Fighting the global health burden through new technology:

WHO ITU joint agreement on mHealth for NCDs

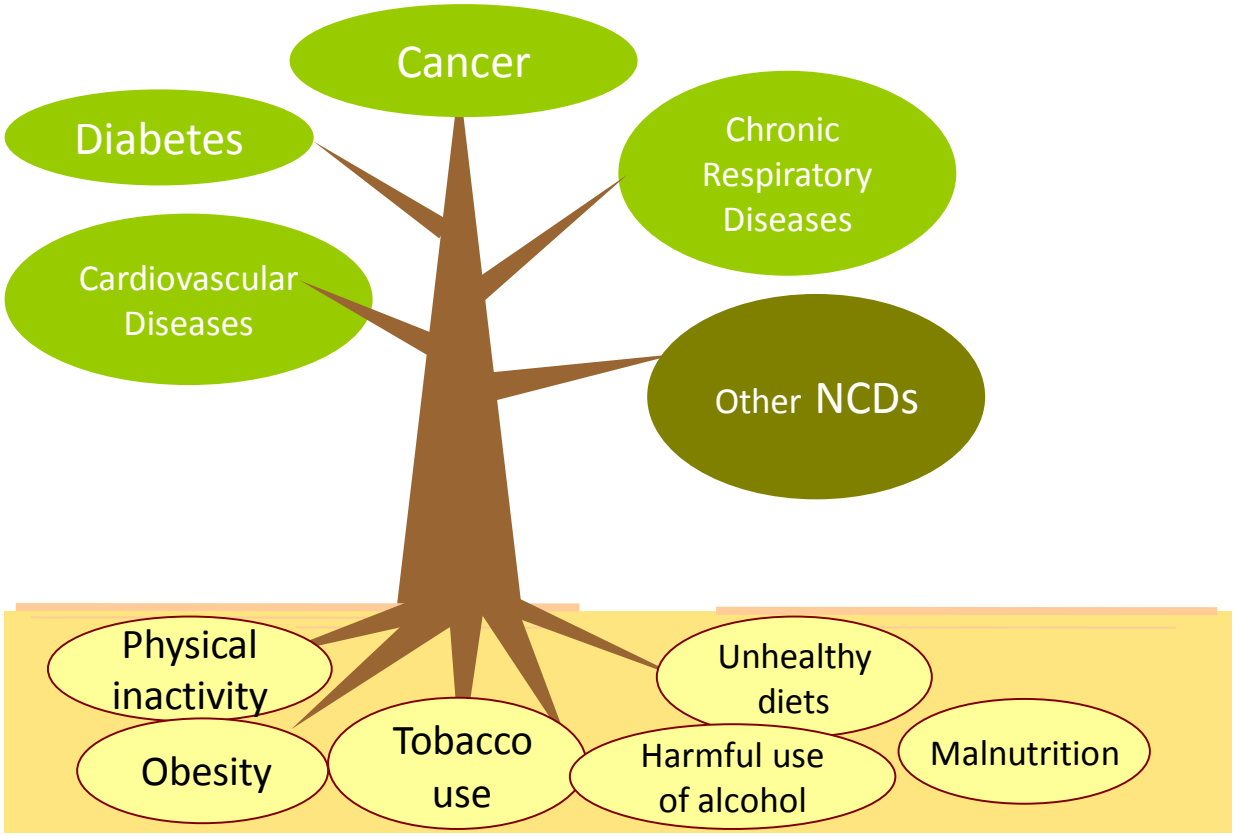
www.who.int • mhealth4ncd.itu.int

A collaborative initiative between

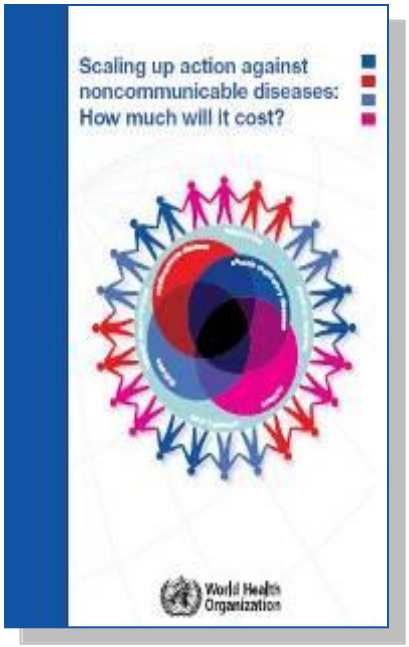
World Health Organization

ITU

Non-Communicable Diseases(NCDs) and their causes

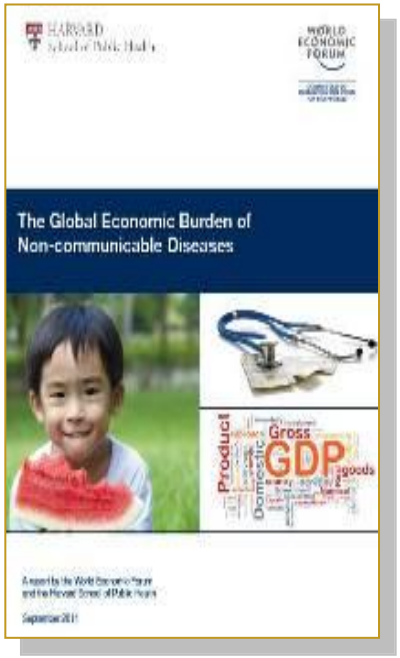


The socio-economic burden of NCDs



US$ 170B

is the overall cost for all developing countries to scale up action by implementing a set of "best buy" interventions, identified as priority actions by WHO



US$ 7T

is the cumulative lost output in developing countries associated with NCDs between 2011-2025

57 million total deaths in 2008 of which 36 million were due to NCDs

"This is the second health issue ever to be addressed at a special meeting of the United Nations General Assembly.
We should all work to meet targets to reduce NCDs.
WHO's best buys serve as excellent guidance"

