mHealth and ICT Framework for RMNCH

mHealth for Maternal Health, April 7-8, 2014

Dr. Garrett Mehl

World Health Organization

UNDP · UNFPA · UNICEF · WHO · World Bank
hrp Special Programme of Research, Development and Research Training in Human Reproduction

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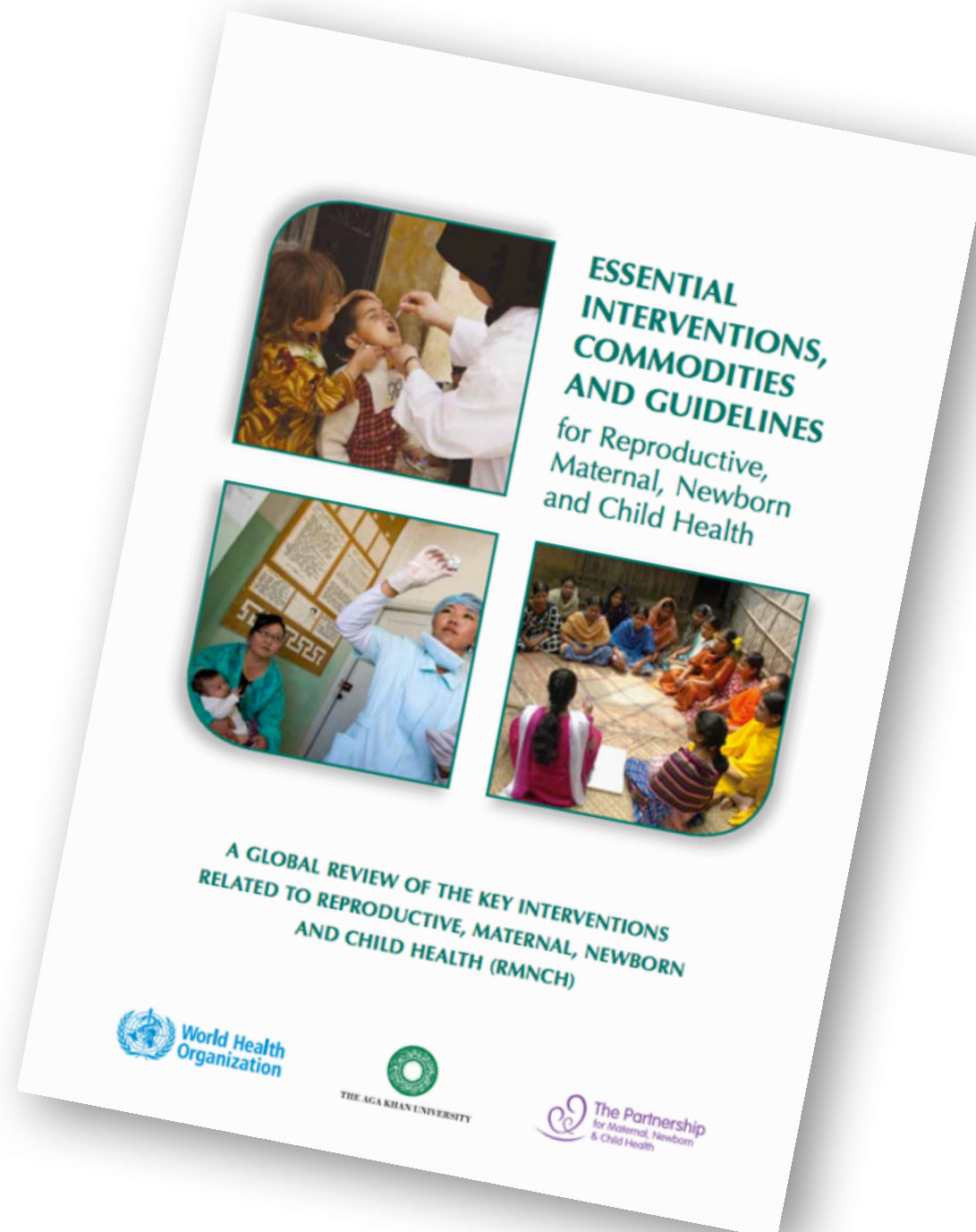
Preventive and Curative Public Health **Interventions of known efficacy** exist and are well described

