Development of Standard Terminology for Global MNCH

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mHealth Innovation Principle #1

There are 2 types of innovation:

1. Doing things better

2. Doing better things

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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

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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

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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

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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

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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**

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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

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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

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PAHO Perinatal Clinical Record

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

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Mapping Terminology

PAHO PCR

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

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

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From Terminology to Content

PAHO PCR

Generic Content Representation

Interface Terminology

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

OpenMRS
Sana Mobile
CommCare
…

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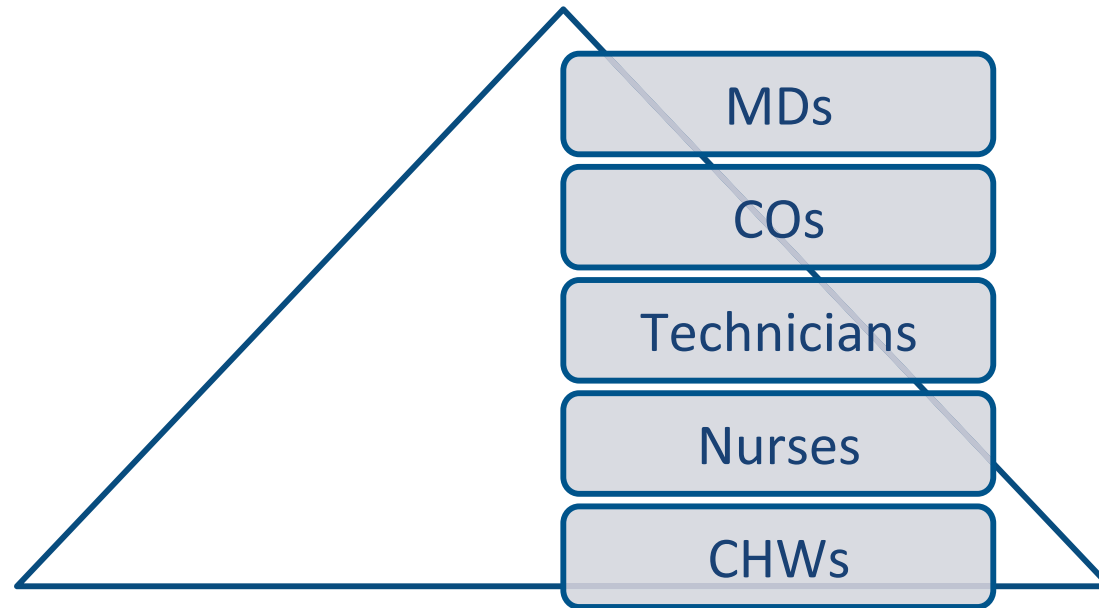…

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A Final Example – MoTeCH

- Primary point of contact to health system is CHW

- 2 types of CHWs, 3 types of nurses, clinical officers, doctors

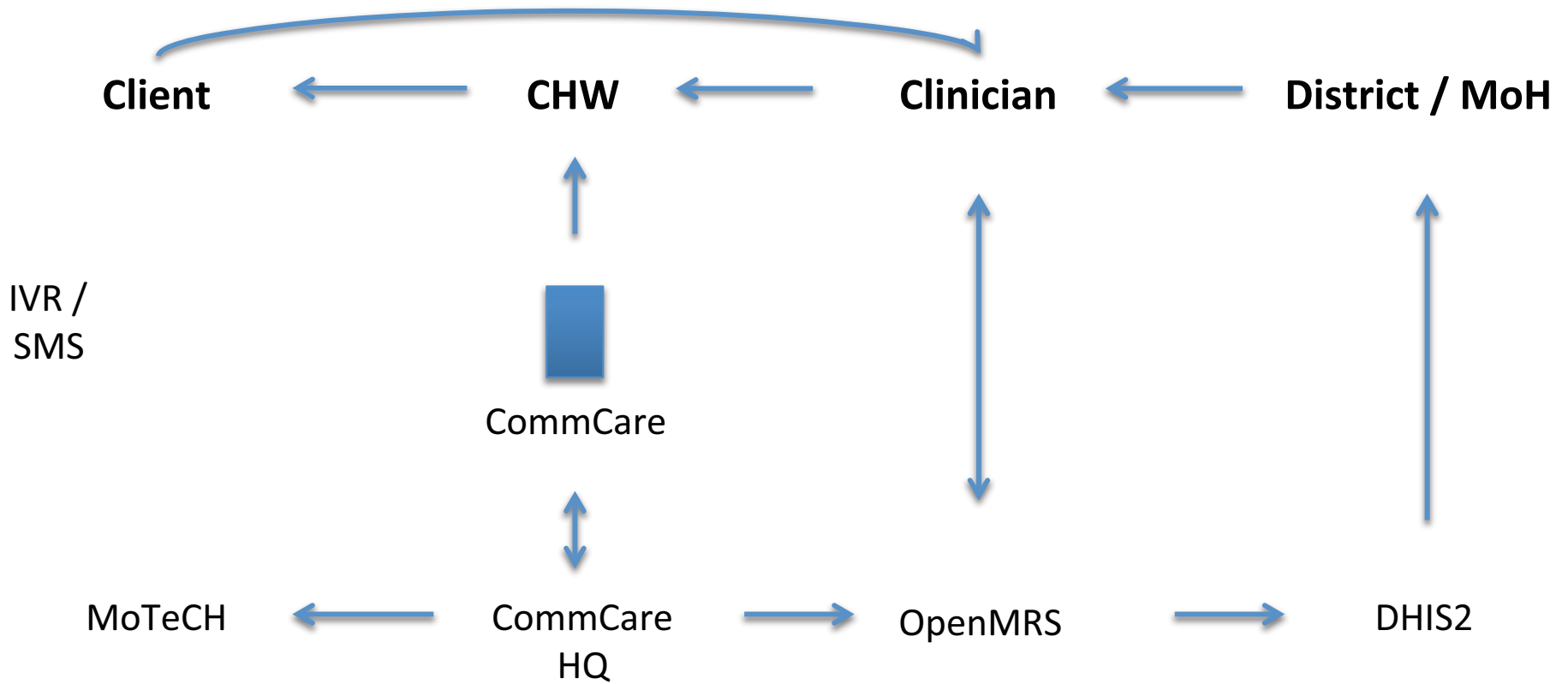- Delivery of reproductive health services and infant care

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Package of Services within MNCH

Charts of interventions for pregnancy care removed due to copyright restrictions.

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Distribution of Tasks Across Health Workforce

MDs

COs

Technicians

Nurses

CHWs

- 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?

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The MoTeCH Ecosystem

Client ← CHW ← Clinician ← District / MoH

IVR / SMS

CommCare

MoTeCH ← CommCare HQ → OpenMRS → DHIS2

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- World's best practices within MNCH available in highly accessible, standards-based formats

  – High-quality MNCH content reused across multiple projects, organizations and countries.

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