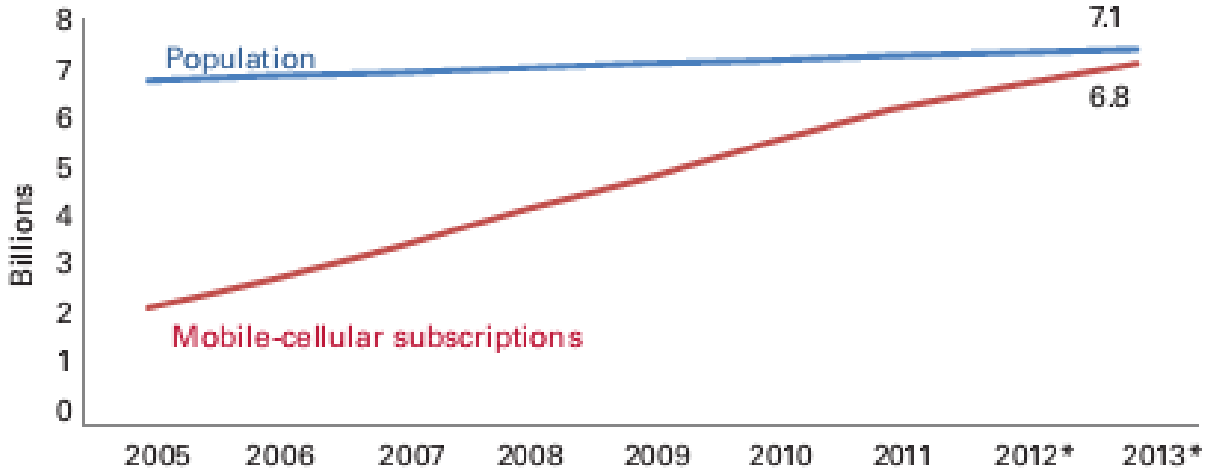
Ban Ki-moon • UN Secretary-General • 19 September 2011
• High-level Meeting on NCDs •New-York

Why is mHealth important?

The World in 2013 ICT FACTS AND FIGURES

6.8 BILLION MOBILE-CELLULAR SUBSCRIPTIONS

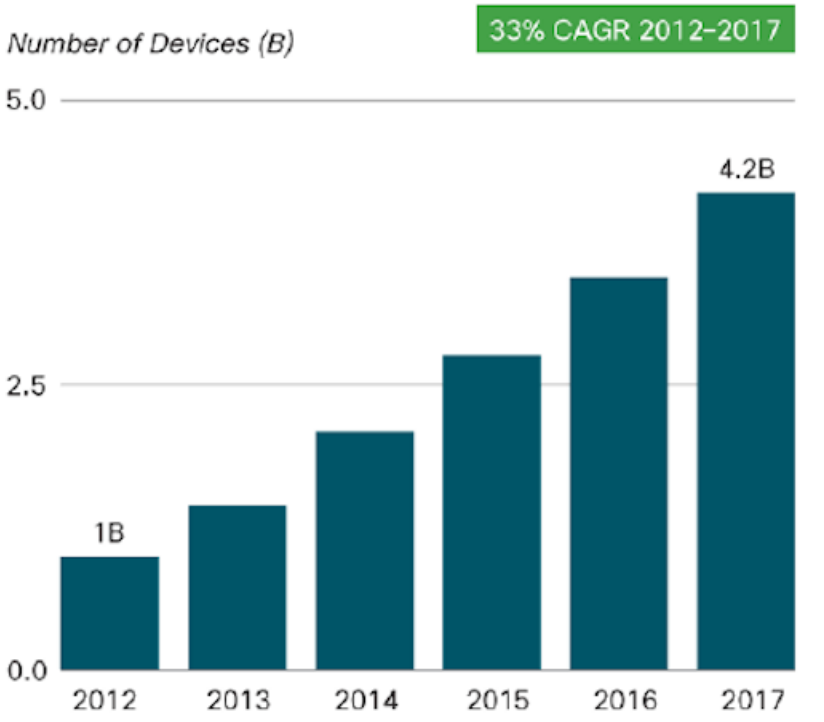
As the number of subscriptions approaches global population figures mobile-cellular growth slows



Source: ITU World Telecommunication/ICT Indicators database
Note: * Estimate

Why is mHealth important? Next 5 years:

Figure 20. Global IPv6-Capable Mobile Devices Reach 4.2 Billion by 2017



Source: Cisco VNI, 2013

Why is mHealth important? Next 5 years:

Mobility United States »

Bill Gates Says that mHealth's Time Has Come

In his column for the Project Syndicate portal, translated into Spanish and republished by Clarin.com, the founder of Microsoft and Co-President of the Bill and Melinda Gates Foundation reveals his newly optimistic outlook for the digital empowerment of users and says that it is time that healthcare reaps the associated benefits.