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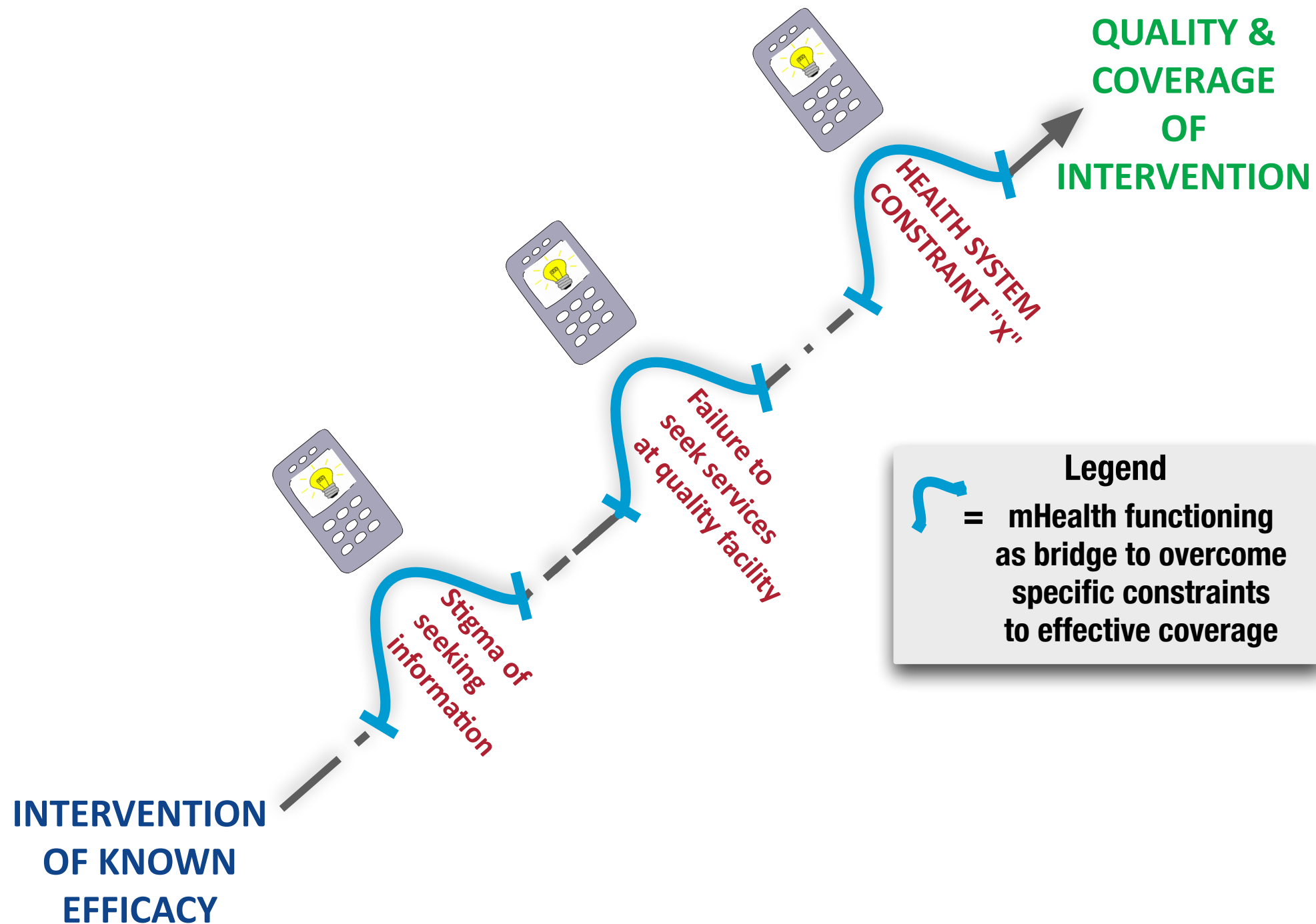COMMUNITY LEVEL/HOME

