WHO/ERS consultation
The role of e/mHealth in tuberculosis and tobacco control

Background note

Introduction- rationale for e/mHealth, TB and tobacco
Both TB and tobacco are major global public health concerns. About 9 million new cases of TB emerge each year and 1.5 million die from the disease (including HIV positive persons), despite the disease being eminently curable in the large majority of cases with an affordable course of antibiotics. The emergence and global dissemination of drug-resistant strains, some of which render the disease incurable, further accentuates this threat. Tobacco is the largest preventable cause of death in the world: some 6 million people are estimated to have died from smoking in 2010, accounting globally for 7% of all female and 12% of all male deaths. This number is set to increase to 8 million in 2030, or 10% of all deaths projected to occur that year. There is a strong association between smoking and TB. Smoking substantially increases the risk of tuberculosis (TB) and death from TB. More than 20% of global TB incidence may be attributable to smoking. Smoking is a risk factor for TB, independent of alcohol use and other socioeconomic risk factors. Smoking increases the risk of TB disease by more than two-and-a-half times. The confirmed associations between TB and tobacco lay the scientific foundations for joint action.

The application of information and communication technology (ICT) to health care is a fast moving phenomenon. e/mHealth (see definitions in Box) could provide new solutions and avenues for action on both of these diseases. ICT is steadily penetrating the most far-flung reaches of the world. The coverage of internet and portable telephony has seen a huge increase in recent years opening up new perspectives in the care of patients and the control of disease. A major benefit which work on mHealth has already witnessed is the technology’s adaptability to multiple disease areas.

Best practices to build upon
The potential for ICT to combat TB and tobacco remains underused. Nonetheless, a number of ICT initiatives have already been put in place to improve or study the effect on work processes. For instance TB patients and health care workers alike can use mobile devices to report notifications, encounters, or adverse drug reactions to centralised registers. Cash can be transferred via mBanking to reward patient adherence to treatment. Care-givers can
receive alerts on test results via a short message or email. Mobile applications and webpages can be developed to update health care worker knowledge. In the global tobacco control community, mobile phones are used to help people to quit smoking, known as mCessation. Through a new joint WHO-ITU initiative called Be He@lthy Be Mobile™ national counterparts, civil society, private sector partners and experts in international health develop mobile health solutions for noncommunicable diseases (NCDs).

While such examples are appealing and bear promise, evidence for their effectiveness is as yet incomplete and measures to ensure their successful implementation not well described. Many countries and partners have embarked on pilot projects to test out e/mHealth. These initiatives have met with different degrees of success, but few of them have been scaled up sufficiently and sustainably due to a lack of sufficient evidence, support and synergic action. The Global TB Programme of the World Health Organization (WHO/GTB) has developed a conceptual framework to better profile the possible role of eHealth in TB prevention and care³. This framework groups the key eHealth activities under four functions, namely (1) Patient care, (2) Surveillance and monitoring, (3) Programmatic management and (4) eLearning. GTB is engaged in pursuing the potential of innovative ICT to improve TB patient outcomes within the framework of the new global TB strategy looking beyond 2015. It will undertake several actions, including the expansion of the evidence base on the impact of eHealth in TB control, improved technical assistance to countries, support for studies looking at scalability, and policy development. For this purpose we will draw up an inventory of best practices in eHealth interventions, undertake reviews of the available evidence and provide guidance to countries on how to channel resources based on practices proven to be effective. There will be a need to promote discussion between health professionals and ICT experts. The impact can be enhanced by broadening the scope of action to risks for TB outside the traditional preserve of the TB programme, particularly tobacco use.

**KEY DEFINITIONS**

**eHealth** (electronic health) is the cost-effective and secure use of information and communication technologies (ICTs) for health and health-related fields.

**mHealth** is a component of eHealth, and involves the provision of health services and information via mobile technologies such as mobile phones and Personal Digital Assistants (PDAs).

**Methods and expected outcomes of the consultation**

The European Respiratory Society (ERS) is working with the WHO/GTB and WHO’s Department for the Prevention of non-communicable diseases (PND) to promote the future role of ICT in lung health. For this reason a technical consultation is being held in Geneva on 25-26 February 2015. This meeting will bring together about 60 participants representing a broad cross-section of technical expertise in TB, tobacco control and electronic health, as well as main donors, the corporate sector, and end-users who have a stake in this area. The discussions will enable system developers to interact closely with health professionals facing daily challenges to treat patients, for which creative ICT solutions could provide an answer. The consultation will provide an opportunity to discuss the available evidence for the impact of e-
/mHealth in the care and control of tuberculosis and tobacco. Interventions which have been implemented at national scale will be presented. This meeting will not produce policy guidance but is expected to catalyse some activities which could eventually provide the basis for evidence.

The consultation is expected to cover all of the 4 key functions of the conceptual framework. There will be several keynote presentations marking out the scope of e/mHealth, country experience in scaling up ICT interventions for TB or tobacco control, a review of relevant available evidence and best practices, and discussions in thematic workstreams. These workstreams will channel thinking along priority products conceived to improve TB and tobacco control. The choice of products will be informed by an online consultation of key workers held ahead of the meeting. The persons in each workstream will start putting together target product profiles (“TPPs”) for each of these priority products.

By the end of the two days it is expected that the following outcomes will be achieved:
- the state of the evidence relating to the effectiveness of mobile text messaging and other adherence aids within a package of other interventions for TB patients and tobacco cessation summarised and direction provided for other complementary research in this area;
- a listing of other eHealth interventions in TB & tobacco control, highlighting lessons learnt, assessments and recommendations, best practices, and cost-effectiveness evaluations updated with new solutions and “pipeline products”;
- drafts of the TPPs for the four priority products; and
- plans for the case studies in scalability of interventions prepared and initial contact with candidate countries established.

References and further reading

4. http://mHealth4NCD.itu.int
5. www.who.int/tb/publications/ehealth_TB.pdf

1 See also the individual Concept notes being developed to guide the discussion within the four workstreams during the meeting