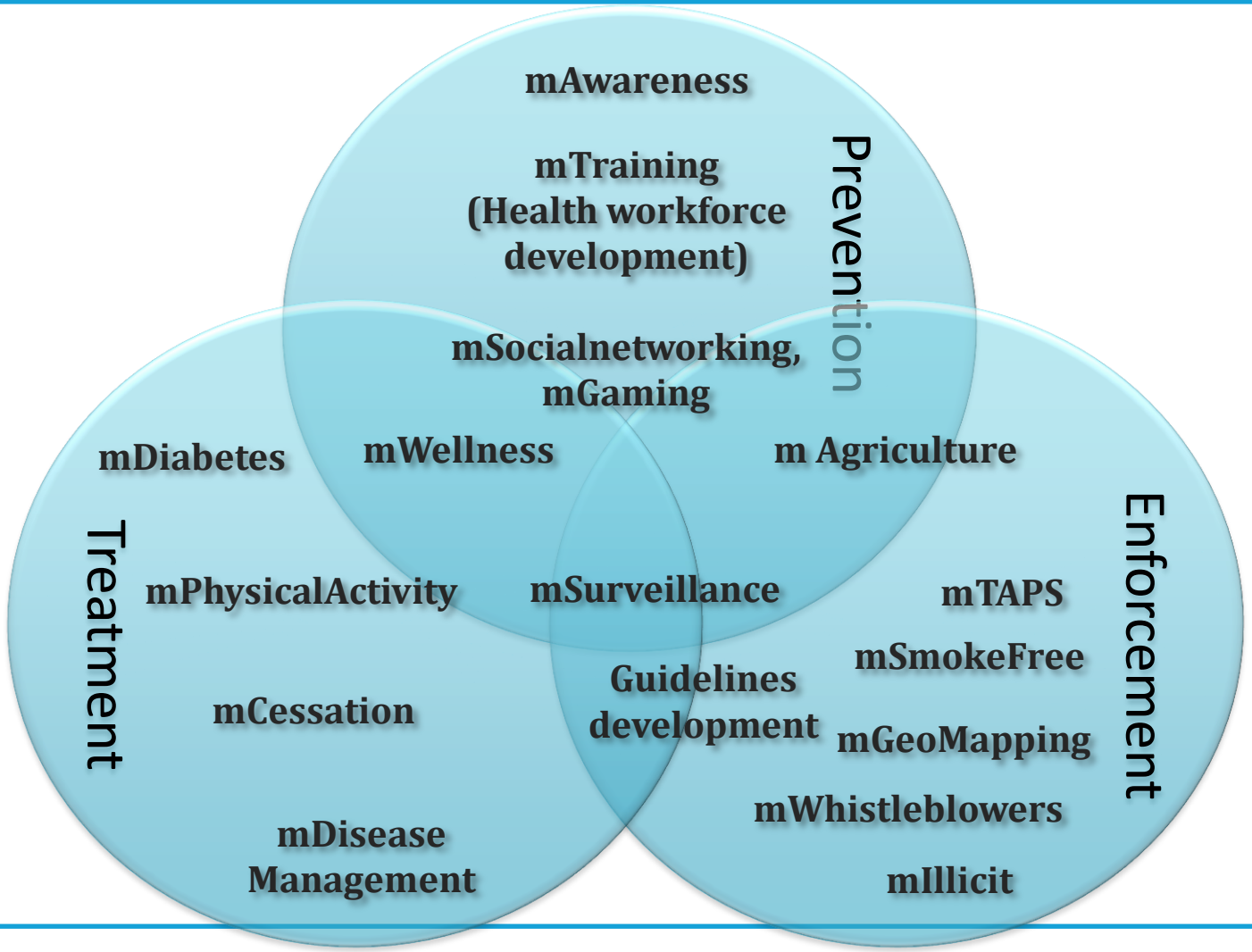
[04 Jan 2013 | Comments]

His column begins: "A decade ago, many people believed that the proliferation of mobile devices in Africa would mean a short leap to digital empowerment. It didn't. Digital empowerment is a long and ongoing process, and the mere existence of cellular technology does not immediately change how poor people meet their basic needs."

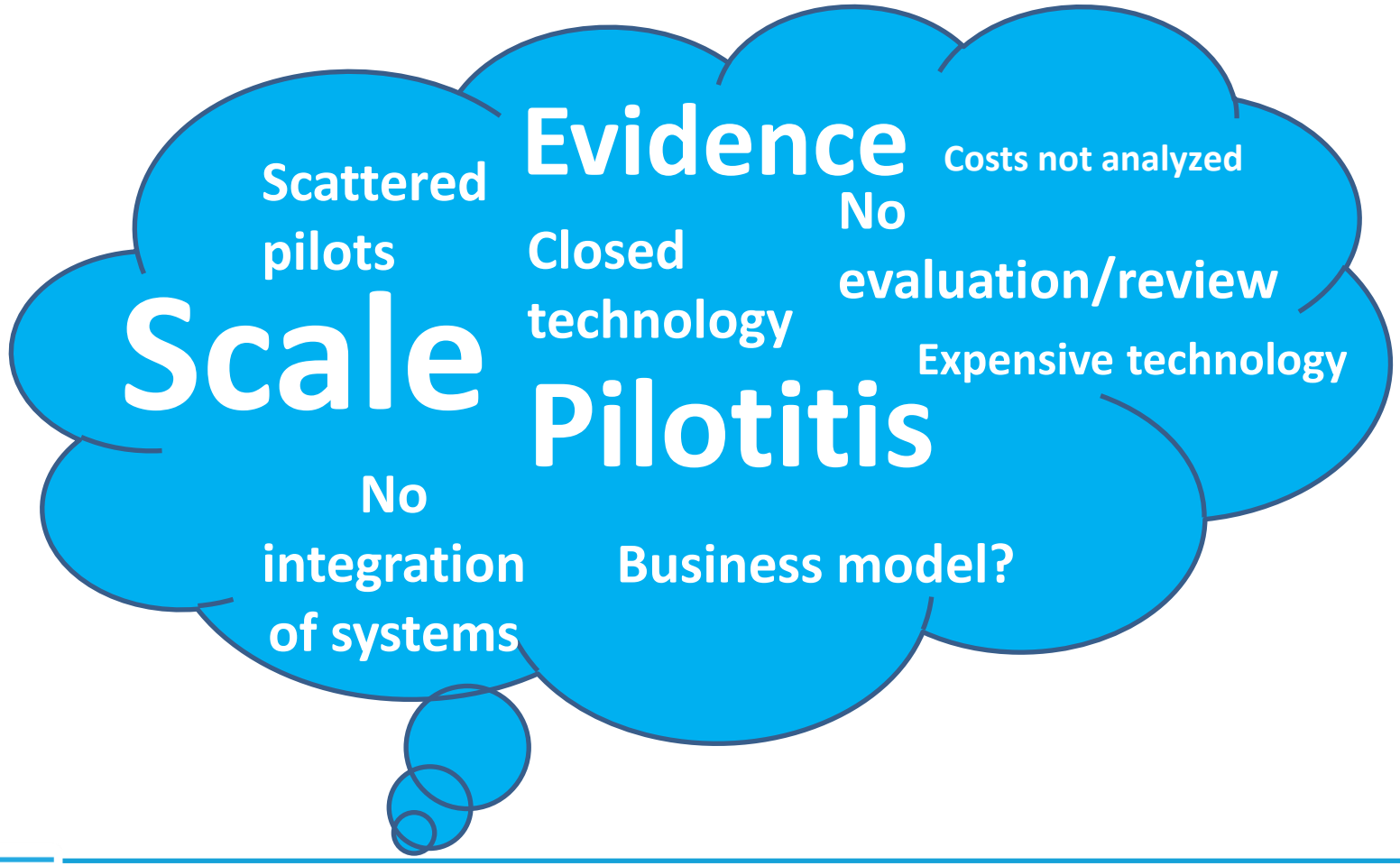
He goes on to recognize that the situation has improved and we can begin to benefit significantly from the proliferation of smartphones. "But now, after years of investments, digital empowerment is underway, owing to a confluence of factors, including growing network coverage, more capable devices, and an expanding catalogue of applications. As more people obtain access to better and cheaper digital technology, an inflection point is eventually reached, at which the benefits of providing digitally services like banking and health care clearly outweigh the costs. Companies are then willing to make the investments required to build new systems, and customers are able to accept the transition costs of adopting new behaviors." he says.