FIRST LEVEL/OUTREACH

REFERRAL LEVEL/DISTRICT HOSPITAL

Sexual and Reproductive health

Maternal health

Before pregnancy · Pregnancy · Birth · Postpartum · Newborn · Infancy · Childhood

Packages of Interventions
for Family Planning, Safe Abortion care, Maternal, Newborn and Child Health

World Health Organization

ESSENTIAL INTERVENTIONS, COMMODITIES AND GUIDELINES
for Reproductive, Maternal, Newborn and Child Health

Y INTERVENTIONS
TERNAL, NEWBORN
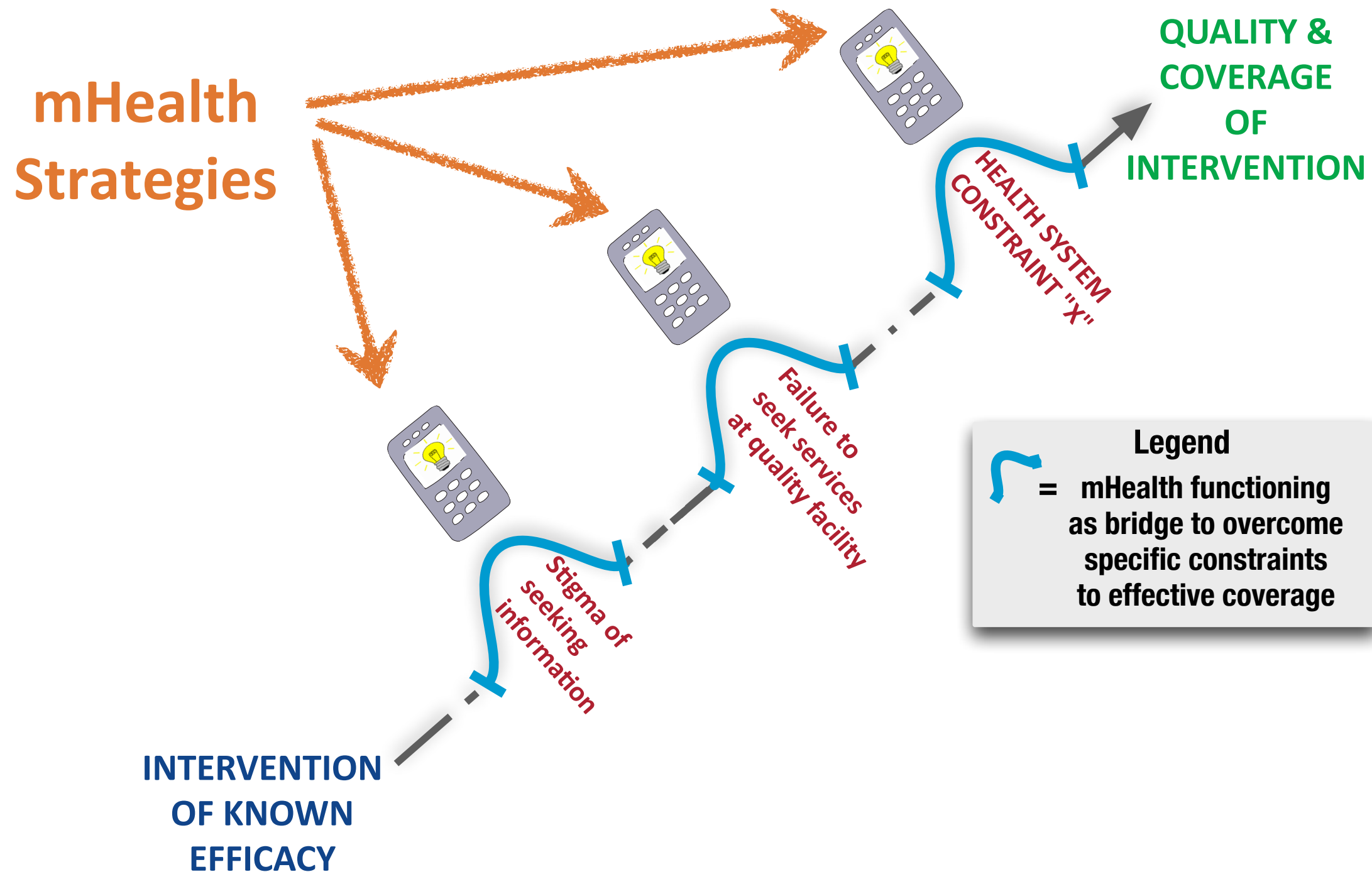MNCH)

