Landscape analysis

OF BARRIERS TO DEVELOPING OR ADAPTING TECHNOLOGIES FOR GLOBAL HEALTH PURPOSES

GLOBAL INITIATIVE ON HEALTH TECHNOLOGIES
DEPARTMENT OF ESSENTIAL HEALTH TECHNOLOGIES
WORLD HEALTH ORGANIZATION

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Contributors

The following people contributed to the landscape analysis. From the WHO Department of Essential Health Technologies: Deirdre Dimancesco, Björn Fahlgren, Steffen Groth, Kittie Rasmussen, Jennifer Barragan, Lisa Stroux and Adriana Velazquez-Berumen; from WHO Eastern Mediterranean Regional Office: Adham Ismail; from WHO Country Office Jordan: Iyad Mobarek; from WHO Country Office Kenya: Nicholas Adjabu; and independent consultant Peter Illig.

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List of abbreviations

ADVAMED	Advanced Medical Technology Association
AGIT	Advisory Group on Innovative Technologies
BD	Becton, Dickinson & Company
DALY	Disability-adjusted life year
ECRI	Emergency Care Research Institute
EDMA	European Diagnostic Manufacturers Association
FICCI	Federation of Indian Chambers of Commerce and Industry
FIND	Foundation for Innovative New Diagnostics
GBD	Global Burden of Disease (study)
GDP	Gross domestic product
GHTF	Global Harmonization Task Force
GIHT	Global Initiative on Health Technologies
HALE	Healthy life expectancy
MDG	Millennium Development Goal
MHRA	Medicines and Healthcare Products Regulatory Agency
MTAA	Medical Technology Association of Australia
NGO	Nongovernmental organization
PATH	Program for Appropriate Technology in Health
PMD	Priority Medical Devices (project)
R&D	Research and development
TAGHT	Technical Advisory Group on Health Technologies
TRIPS	Agreement on Trade Related Aspects of International Property Rights
WHA	World Health Assembly
WHO	World Health Organization
WIPO	World Intellectual Property Organization
YLD	Years lived with a disability
YLL	Years of life lost (due to premature mortality)

Executive summary

Health technologies, especially those dealing with medical devices, are crucial for the services offered in prevention, diagnosis, and treatment of illness, disease, and disability. The global medical technology market was estimated to be worth over US$ 220 billion in 2006 with the United States of America, European Union, and Japan representing over 80% of the global market with an annual growth rate of 10%, implying that the technological evolution in health care will continue in the foreseeable future *(5)*. This expected growth will offer new business opportunities for medical device manufacturers and suppliers, and will pose threats to cost containment for health-care providers. It is important, therefore, for governments (particularly those of resource-limited settings) to plan accordingly: to collect and review information, including from the private sector, and to anticipate the impact of technological innovation on the supply and use of medical devices. It is equally important for the medical device industry to have an insight on actual countries' needs in terms of innovative solutions required to solve existing health problems.

This landscape analysis addresses innovation in health technologies. It reviews and analyses existing barriers for the use of innovative technologies in developing countries and presents ways to overcome them. The analysis performed is part of the Global Initiative on Health Technologies funded by the Bill and Melinda Gates Foundation. Current World Health Organization (WHO) initiatives for developing innovative technologies to address global health problems are presented. The landscape analysis examines global health technology trends, the evolution of health technology strategies in developing countries, and the roles of the business and scientific communities to come up with new technologies (or adapt existing ones) to impact public health indicators, especially in resource-limited settings.

Part 1 gives an introduction to the Global Initiative on Health Technologies as well as definitions.

Part 2 presents the objectives and describes the methodology employed for the analysis. Furthermore, it outlines the main activities and events of the project.

Part 3 provides the health technology landscape as it appears in global statistics. Data from the Global Burden of Disease study, health care spending, demographics of health-care professionals in countries, global market figures, research spending, and medical technology patents filed in different regions are provided.

Part 4 presents the factors influencing industry investment in health technologies in low- and middle-income countries. This section explores the gap in information knowledge, especially in terms of industry requirements and country needs. Factors influencing the product development process are reviewed. Ongoing partnerships and initiatives between international stakeholders are presented and analysed. Some industry initiatives identified are given as examples and a number of innovative technologies for low- and middle-income countries are showcased. The health system and its components are outlined and their relation to investment in terms of obstacles and promoting factors are analysed.

Part 5 gives an overview of WHO initiatives on health technologies with a public health focus keeping in mind the implications for health technology corporations. The final section presents the conclusions of the landscape analysis.

1. Introduction

Despite the exponential growth of scientific and technological development, the world today still faces poverty, a high burden of disease, insufficient basic infrastructure, as well as economic inequality. Improvements in health care and health systems are still needed to address these issues. In a visit to the World Health Organization (WHO) in 2009, Bill Gates identified innovation as a crucial means to improve the lives and health of people in resource-limited countries. During his meeting with WHO Director-General Dr Margaret Chan, Bill Gates said, "one of the biggest challenges today is to make scientific innovation improve the lives of the poorest" *(1)*.

This landscape analysis addresses the issue of health technology innovation by examining the background and factors that impact the likelihood of any technology corporation developing or adapting technologies for global health purposes using their own funds. This landscape analysis is part of the mandate of the Global Initiative on Health Technologies, which is funded by the Bill and Melinda Gates Foundation. The goal of the initiative is to make available the benefits of core health technologies at an affordable price, particularly to communities in resource-limited settings, in order to effectively control important health problems.

The World Health Assembly resolutions on health technologies (WHA60.29; Annex 1), and primary health care reform (WHA 62.12; Annex 2), set the framework for an unprecedented focus on health technology and provide the impetus for the Global Initiative on Health Technologies to help achieve universal health coverage, people-centred care, and community participation to address global health priorities.

Part of the initiative's focus is on the inequity of technological innovation that mainly takes place, and is destined for use, in high-income countries. Meanwhile, low- and middle-income countries are ignored, leading to huge gaps between needed and available medical technology in these settings.

Medical devices cover an extremely wide range of products including, syringes, stethoscopes, hip implants, ECG recorders, X-ray equipment, anaesthesia equipment, spectacles and dental equipment. Considered as a group they are often a low priority or even absent from the agenda in low- and middle-income countries. These countries lack policies, budgets, infrastructure (basic services, human resources, trained staff, logistics), and rules and regulations regarding medical devices. Further, innovation destined for low- and middle-income countries often is inappropriately

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