Help or Hype?

Key Messages

1. Some of the most common ideas for mHealth in community health programming: Behavior change communications via calls and text messages; monitoring and evaluation/data collection; health system communications, e.g. community health worker visit scheduling, counseling and follow-up, technical support for community health workers from clinical staff; appointment reminders; treatment support for child morbidity, HIV and TB treatment; health worker training.

2. The world is going mobile. There have been huge growth rates in Africa. The $10 cell phones and $8 solar panels are bridging the last 100 mile gap from the farthest health facilities, saving fuel and transport time.

3. The focus is not about mHealth or eHealth but rather health solutions and how technology can help. mHealth complements, rather than replaces, activities.

4. Mobile money is on the upsurge. This can be used for payroll, transport costs, etc. It is available in remote locations, right where our beneficiaries live.

5. Many community health practitioners have been slow to consider mHealth applications because they are used to working in very low resource settings. However, there are realistic, efficient and effective uses of mHealth possibly now even in many low resource settings.

Surprising Twist/New Learning
A systematic review on mHealth implementation and research has just been completed at JHU. The technology is still very new, so while there are some promising results these are mostly from pilots.
There is a whole ecosystem that has to be in place for mHealth to work.

Unanswered Questions/Gaps
There is a need to:

- be more rigorous in the kinds of evaluations being done, to focus on health outcomes or impacts where possible
- identify the metrics needed to measure progress in mHealth
- frame research questions within a larger context.
- The only way to get to good systems that will work across organizations is to set standards.

The Future—What next for CORE Group in this topic area?
There is a community being built around mHealth work which is looking for ideas. It is critical to root mHealth applications in a real understanding of the real needs of the target population.

There are discussion groups running on various topics, include a CORE Group mHealth interest group listserv. There are several mHealth Working Groups. One at JHU/CCP includes NGOs around the world. Anyone can join. (Contact Kelly Kiesling at kkeislin@jhuccp.org)

mHealth Alliance's Health Unbound effort aims to get all the information mHealth in one place. Refer to http://www.mhealthalliance.org/

Bonus: What do you want the outside world to know?
As these systems are built, they should be designed in ways that enable them to link and talk together.

APPENDIX 3: mHealth Fact Sheet

mHealth Fact Sheet

Authors: Peggy D'Adamo (USAID), Adam Slote (USAID), James Bon Tempo (Jhpeigo) and Andrew Sideman (AED)

What is mHealth?

mHealth refers to the use of mobile technology to support health programming. mHealth projects have three common elements: the use of electronic information and communication technology (ICT); mobility of services, providers and/or clients; and application to one or more components of the health system. The devices used can be basic cell phones, smartphones, netbooks, PDAs or e-Readers, though many of these devices are converging and providing similar functionality. And these devices can be connected to a voice or data network full-time, only intermittently or not at all.

Additional definitions:

- Medical and public health practice supported by mobile devices (Wikipedia)
- Use of mobile devices in health solutions (mHealth Alliance)
- New communication patterns in healthcare enabled by mobile phones and other wireless computing devices (mHealth Initiative)

Uses/application areas for mHealth include:

- Data collection – surveillance, monitoring, surveys, medical records
- Service delivery – telemedicine, diagnostics, performance support
- Education, training and job aids – reinforcement, assessment, supportive supervision
- Behavior change & communication – health tips, service availability, appointment reminders
- Disease surveillance – tracking epidemics and outbreaks
- Supply chain management – tracking shipments, preventing leakage, eliminating stock-outs

Examples of mHealth applications:

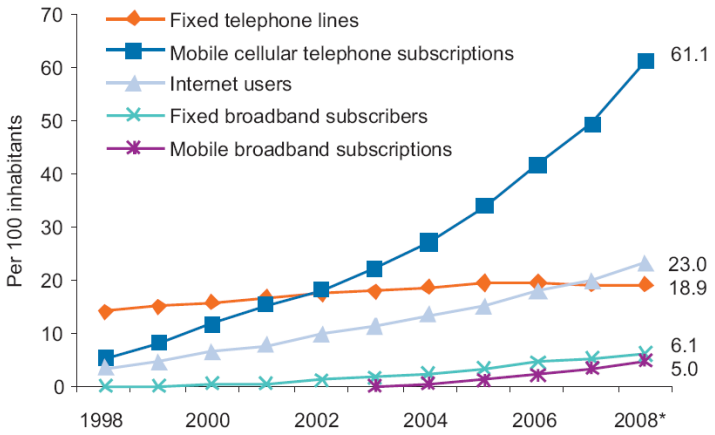
- EpiSurveyor – Conducting surveys and collecting data
- TracNet – Tracking patients and monitoring adherence
- mPedigree – Verifying drug authenticity
- Text to Change – Using quizzes and games to raise public awareness
- FrontlineSMS: Medic – Communicating with and coordinating CHWs
- BabyCenter – Delivering informational messages with links to website or hotline
- CommCare – Providing job aids and algorithms for health care providers

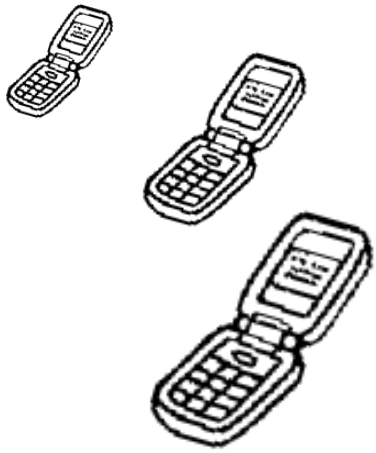
Why all the interest in mHealth anyway?

Many people in developing countries own or have access to mobile technology because:

- A technological infrastructure is already in place;
- Voice and Internet services are less expensive than landlines and DSL;
- Phone prices continue to drop (as low as $7 for a basic phone in Malawi);
- Pre-paid systems require only cash; and
- Economic benefits result from phone access and connectivity.

In fact, over the last decade, growth in the mobile sector has been greatest in the developing world. And globally, the rate of adoption is greater than that of any other ICT.





Source: http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009_w5.pdf

A framework for incorporating mobile technology into health programs:

- More – Replicate and scale initiatives more easily
- Better – Improve the quality of health interventions
- Faster – Expedite processes and procedures
- Cheaper – Save money over existing approaches
- Easier – Make process and services easier to implement

Always remember to:

- Consider replication or scale up from the beginning
- Design for the end user
- Fit the technology to the need, not the need to the technology
- Keep cost-effectiveness in mind

Useful websites:

K4Health mHealth toolkit: http://www.k4health.org/toolkits/mhealth
CORE Group mHealth page: http://coregroup.org/our-technical-work/initiatives/mhealth
MobileActive –http://www.mobileactive.org

APPENDIX 4: We need evidence. Let's start with a good research questions

Applicable data on mHealth applications is spotty and sparse. There's so much we don't know. Which applications will make a difference? Are they cost effective? We need to conduct thoughtful operations research—and disseminate the findings— in order to build an evidence base.

First step: Frame the research question.

1. Does the research question provide a clear idea of what the research project is about/hopes to address?

2. Is the question one that can be addressed by research?

3. Does the research question provide some indication of how the research design is likely to unfold?

5. Is the question interesting, relevant and important?

6. Is there a single question? You should aim for a single research question, developed through sub questions, rather than generate a collection of questions, although this is not always possible.

7. A good research question, although it is addressed through a fairly small-scale empirical study, is drawn from more general theoretical and methodological issues. Does the research question emerge from and point only at a local context. Or does it emerge from a broader set of disciplinary or professional issues?

(Adapted from University of Cape Town Department of Humanities.)