The Partnership
for Maternal, Newborn & Child Health

mHealth as catalyst to existing interventions

mHealth as catalyst to existing interventions

QUALITY & COVERAGE OF INTERVENTION

HEALTH SYSTEM CONSTRAINT "X"

Failure to seek services at quality facility

Stigma of seeking information

INTERVENTION OF KNOWN EFFICACY

Legend

= mHealth functioning as bridge to overcome specific constraints to effective coverage

mehlg@who.int

mHealth as catalyst to existing interventions

mHealth Strategies

QUALITY & COVERAGE OF INTERVENTION

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mHealth vocabulary

mHealth Strategy			Constraint overcome
Function	Use	Purpose	
Text Message	Info Delivery	Reminder	Poor client adherence to drug regimen

Question: does providing an SMS message as reminder to take drug (e.g., iron supplementation) lead to increased use?
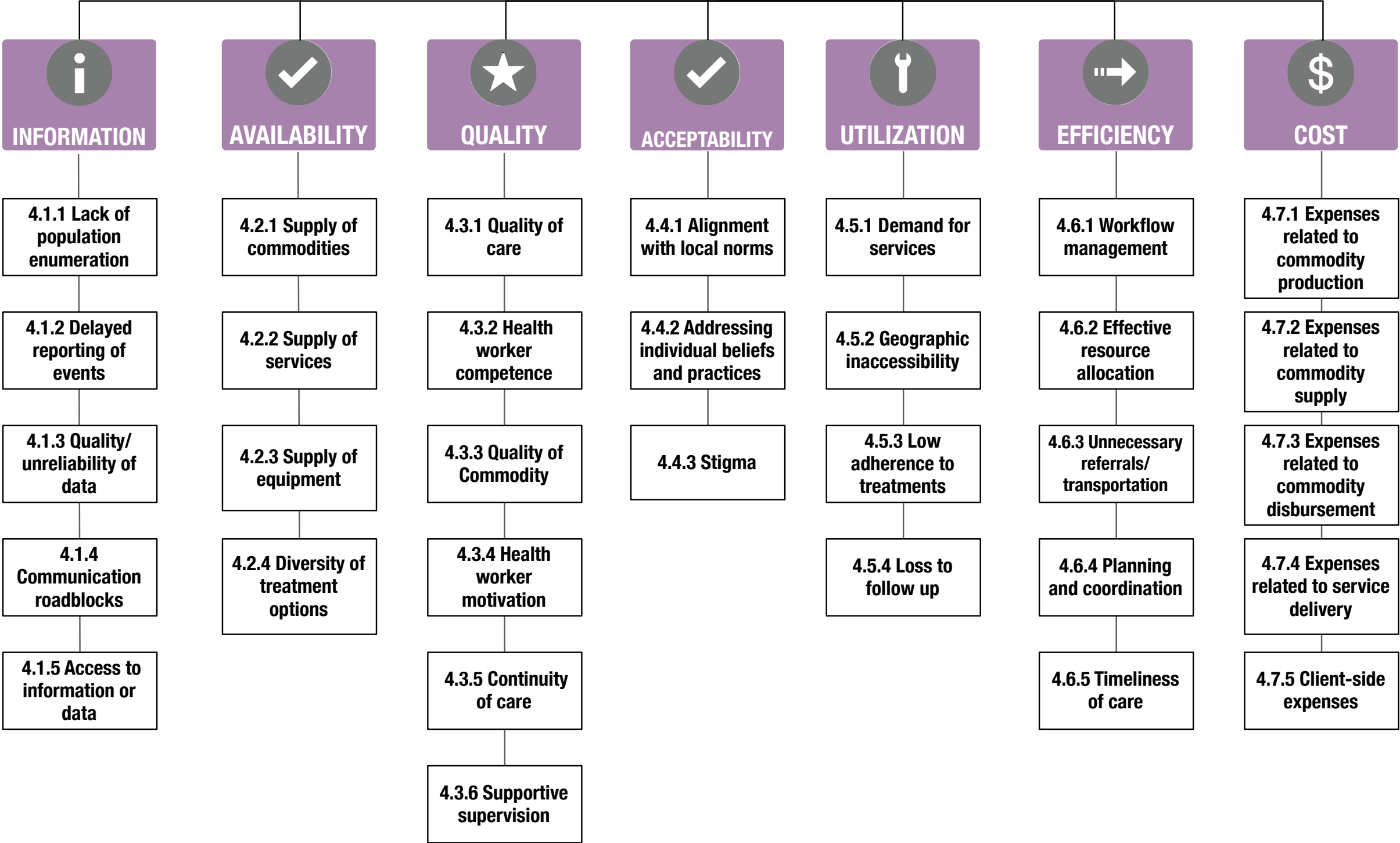
A Taxonomy for mHealth
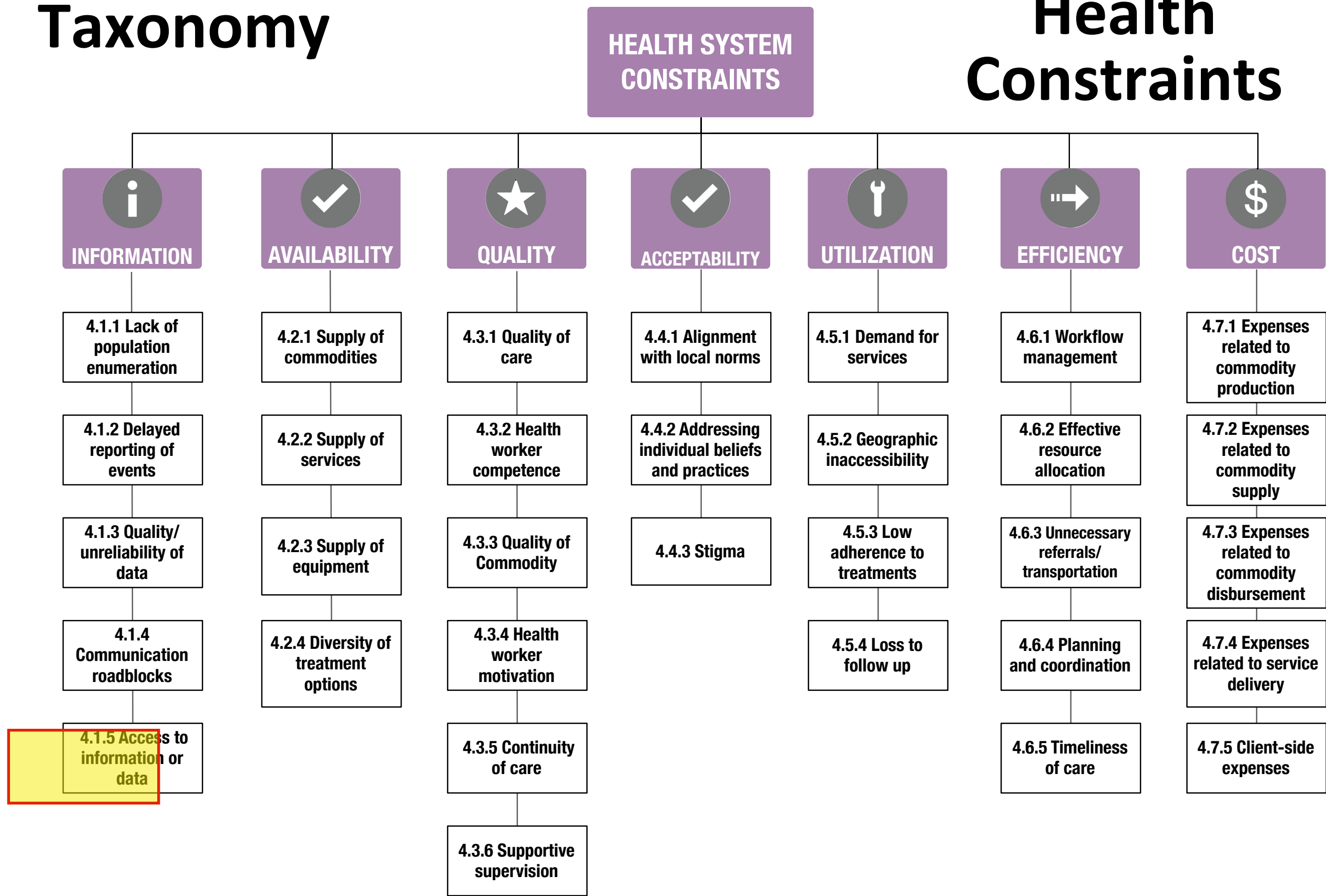
WHO mTERG mHealth Taxonomy

