The ASSIST mHealth Systems Strengthening Framework: An Evolving Framework

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Presentation Outline

- Purpose and scope of framework
- Background and linkages with other research and developments in the field
- Framework development
- Framework organization
Purpose and Scope: mHealth Systems Strengthening Framework

**Purpose:**
Provide guidance on assessing m/eHealth technologies that can best strengthen health systems and quality improvement efforts to overcome critical gaps in LMICs

**Scope of framework:**
- LMICs
- Sub-national health system and facilities
- All clinical areas

Process of Developing the ASSIST mHealth Systems Framework: A Work in Progress
Key informant perspectives

- Technology should be developed at the local level in the local context with a system perspective.
- Technology can enhance health interventions, the quality of care, and the systems Technology is not the intervention itself.
- Focus on what the health system’s users need instead of what the technology can do.
- Integration into care delivery and interoperability of technologies is essential.

Key informant perspectives

- Focus on sustainable, widely applicable systems that can be tailored to needs.
- Build information and communication technology (ICT) systems within local setting and infrastructure.
- Local management is essential or the technologies won’t be sustainable beyond the duration of the grant.
- For m/e Health technology to be sustainable and to have a marked impact, there needs to be a plan for interoperability.
Literature Review: Questions and Methods

Review Questions:
• Are current m/eHealth technologies targeting common critical gaps in local health system functions?
• What is the evidence that these m/eHealth technologies contribute to bridging identified gaps to strengthen system functions, improve care and/or influence patient outcomes?

Search Methods:
• Systematic search of peer-reviewed literature in 5 databases
• Systematic review of online compendiums and websites (e.g. mHealthEvidence.org, PATH, USAID, UNICEF, WHO, OpenMRS, OpenLMIS, OpenHIE, iHRIS)
• Review of additional resources provided by key informants

Recommendations from Technical Working Group meeting
• Leverage m/eHealth to augment services for chronic care
• m/eHealth technologies should address clearly defined problems
• There is a need for better evaluation of how current technologies address gaps
• What’s the value added? Is it cost- effective?
• Need for indicators/common approach to show whether or not m/eHealth is improving systems (are we achieving the desired outcomes?)
Background / Context

- **Pilotitis**: From 1990-early 2000s, proliferation of "stand-alone" pilot mHealth projects in LMICs with little evidence of sustainability or being able to be brought to scale
  - This *disease* is so prevalent that there have been many blogposts discussing it

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- **2005**: 58th World Health Assembly - 1st ever E-Health Resolution
- **2011**: Bellagio eHealth Evaluation Declaration: Call to action for rigorous data in evaluating impact of m/e Health technologies
Recent Development in mHealth Research and Approaches

- **mHealth and MNCH: State of the Evidence Report**
  (Philbrick W; mHealth Alliance; 2013)

- **Classification Structure - WHO mHealth Technical & Evidence Review Group (mTERG)** 2012-present

- **Mhealthevidence.org** (K4health and JHUCCP)

- **A Logic Model for mHealth Systems**
  (Marc Mitchell (D-Tree/Harvard), Alain Labrique (JHBSPH/JHU/GmI), Garret Mehl (WHO))

- **GSMA Service Maturity Tool (SMT)**

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**mHealth Logic Model (Mitchell, Labrique, & Mehl)**

Organized around mHealth Capabilities

- **MHEALTH CAPABILITY**
  - Real-time data access
  - Disease surveillance
  - Logistics monitoring & tracking
  - Finance (pre-emptive support (banking, insurance))
  - Quality assurance
  - Workflow monitoring systems
  - Decision support systems
  - On-demand training & assessments
  - Point-of-care diagnostics
  - Remote monitoring
  - Remote consultation

- **INTERMEDIATE OUTCOME**
  - **IMPROVED DEMOGRAPHIC & HEALTH DATA**
  - **POLICY & RESOURCES ADJUSTMENTS**
  - **SUPPLY CHAIN IMPROVEMENTS**
  - **REPORTING IMPROVEMENTS**
  - **CONTINUITY & AFFORDABILITY OF CARE**
  - **PROVIDER COMPETENCE, ACCOUNTABILITY & EFFECTIVENESS**

- **OUTCOMES**
  - **RESPONSIVE HEALTH SYSTEM**
  - **IMPROVED EFFICIENCY & COVERAGE**
  - **IMPROVED QUALITY OF CARE**
  - **IMPROVED HEALTH BEHAVIORS**


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mTERG m/eHealth Classification: Twelve Categories of mHealth & ICT applications

- Client education and behavior change communications
- Registries/Vital Events Reporting
- Sensors & Point of Care Diagnostics
- Data Collection/Reporting
- Electronic health records
- Decision Support
- Provider-Provider Communication
- Provider Work Planning & Scheduling
- Provider Training & Education
- Human Resource Management
- Supply Chain Management
- Financial Transactions & Incentives

Donabedian Model of a System

The sum of all elements (including processes) that interact together to produce a common goal.

Quality Improvement

Inputs
Resources necessary to carry out a process

Process
A series or sequence through which inputs are transformed into outputs

Outcomes
The outputs (services/products) and outcomes (health outcomes) result from the inputs & processes
ASSIST mHealth Systems Framework

- Starts by defining health system needs not technology “solutions”
- Identifies gaps in health system functions that can be addressed by mHealth technologies as part of HSS and QI efforts
- Explores evidence related to use of mHealth technologies in four framework priority health system domains:
  - Real Time Care and Service Delivery
  - Information Systems and Data
  - Work force
  - Supply Chain/Commodities

The Opportunity: Strengthen Local Systems for Better Outcomes
is there a more update graphic of this?
Pamela Marks, 5/1/2014
Sub-national Focus: Defining Leverage Points for communication and information technologies to augment HSS and Improvement efforts

The Challenge: System Gaps Result in Poor Health Outcomes
is there a more update graphic of this?

Pamela Marks, 5/1/2014
Example: Essential Functions of Service Delivery

- Service Delivery
- Real Time Care

- Efficient, coordinated service delivery processes
- Care is safe
- Care is adherent to best practices

- Coordinated care across system levels
- Coordinated care across time/phases

Strengthened Health System

mHealth Systems Framework: Leveraging Information and Communication Technologies (“mHealth”) to help overcome systems and quality of care gaps

- Weak Health Systems
- Compressed Care

- Information Systems and Data

- Real Time Care and Service Delivery

- Supply Chain / Commodities

- Strong Health Systems
- High Quality Care

- Improved Health Outcomes

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Other considerations

• Interoperability
• Data ownership: cloud based vs housed in server in the host country
• Privacy issues
• Gender

Mobile phones and gender disparity

• [Doubled Link: Doubling Digital Opportunities: Enhancing the Inclusion of Women & Girls in the Information Society](#) report by the Broadband Commission:
  
  – “Worldwide, women are also on average 21% less likely to own a mobile phone – representing a mobile gender gap of 300 million…”

  – Bringing an additional 600 million women and girls online could boost global GDP by as much as US $18 billion.
mHealth systems framework: Bringing technology and practice closer together

- Interventions need to fit a need and are appropriate for local context
- Track evidence-based interventions: documentation and measuring → which changes most effective in filling the gap & overcoming constraints
- mHealth systems framework allows users to systematically test changes in practices, processes, and performance
  - Integrate changes with technologies that will leverage improved outcome

Looking ahead

- Defining research priorities
- Promoting collaboration between technology, health systems, quality improvement and content experts
- Building partnerships
- Reinforcing linkages between the formal health system and the community by using technology to strengthen the connections.
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