Looking at evidence for NCDs

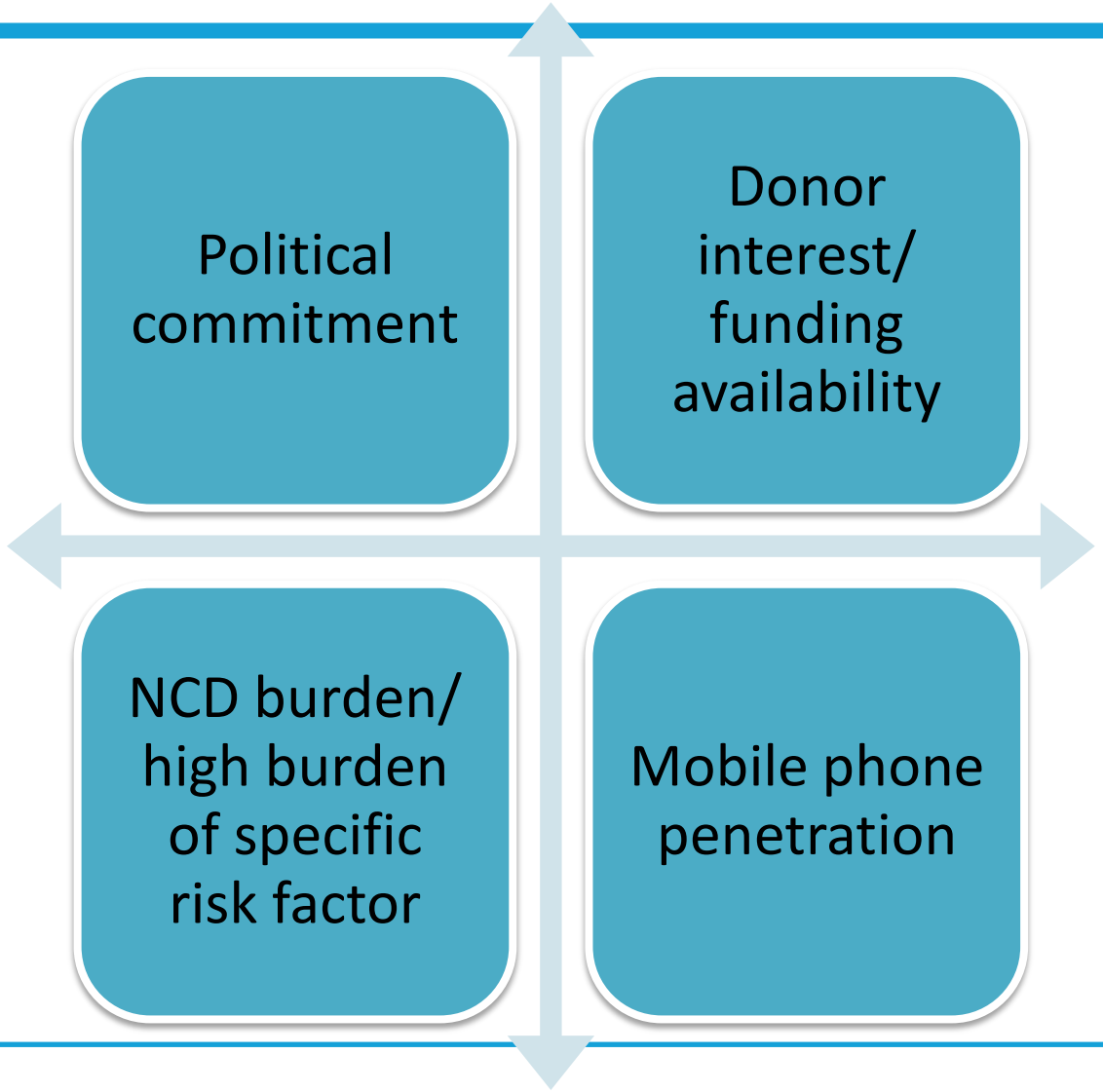
(PREVENT, TREAT, ENFORCE)