Zaza District Maternal Health Constraints

HEALTH SYSTEM CONSTRAINTS

INFORMATION
- 4.1.1 Lack of population enumeration
- 4.1.2 Delayed reporting of events
- 4.1.3 Quality/ unreliability of data
- 4.1.4 Communication roadblocks
- 4.1.5 Access to information or data

AVAILABILITY
- 4.2.1 Supply of commodities
- 4.2.2 Supply of services
- 4.2.3 Supply of equipment
- 4.2.4 Diversity of treatment options

QUALITY
- 4.3.1 Quality of care
- 4.3.2 Health worker competence
- 4.3.3 Quality of Commodity
- 4.3.4 Health worker motivation
- 4.3.5 Continuity of care
- 4.3.6 Supportive supervision

ACCEPTABILITY
- 4.4.1 Alignment with local norms
- 4.4.2 Addressing individual beliefs and practices
- 4.4.3 Stigma

UTILIZATION
- 4.5.1 Demand for services
- 4.5.2 Geographic inaccessibility
- 4.5.3 Low adherence to treatments
- 4.5.4 Loss to follow up

EFFICIENCY
- 4.6.1 Workflow management
- 4.6.2 Effective resource allocation
- 4.6.3 Unnecessary referrals/ transportation
- 4.6.4 Planning and coordination
- 4.6.5 Timeliness of care

COST
- 4.7.1 Expenses related to commodity production
- 4.7.2 Expenses related to commodity supply
- 4.7.3 Expenses related to commodity disbursement
- 4.7.4 Expenses related to service delivery
- 4.7.5 Client-side expenses

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mHealth Framework for RMNCH

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TECHNICAL CONCEPT

mHealth innovations as health system strengthening tools: 12 common applications and a visual framework

Alain B Labrique,[a] Lavanya Vasudevan,[a] Erica Kochi,[b] Robert Fabricant,[c] Garrett Mehl[d]

This new framework lays out 12 common mHealth applications used as health systems strengthening innovations across the reproductive health continuum.

