Using Mobile Technology for Health

NCD SEARO meeting

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What is mHealth?

“mHealth is defined as: the medical and public health practice supported by mobile devices such as mobile phones, patient monitoring devices and other wireless devices”
Why is mHealth important?

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
WHO-ITU mHealth Initiative: Be Healthy Be Mobile

WHO & ITU Joint programme

Public & Private Sector involvement: governments, UN, industry, academia

Scale up at national level

National and global financing (global financing $10m)
Be Healthy Be Mobile: Interventions

- mCessation
- mDiabetes
- mWellness
- mCervical Cancer
- mAlcohol
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mCessation : The evidence

- Number of successful SMS-based behavioural change programmes for smokers have been successful in the US, UK and New Zealand, Turkey, Hong Kong, Europe. Seen as being 2 to 5 times more effective.
mCessation Intervention Continuum

Use of mobile technology to **support prevention** and **increase smoking cessation**

**Awareness**
- Increase awareness
- Focus on health risks
- Supported by mass and social media campaigns

**Prevention**
- Encourage anti smoking laws
- Increase Smoke Free Zones
  - Detectors
  - Measurement Devices
- Track Illicit Trade

**Treatment**
- Cessation and Surveillance
  - Provide quit lines & Follow-up
  - Encouragement text messages
  - Use of monitoring and evaluation mechanisms for ongoing assessment and impact

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19/08/2014
Example: the mCessation process

1. Smoker wants to quit but needs support.

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

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.

19/08/2014
Smoking Cessation: Meeting 2025 targets

- Necessary to reach the 2025 targets: An increase in tobacco relative reduction to the more ambitious level of 50% in lieu of the current 30%
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 – designated team
- High end coordination between MoH, MoICT, eGovernance group
- Platform developed will be gifted back to the global initiative
- Launched early 2014
mCessation Implementation in Costa Rica
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Use of mobile technology to **increase prevention for those at high risk** and **improve self-management of disease** to improve outcomes and reduce costs
mDiabetes Awareness : The early evidence

- Periodic prompts and reminders are effective to encourage healthy behaviors
- Arogya in India targeted over a million people in a mass diabetes awareness programme
- Showing over 10% people changed behaviour through message counselling
mDiabetes Prevention: The evidence

• RCT in India

• Primary outcome: The cumulative incidence of type 2 diabetes was lower in those who received mobile phone messages than in controls.

• Reduced dietary /energy intake in intervention group;

Effectiveness of mobile phone messaging in prevention of type 2 diabetes by lifestyle modification in men in India: a prospective, parallel-group, randomised controlled trial, Ambady Ramachandran, The Lancet Diabetes & Endocrinology 1 November 2013 (Volume 1 Issue 3 Pages 191-198 DOI: 10.1016/S2213-8587(13)70067-6)
Effects of texting interventions on HBA1C for diabetes

<table>
<thead>
<tr>
<th>Study</th>
<th>WMD (95% CI)</th>
<th>Weight</th>
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<tbody>
<tr>
<td>FARIDI 2008</td>
<td>-0.40 (-0.93, 0.13)</td>
<td>15.73</td>
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<tr>
<td>FRANKLIN 2006</td>
<td>-0.20 (-1.07, 0.67)</td>
<td>5.79</td>
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<tr>
<td>HANAUER 2009</td>
<td>-0.10 (-0.97, 0.77)</td>
<td>5.75</td>
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<tr>
<td>VÄHÄTALO MA 2004</td>
<td>0.00 (-0.36, 0.36)</td>
<td>34.32</td>
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<tr>
<td>YOO 2009</td>
<td>-0.50 (-0.84, -0.16)</td>
<td>38.42</td>
</tr>
<tr>
<td>Overall (I-squared = 8.5%, p = 0.358)</td>
<td>-0.27 (-0.48, -0.06)</td>
<td>100.00</td>
</tr>
</tbody>
</table>
mDiabetes management: The evidence

- Diabetes Management: Proven clinical impact with early trials reported up to 1.9% HbA1c drop in participants

- Showed long term savings on the cost of prescribing medication for complications of diabetes is around 3 to 4 times the cost of prescribing diabetes medication.

