



DIGITAL HEALTH FOR THE END **TB** STRATEGY: AN AGENDA FOR ACTION

THE
END TB
STRATEGY



ERS

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“Digital health will be critical in helping us reach our new global targets to end the TB epidemic.”

Dr Mario Raviglione, Director, WHO Global TB Programme

“We remain committed to supporting the use of information and communication technology to save lives.”

Professor Elisabeth Bel, President, European Respiratory Society

KEY DEFINITIONS & ACRONYMS

Crowdsourcing: services, ideas or content obtained through the contribution of a large group of people, and especially from an online community.

Digital health: a collective term for eHealth and mHealth technologies.

eHealth (electronic health): the cost-effective and secure use of information and communication technology (ICT) for health and health-related fields.

eLearning: the use of electronic technology in learning and teaching.

Gamification: the application of game techniques to education.

Information and communication technology (ICT): the means employed to provide access to information through internet, wireless networks, mobile phones and other communication or media channels.

mHealth (mobile health): a component of eHealth involving the provision of health services and information via mobile technologies such as mobile phones, tablet computers and personal digital assistants (PDAs).

Scalability: the ability of a system, network or process to handle a growing amount of work in a capable manner or its ability to be enlarged to accommodate that growth.

SMS: short messaging service for sending text via mobile phones.

VOT: video (or virtually) observed therapy with the possibility of medical care or social support.

CONTENTS

Digital health for the End TB Strategy: an agenda for action	1
Framework for digital health in the End TB Strategy	3
Evidence, digital health and tuberculosis	5
Matching TB needs with digital health solutions	8
Patient care	9
Surveillance and monitoring.	12
Diagnostic device connectivity for TB	15
eLearning	16
Digital health and the End TB Strategy	19
Uniting digital health efforts to one common purpose	21

DIGITAL HEALTH FOR THE END TB STRATEGY: AN AGENDA FOR ACTION

Scaling up the TB response in the post-2015 era through information and communication technologies

Tuberculosis (TB) remains an urgent global public health threat (1). Information and communication technology (ICT) presents opportunities to address this challenge on different fronts. Various innovative eHealth (electronic health)

and mHealth (mobile health) projects have been initiated by TB programmes and technical partners worldwide in support of their efforts to improve TB treatment and prevention. The rate

THERE ARE NOW OVER 7.5 BILLION MOBILE PHONE CONNECTIONS GLOBALLY, AND ABOUT 40% OF THE WORLD'S POPULATION IS USING THE INTERNET

by which ICT has developed and diversified in recent years can only be described as revolutionary and the consequent opportunities are huge. By mid-2015 there were over 7.5 billion mobile phone connections globally, and about 40% of the world's population had

an internet connection (Figure 1). Smartphones are progressively replacing less sophisticated mobile phones all over the world.