The rapid proliferation of mHealth projects—albeit mainly pilot efforts—has generated considerable enthusiasm among governments, donors, and implementers of health programs.[1] In many instances, these pilot projects have demonstrated conceptually how mHealth can alleviate specific health system constraints that hinder effective coverage of health interventions.

Large-scale implementation or integration of these mHealth innovations into health programs has been limited, however, by a shortage of empirical evidence supporting their value in terms of cost, performance, and health outcomes.[1–4] Governments in low- and middle-income countries face numerous challenges and competing priorities, impeding their ability to adopt innovations.[2] Thus, they need robust, credible evidence about mHealth projects in order to consider mHealth alongside essential health interventions, and guidance about which mHealth solutions they should consider to achieve broader health system goals.[2] Their tolerance for system instability or failure can be low, even when the status quo may be equally, or more, unreliable.

Current larger-scale effectiveness and implementation research initiatives are working to address the evidence gaps and to demonstrate the impact of mHealth investments on health system targets.[1] Other efforts are underway to synthesize such findings.[5]

MHEALTH AS A HEALTH SYSTEMS STRENGTHENING TOOL

Recent mHealth reviews have proposed that innovators focus on the public health principles underlying mHealth initiatives, rather than on specific mHealth technologies.[6] International agencies and research organizations have also endeavored to frame mHealth interventions within the broader context of health system goals or health outcomes.[2] The term "health system" includes all activities in which the primary purpose is to promote, restore, or maintain health.[7] Some elements of a framework for evaluating health systems performance by relating the goals of the health system to its essential functions have been proposed previously, which we believe can serve as a model for articulating and justifying mHealth initiatives and investments.[7]

Applying a health systems lens to the evaluation of mHealth initiatives requires different indicators and methodologies, shifting the assessment from whether the mHealth initiative "works" to process evaluation or proxy indicators of the health outcome(s) of interest. This new way of thinking would facilitate selection of mHealth tools that are appropriate for identified challenges. In other words, it would drive people to first identify the key obstacles, or constraints, to delivering proven health interventions effectively, and to then apply appropriate mHealth strategies that could overcome these health system constraints.[8]

Presenting mHealth as a range of tools for overcoming known health system constraints, as a health systems "catalyst," may also improve communication between mHealth innovators and health program implementers. Communicating mHealth technologies as tools that can enhance delivery of life-saving interventions through improvements in health systems performance, such as coverage, quality, equity, or efficiency, will resonate with health decision-makers.[7]

Hence, rather than being perceived as siloed, standalone solutions, mHealth strategies should be viewed as integrable systems that should fit into existing health system functions and complement the health