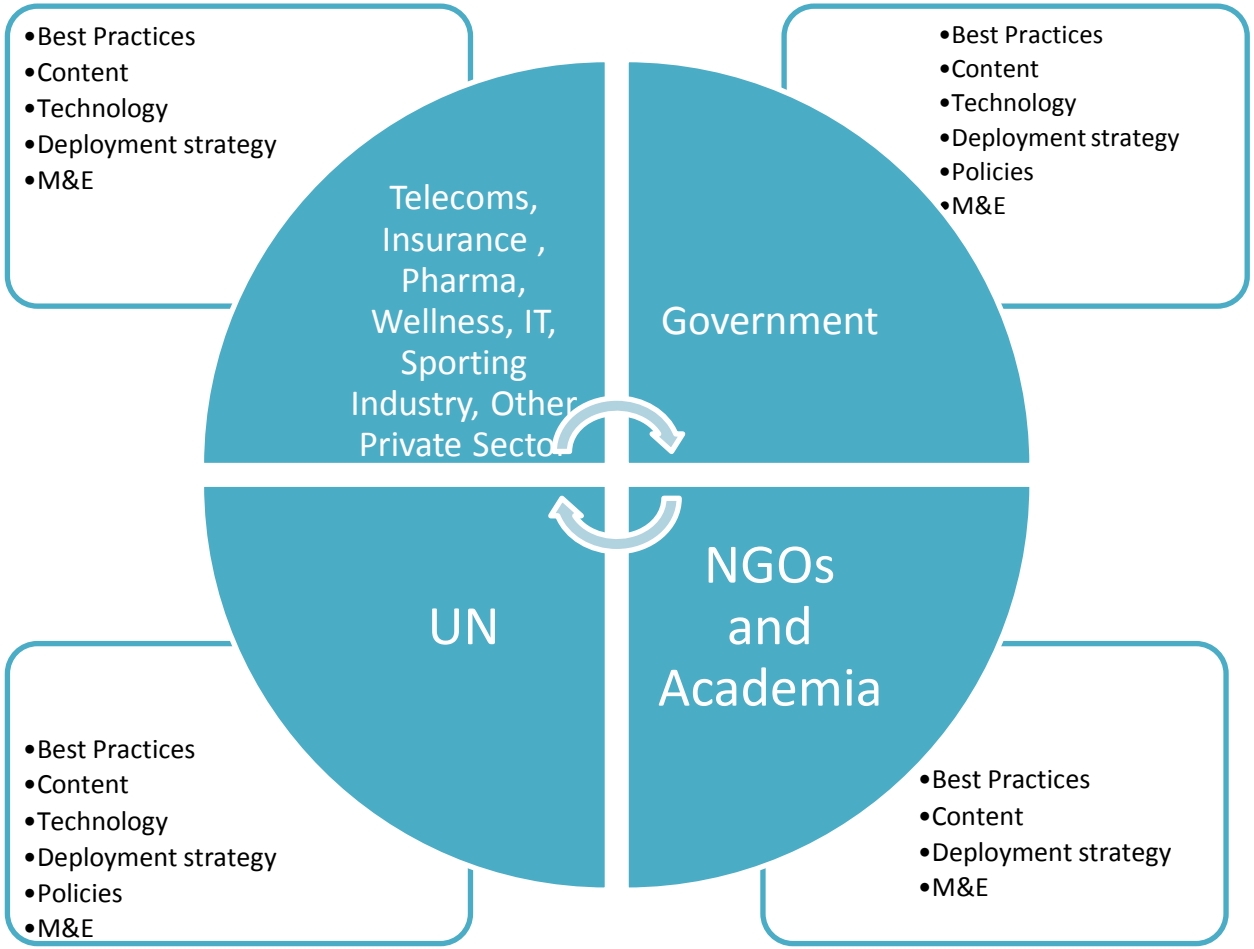
There are a number of challenges with mHealth



What is needed



Cross sectoral partnership model



Importance of transparency and accountability

- We are aware of best practices in terms of donor reporting and relations
- Partners will be recognized on ITU website and receive audited reports
- Donors can potentially track in real time the impact of their funds on end users due to the use of mobile in the project

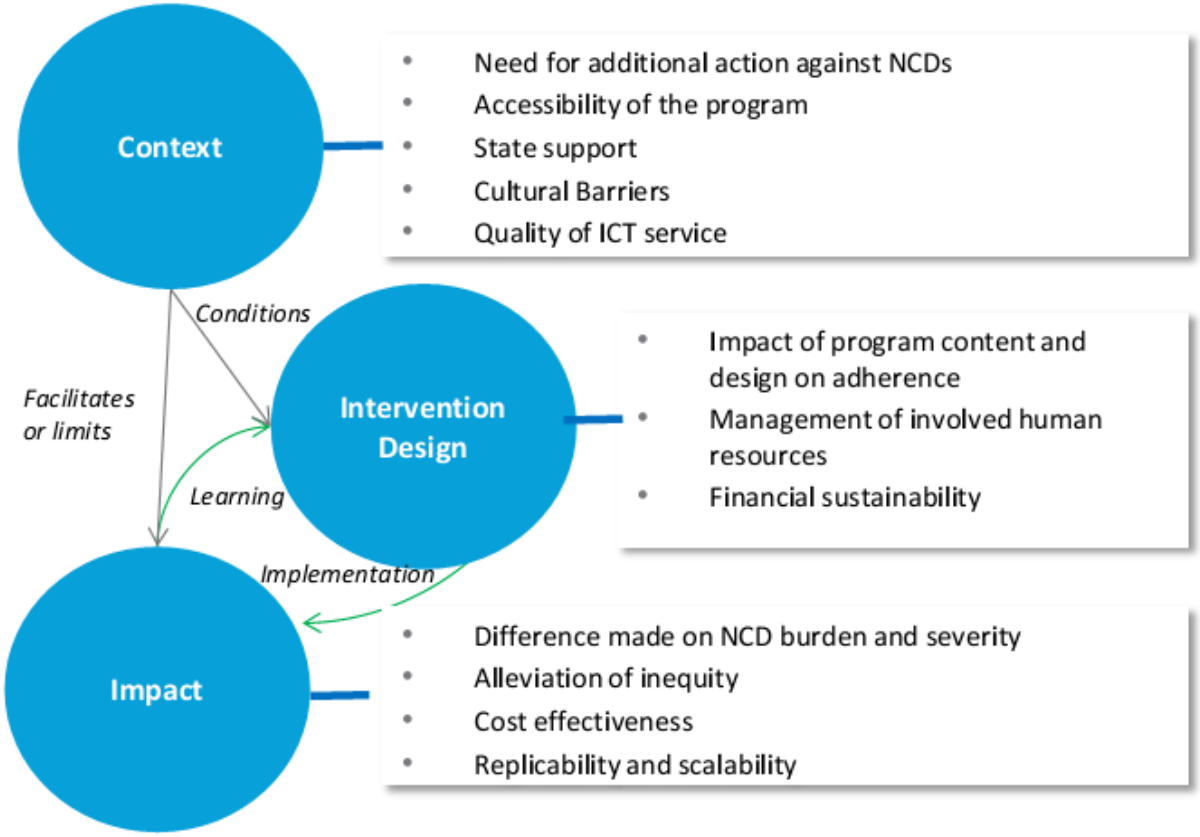
Strong Impact assessment framework

How to use our framework?