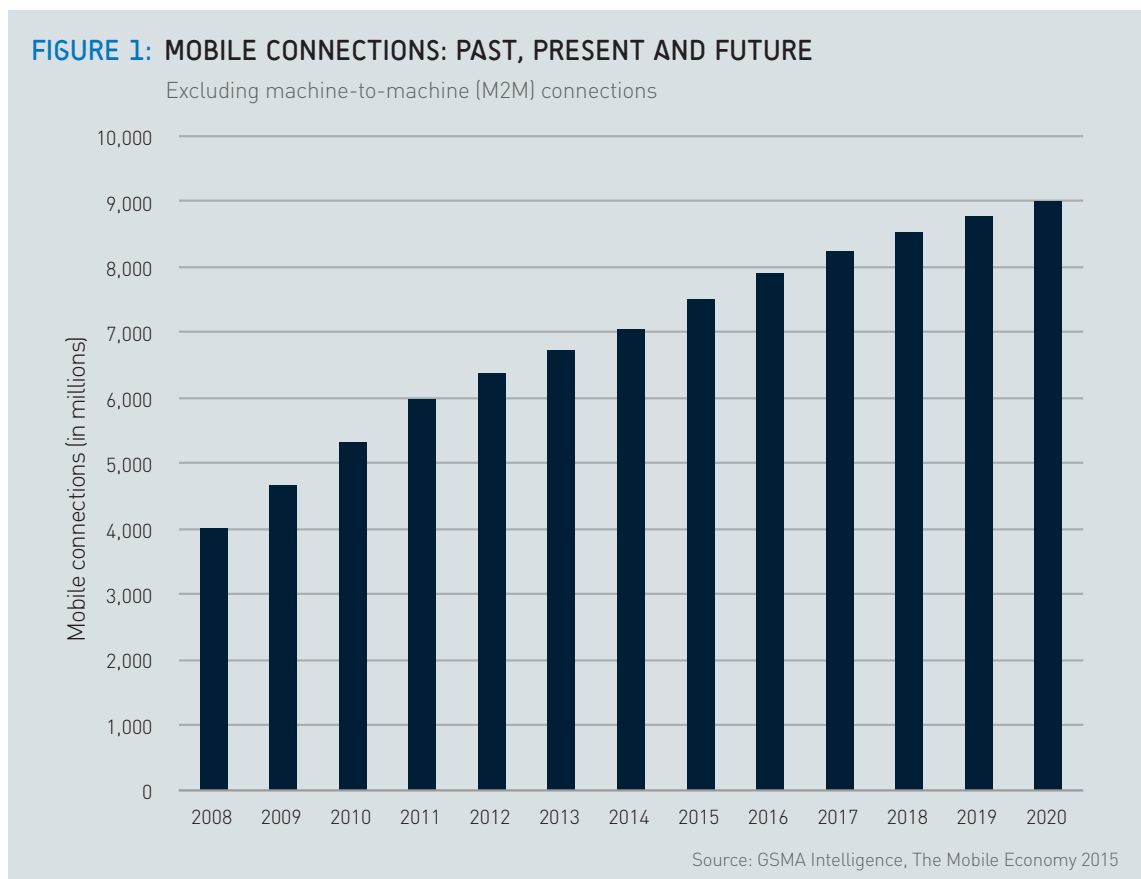


FIGURE 2: END TB STRATEGY – PILLARS AND PRINCIPLES



Why an agenda for action?

This agenda outlines the strategic direction that the Global TB Programme of the World Health Organization (WHO) is mapping out to promote the integration of digital health concepts into TB prevention and care activities. The document is primarily intended to inform TB decision-makers at national and international levels. Its alignment to the principles and the three pillars underpinning WHO's new *End TB Strategy* (2,3) (Figure 2) will help them coordinate their various efforts in one common direction in the coming years.

The products and critical activities discussed in this agenda are premised upon the pressing needs and realities of TB programmes, of which three are particularly important:

- The current difficulties faced by managers and other decision-makers to match needs in TB prevention and care to the most appropriate digital health solutions. This is a result of the limited evidence base for the

effectiveness of many digital health interventions for TB and the rapid advances in technologies of which potential users may be unaware.

- The need for an articulated and step-wise approach to develop comprehensive digital health solutions to support the *End TB Strategy*, in particular to limit fragmentation of efforts, leading for instance to multiple systems, redundancy and resource wastage.
- The opportunity to build upon, seek related synergies and align with promising ICT initiatives, both within health care and beyond, so as to increase the efficiency, scalability and sustainability of efforts.^a

WHO will support the continued collation of the evidence and best practices for various digital health endeavours in TB prevention and care. This will make a stronger 'investment case' for innovative development and the essential implementation of digital health initiatives at scale.

^a Subscribing to general healthy approaches in digital development (see also digitalprinciples.org).

FRAMEWORK FOR DIGITAL HEALTH IN THE END TB STRATEGY

In recent years, the WHO Global TB Programme has been following the development and uptake of various digital health products by TB programmes. The conceptual framework shown below classifies these initiatives into four basic functions. The utility of some of these interven-

tions for health conditions and risks beyond the immediate purpose of TB programmes – such as diabetes and tobacco control – is part of the holistic approach at heart of the 2nd pillar of the *End TB Strategy* and the United Nation's Sustainable Development Goals (4).

FUNCTIONS	POTENTIAL APPLICATIONS	SOME INNOVATIVE EXAMPLES
Patient care and “eDOT”	Video (virtually) observed treatment (VOT) [Box 1]	Kenya – Cash transfers through mobile banking to people with multidrug-resistant (MDR-TB): Kenya's extensive mobile communications network and widespread use of cellular phones enable cash transfers through mobile banking to MDR-TB patients to support their treatment.
	Drug administration monitoring devices [Box 2]	
	SMS communication for treatment and follow-up	
	Telephone or web-based interventions, for smoking cessation among TB patients	
	Enablers or incentives for adherence to TB treatment (e.g. cash transfers, free airtime)	
Surveillance and Monitoring	Notification of TB episodes to existing electronic surveillance systems [Box 3]	Swaziland – Matching MDR-TB patients' residence to treatment supporters. In Swaziland, health managers can see maps of treatment facilities and how they relate to the location of MDR-TB patients and treatment supporters' homes (as
	Reporting drug safety concerns	



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