[a] Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA
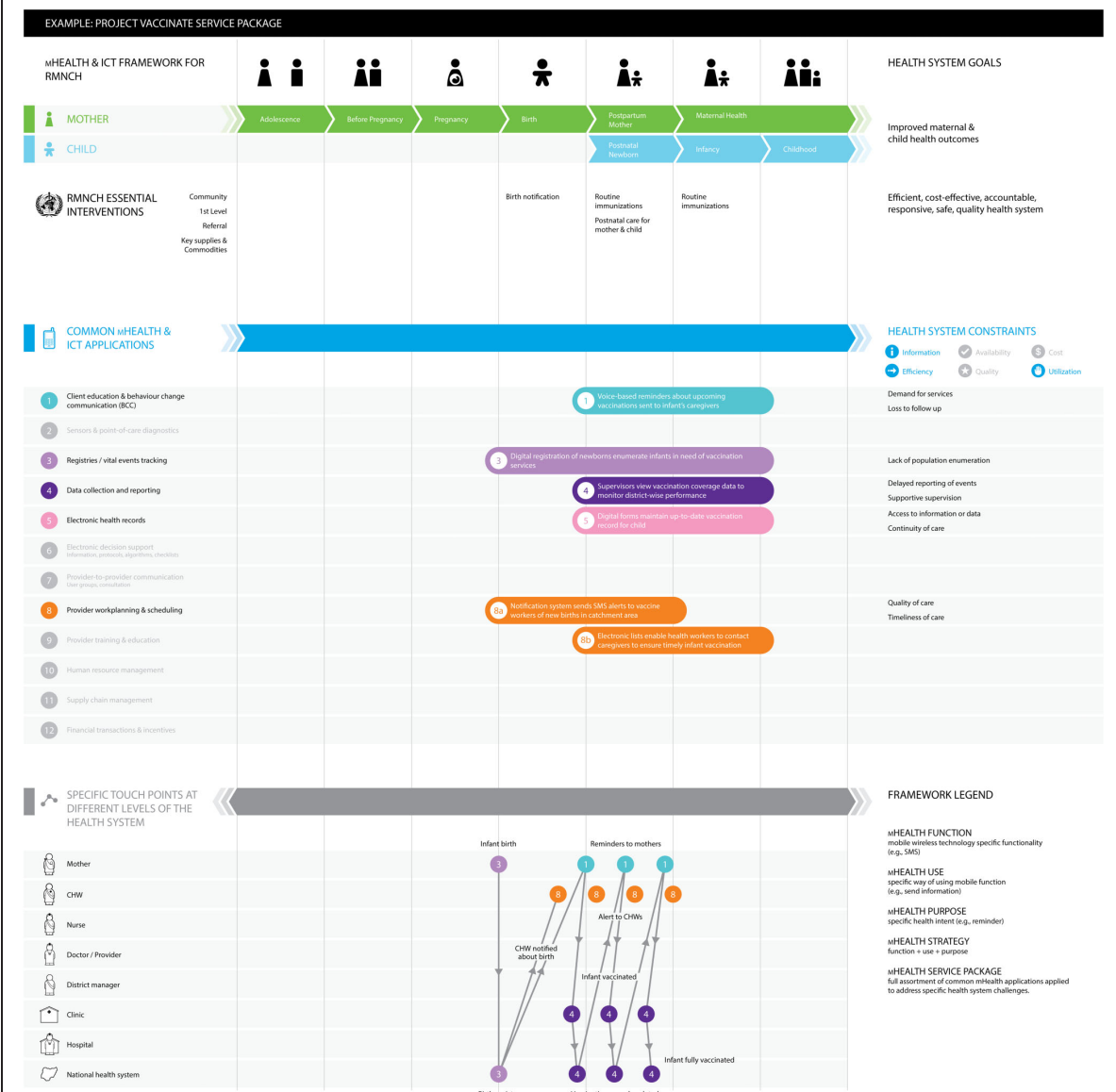[b] United Nations Children's Fund (UNICEF), New York City, NY, USA
[c] frog Design, New York City, NY, USA
[d] World Health Organization, Geneva, Switzerland
Correspondence to Garrett Mehl (mehlg@who.int).

FIGURE 3. Sample Application of the mHealth and ICT Framework for RMNCH

Abbreviations: CHW, community health worker; ICT, information and communications technology; RMNCH, reproductive, maternal, newborn, and child health.

The fictional "Project Vaccinate" is an mHealth system that integrates 6 of the 12 common mHealth applications to identify newborns and support families and community health workers in ensuring timely and complete vaccination.

Why a mHealth and ICT Framework for RMNCH?

- Allows focus on **health systems strategy** of the mHealth innovation, not just the technology.

- Provides projects with **a communication tool** when talking with different stakeholders, including governments about **what mHealth offers**.

- Allows identification of uniqueness, commonalities and gaps across multiple mHealth projects through the use of a consistent and health systems-focused vocabulary.

mHealth Classifications

WhatsApp

mehlg@who.int

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mHealth Technology	technology(ies) (operating system + code + functions)	WhatsApp

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World Health
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mHealth Project	strategy + geo + technology	MAMA