Development of Standard Terminology for Global MNCH

March 23, 2012
MIT HST.S14

Jonathan Payne, MS
Director, Maternal Concept Lab
mHealth Informatics Coordinator, Partners in Health
mHealth Innovation Principle #1

There are 2 types of innovation:

1. Doing things better
2. Doing better things
**Doing things better**

- Frontline SMS in Malawi
- Community-based TB follow-up
- CHWs walked as much as 35 miles to submit paper forms
- SMS-Phones + FrontlineSMS reduced
- Reporting time saved 1200 hours of follow-up time and saved $3,000 in fuel costs in 6 months
Doing better things

- Phone-based antenatal and postpartum Care protocols Bihar, India – CARE India, D-tree, Dimagi
  - Phones walked CHWs and ANMs through provision of services → decision support
  - 400,000 CHWs in Bihar
  - Task shifting increased the workforce that could provide maternal health services
mHealth Innovation Principle #2

Technology is only 5% of the solution.

• The rest is...Delivery Systems
  – Processes
  – Organizational structure
  – Management
  – Business models
  – Incentives and payment structures
  – Policies and regulatory systems
Implementation Science

• “The scientific study of methods to promote the uptake of research findings into routine healthcare in both clinical and policy contexts”

• Combination of Principles #1 and #2
  – Innovations that “do things better” require far fewer changes to the 95%
  – Innovations that “do better things” typically require significant changes to the 95%

• Evidence in what’s scaled so far:
  – SMS for Life – TZ
  – Reporting of lab results (SMS printer) – Zambia
  – SMS-to-consumer messaging – CellLife in South Africa
**Benefit of Standards**

- Precision and accuracy of communication
- Benchmarking and simplified analysis
- Increased efficiency in design, adoption, scale
- Reusability of tools → modularization
- Semantic interoperability
- Enterprise architecture

- Facilitates evaluation, delivery, integration, reuse
Why a new standard for Global MNCH?

• Many standards exist:
  – ICD-9/10
  – SNOMED
  – CPT
  – LOINC
  – RxNorm
  – ICPC-2
  – ...

• What these lack:
  – Operational / interface
  – Developing world and community-based care
  – Implementable

Interface Terminology for Global MNCH


Example of IMCI

- Integrated Management of Childhood Illness developed by WHO to facilitate nurses caring for children 2mo to 5yr

- 5-year, Multi-Country Evaluation in Bangladesh, Brazil, Peru, Tanzania, Uganda showed improved adherence to standards of care, improved outcomes, and reduced cost of care

- India/WHO adapted IMNCI to include infants under 2mo

- Swiss Tropical Institute and D-tree International developed e-IMCI
Image of PAHO Perinatal clinical record removed due to copyright restrictions.

Mapping Terminology

PAHO PCR

Interface Terminology

- MUAC (284473002)
- CHRONIC COUGH (68154008)
- Chronic Diarrhea (K52.9)
- Respiratory Rate (86290005)
- Seizure / Convulsion (91175000)
- Feeding difficulties (R63.3)
- Vomiting (R11)
- Malaise and fatigue (R53)
- Breathing abnormalities (R06.8)
- Soft tissue disorder (M79.8)
...

Reference Terminology

- ICD-10
- SNOMED
- RxNorm
- LOINC
- Other

Image of PAHO Perinatal clinical record removed due to copyright restrictions.
From Terminology to Content

PAHO PCR

Image of PAHO Perinatal clinical record removed due to copyright restrictions.

Generic Content Representation

OpenMRS
Sana Mobile
CommCare
...

Interface Terminology

MUAC
(284473002)
CHRONIC COUGH
(68154008)
Chronic Diarrhea
(K52.9)
Respiratory Rate
(86290005)
Seizure / Convulsion
(91175000)
Feeding difficulties
(R63.3)
Vomiting (R11)
Malaise and fatigue (R53)
Breathing abnormalities
(R06.8)
Soft tissue disorder
(M79.8)
...

mcl

Partners In Health
A Final Example – MoTeCH

- Primary point of contact to health system is CHW
- 2 types of CHWs, 3 types of nurses, clinical officers, doctors
- Delivery of reproductive health services and infant care
Package of Services within MNCH

Charts of interventions for pregnancy care removed due to copyright restrictions.
Distribution of Tasks Across Health Workforce

- What can different people do?
- What can technology do for them?
- How do we coordinate care across multiple workers and sites of care?
- Can we shift work to lower cadres of workers using technology?
The MoTeCH Ecosystem

Client ↔ CHW ↔ Clinician ↔ District / MoH

IVR / SMS

CommCare

MoTeCH ↔ CommCare HQ

OpenMRS

DHIS2

mcl

Partners In Health
• World’s best practices within MNCH available in highly accessible, standards-based formats
  – High-quality MNCH content reused across multiple projects, organizations and countries.