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.

**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

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

Numerous studies show that mobiles help diabetics to keep blood glucose stable and are acceptable to users.
mDiabetes Implementation in Senegal
mDiabetes Awareness for Ramadan in Senegal

- A series of 16 text one-way messages sent every day during Ramadan to help diabetics manage their diabetes in June 2014
- High visibility and engagement at the population level

Bientôt le Ramadan! Consultez votre médecin pour vérifier si votre glycémie est normale, c’est-à-dire 0,90g/L à 1,20g/L

Les changements d’alimentation et d’horaires de repas pendant le Ramadan ont une influence sur l’équilibre de votre diabète. Il est très important d’être bien équilibré et de bénéficier de conseils médicaux pour ajuster votre traitement avant de commencer une période de jeûne. Demandez conseil. Les professionnels de santé sont là pour vous aider à préserver votre santé tout en respectant votre foi.
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Cross Sectoral Partnership Model

THE PROGRAM IS UNIQUE IN THAT IT ADOPTS A MULTI SECTOR PARTNERSHIP STRUCTURE AND ENGAGES IN COUNTRY PARTNERS AND GOVERNMENTS TO MAXIMIZE SUCCESS.
Country implementation process

Initial Engagement
Advocacy and profiling of the initiative
Engage with country following initial interest

Preliminary discussion on area of interest

Framing
Formal request and commitment from the government
Identify in country team
Financial + in-kind support

Implementation
Sign partnership and funding available
Detailed work-plan + PID adapted
Implementation
Review and follow-up
Partnership strategy

5 sectors:

• Bilateral donors/foundations/philanthropy;
• Telecoms and technology;
• Pharmaceutical companies;
• Wellness/insurance
• Sporting goods

Collective investment from umbrella organizations to be used if possible...
WHO-ITU will build assets over the course of the programme and partnerships will ensure these assets are used to scale mHealth globally after the initiative concludes.

By 2017
70% of World population have access to the mHealth Toolkit
Transformation of NCD prevention and treatment
Real-time tracking of WHO Global Monitoring Framework
There is changing political will and extreme interest...
There is changing political will and extreme interest...
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.

The Secretariat will continue to implement the ITU/WHO Global Joint Programme on mHealth and noncommunicable diseases.
“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
Countries wanting to launch mHealth for NCDs

Program components:
• Planning - NCD priority, available mHealth services, available mhealth for NCD tools
• Technology - platform, data security
• HR - Govts (MOH, IT), Public Health Schools
• Marketing - Communications strategy
• M&E – impact assessment, ROI
• Training
• Implementation - core team, task force
Countries wanting to join WHO-ITU initiative

• Government commitment / formal request
• Focal point – in government
• Working group- national stakeholders
• Operational plan (budget line)
• Implementation at a sub national/ national level- not pilot
• Willingness to learn from others/to share with others
• Adequate resources for a national rollout – approx 0.5 -1M $
THANK YOU!
For group discussion

• What is the mHealth value proposition for SEAR countries?
• What are the opportunities and potential challenges in launching mHealth for NCDs in SEAR countries?
• How can the region take leadership role in mHealth for NCDs?
mHealth Value Proposition

- Government Involvement & Ownership
- Collaboration
- Cost-effectiveness
- Scalability
- Sustainability
- Capacity
- Quality Assurance
- Partnership Models with Private Sector and NGOs
- Promotion of Innovation
- Adaptation to National / Regional Health Systems
- Investment / Sustainability Models
- Reusing IP Assets
- Training of Healthcare Professionals
- Promotion of Innovation
- Adaptation to National / Regional Health Systems
- Investment / Sustainability Models