1. Define project targets
2. Screen for data available
3. Answer questions qualitatively
4. Score answers using indications provided
5. Compile scores usind data analysis tool (Excel spreadsheet provided)
6. Interpret results in light of context features and monitor scores evolution over time
7. Take decisions for action: plan modifications to intervention design; act; and screen data again

Iterate M&E

12 core indicators tailored to project specificities



WHO ITU joint program on mHealth for NCDs

Objectives

- Create global, regional and country level platforms in achieving NCD goals through technology.
- Develop cost effective, sustainable and scalable mobile NCD projects.
- Strengthen the capacity of local stakeholders towards optimal and efficient use of available resources.
- Validate the use of mobile NCD projects for results, quality assurance and cost/effectiveness and to share best practices.

The Program Objectives

NCD Problem

36 m
deaths / year

9 m
premature deaths / year

$7 tr
health-care costs & productivity losses 2011-2025

WHO ITU mHealth program on NCDs

Resource Mapping: identify "who is doing what" in mHealth for NCD space

Coordinate: technical groups & partners

Validate: NCD content and solutions

Evaluate: cost effectiveness & health outcomes

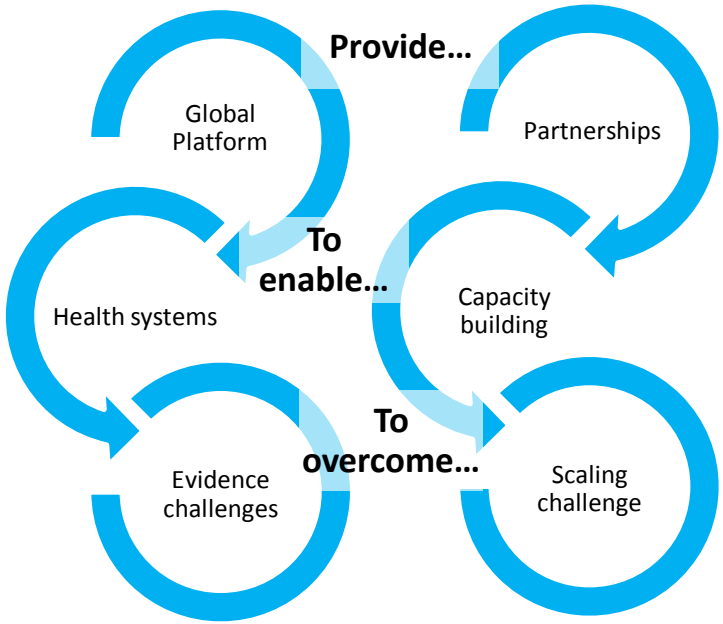
Promote: results and best practices

Build capacity: where gaps exist

Mobilize countries: to implement

Mobilize Resources: governments & partners

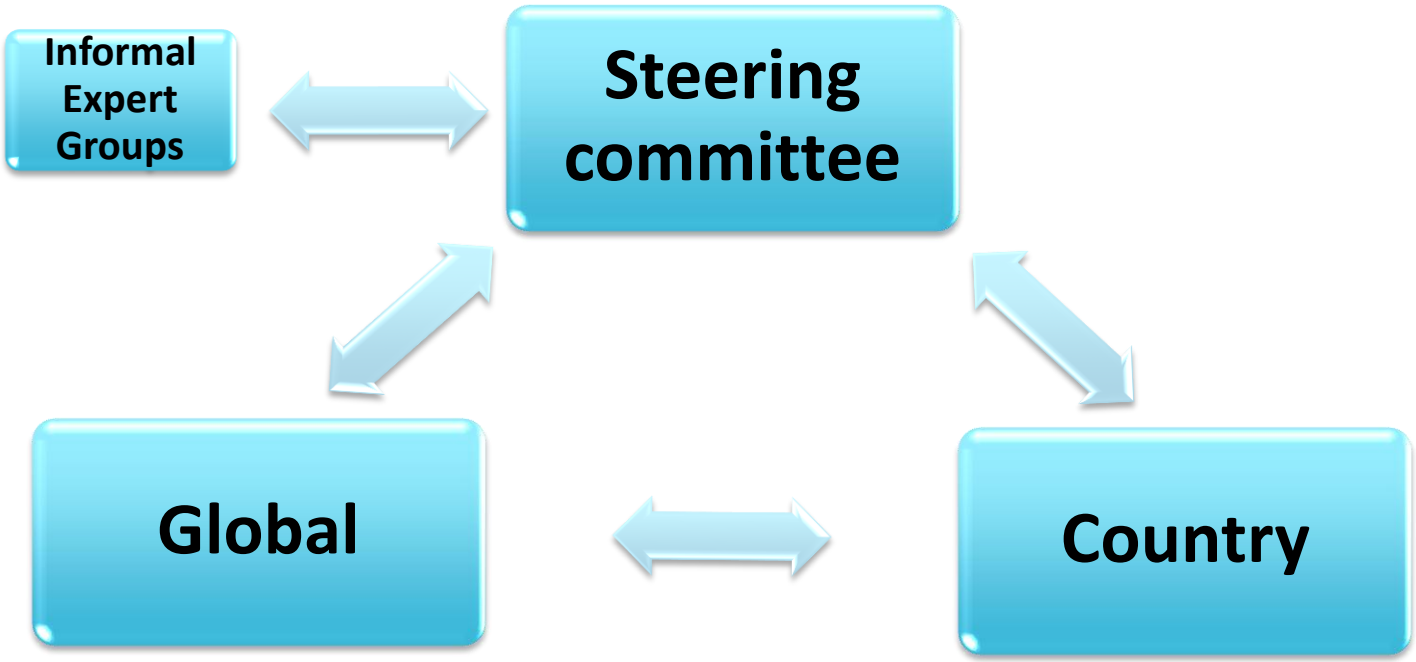
Supporting framework



“The WHO ITU joint initiative on mHealth for NCDs is a promising innovative intervention to see how to use new technologies to better health outcome"

Helen Clark • UNDP Administrator • 31 January 2013
• Harvard School Public Health• Boston, Massachusetts

Structure


Informal Expert Groups
Steering committee
Global
Country

Costa Rica : Champion example

- Commitment from the President's office from day 1.
- 1 million dollars committed by the Government
- Strong leadership from the MoH
- High end coordination between MoH , MoICT, eGovernance group
- Proposed in January, launched in country on 9th April
- Promotion material (video1, video2, video3)

World Health Assembly 2013
mHealth for NCDs

World Health Organization

SIXTY-SIXTH WORLD HEALTH ASSEMBLY **A66/A/CONF./1 Rev.1**
Agenda item 13 **25 May 2013**

- Take action to empower people with noncommunicable diseases to seek early detection and manage their own condition better, and provide education, incentives and tools for self-care and self-management, based on evidence-based guidelines, patient registries and team-based patient management including through information and communication technologies such as eHealth or mHealth.

Support ministries of information in the use of mobile phones to encourage healthy choices and warn people about tobacco use, including through the existing ITU/WHO Global Joint Programme on mHealth and noncommunicable diseases

BE HE@LTHY BE MOBILE

[1]The Secretariat will continue to implement the ITU/WHO Global Joint Programme on mHealth and noncommunicable diseases.

mHealth for NCDs
Business case

NCD control

GOOD BUYS

FOR GOVERNMENTS

Mobile health

mHealth is a great mechanism to use the mobile infrastructure for out-reach and **save significant funds** in the health sector.

mHealth for Tobacco control

mPrevention

- mAdvocacy
  - Messages sent to population on:
    - Harms of Smoking
    - New Anti Smoking Laws to help enforcement
    - Health risks from smoking
    - Supported by mass and social media campaigns
- mTraining
  - Mobile based training of Health workers
    - Help spread advocacy
    - Help direct smokers to assistance
    - Help pregnant mothers to avoid tobacco use
  - Mobile based training of teachers

mEnforcement

- mSmokeFree
  - Smoke free zone detectors
  - Smoke mesaurement devices
  - GeoTagging and Heat maps of smoke free zones, POSs etc
- mIllicit
  - Tracking illicit trade

mCessation

SMS Based

- Smokers recruited through
- Health system databases, Mass campaigns, Quit lines
- Automated messsages sent based on Algorithm to different sets (willing quitters, non willing, sponsored, by age, by level of addiction etc.)
- Algorithm to pick Different messages and different frequency based on attributes
- Follow-up

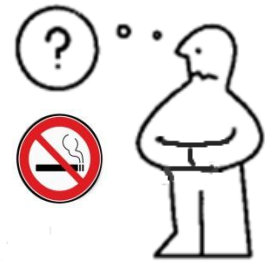
- Apps Based

mSurveillance

- Data from all other tools feed into a monitoring and evaluation mechanism for ongoing assessment and
- Measuring use and impact
- Conduct surveys for measurement

Example: the mCessation process

1. Smoker wants to quit but needs support.

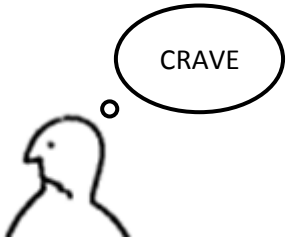


2. Smoker self-enrols or is enrolled by family/doctor.

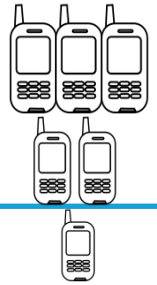
Smoker is put into a message group based on criteria such as age, dependence, commitment to quit etc.

3. Smoker receives daily messages offering guidance on managing cravings, coping with withdrawal, etc.

4. Smoker has code words to text if they need specific support at any moment.



5. Smoker receives gradually less messages as their tobacco-free time increases.



6. After 6 months of support the smoker is no longer a smoker.

mCessation

Focus : Behavioural and disease management (eg. Text message quitting assistance and advocacy etc.)

Development status:

- ✓ Projects and literature review completed
- ✓ Draft PID (project implementation plan) prepared
- ✓ Generic Costing template for scale implementation developed.
- ✓ Impact assessment model under development

Needed for completion:

- ➢ Implementation plan in Costa Rica already in place launched in April, implementation by August

Country 1: **Costa Rica**. Country 2: Bahrain **.** Other interested countries: Zambia

mHealth for Diabetes control

mPrevention

- mAdvocacy
  - Can have a progressive approach:
  - Simple SMS-based mHealth Diabetes Prevention
  - Advanced interactive Diabetes intervention where messages are tailored to individual's Follow-up
    - There is medical proof that diabetes can be prevented through change in lifestyle (e.g. physical activity and healthy diet)
    - Arogya in partnership with NOKIA to educate 1m people in India about Diabetes prevention and lifestyle change
- mTraining
  - Mobile based training of Health workers
    - Help spread advocacy
    - Help direct diabetics to assistance
  - Mobile based training of teachers

mDisease Management

One or two ways SMS or App-based / Apps Based

Existing best practices;

Welldoc - Diabetes Manager: Proven clinical impact observed during early trials reported a 1.9% A1c drop in participants

A Project Initiation Document (PID) is provided to assist in conceptualizing and planning the intervention

Needs and Situation Assessment

Stakeholders engagement

Message development, Refinement and testing

Marketing and Promotion

Monitoring and Evaluation

mSurveillance

- Data from all other tools feed into a monitoring and evaluation mechanism for ongoing assessment and
- Measuring use and impact
- Conduct surveys for measurement

Example: the mDiabetes process

Diabetic patient

Self-registers for SMS disease management support (text code) or referred by doctor

↓

Receives daily reminders for measuring blood glucose and taking insulin

↓

Receives regular advice on ways to manage diabetes through diet (e.g. replacement foods or help managing insulin levels)

↓

Result: a happy, health diabetic with reduced A1c.

Numerous studies show that mobiles help diabetics to keep blood glucose stable and are acceptable to users.

The patient controls the disease rather than the disease controlling the patient.

Pre-diabetic individual

Receives an initial outreach SMS engaging them in the programme.

↓

Individual replies to the SMS, enrolling them in the prevention programme.

↓

Individual receives SMS-based advice on small changes they can make to reduce risk factors for diabetes – e.g. diet, exercise, information on diabetes development

↓

Result: a happy, diabetic-free individual

BE HE@LTHY BE MOBILE

mDiabetes

Focus : Behavioural and disease management (eg. Text message for reminder on medication, measuring etc.)

Development status:

- ✓ Projects and literature review completed
- ✓ Draft PID (project implementation plan) prepared
- ✓ Generic Costing template for scale implementation developed.
- ✓ Impact assessment model under development

Needed for completion:

- ➢ Identification of intervention areas in the first country of operation

Country 1: **Bahrain**. Country 2: **India.** Other interested countries: UAE, Costa Rica, Qatar.

mWellness

Focus : Behavioural (eg. Text message/ Apps for diet management, physical activity tracking and motivation) and screening of risk factors .

Development status:

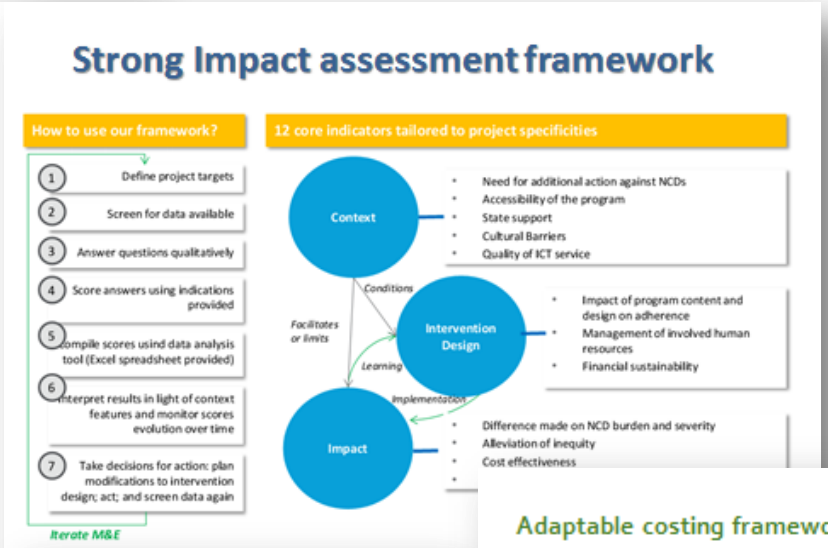
- ✓ Literature review completed and trials analysed (fewer trials compared to diabetes or tobacco cessation)
- ✓ Initial brainstorming and connection with relevant academic groups e.g. FoodSwitch program in Australia (developed with Bupa Australia)
- ✓ Plan for developing a PID (Program implementation plan document) in Q3 2013
- ✓ Possibly some clinical components for evaluation.

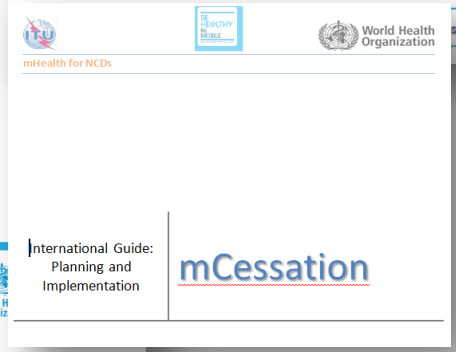
Needed for completion:

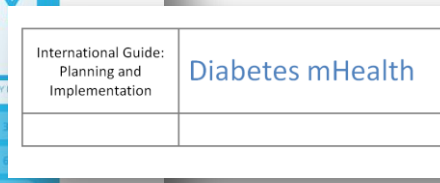
- ➢ Further scientific review of ongoing studies and project models
- ➢ Focus on an mWellness package development starting the third quarter of 2013

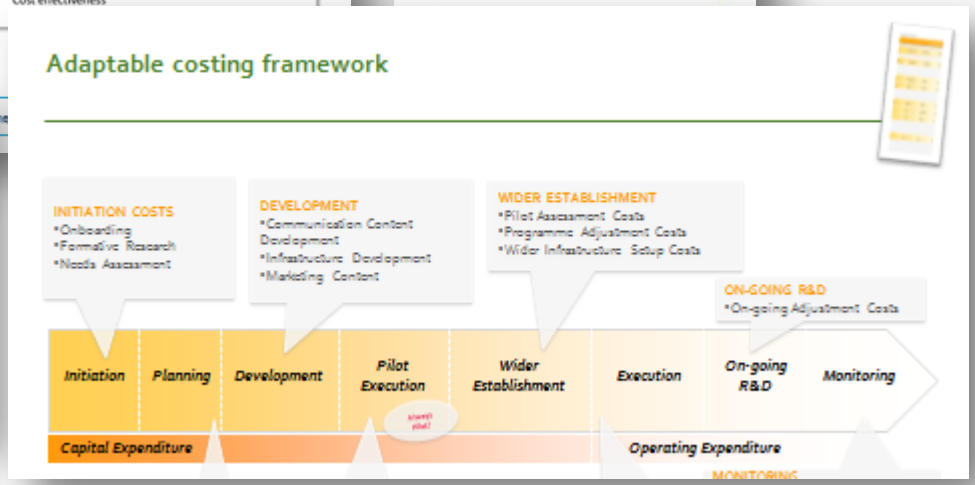
Country 1: **United Kingdom**. Country 2: **Vanuatu** (Pacific Islands) or **the Philippines**.

mHealth for NCDs Toolkit









THANK YOU!

Contact:
mHealthForNCDs@who.int