Chapter 1

Opportunities and Challenges of Integrating mHealth Applications into Rural Health Initiatives in Africa

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ABSTRACT

Within the broader field of eHealth, a new sub-specialization is emerging from the dramatic uptake of mobile phones throughout the world, namely mHealth. mHealth is characterized by the use of a broad range of mobile information and communication technologies including mobile phones, personal digital assistants, and remote medical devices and sensors to support medical and public health efforts. Mobile technologies serve as an extension of existing health information and telemedicine systems as well as stand-alone support systems for health professionals and individuals within the general public. This chapter highlights the developments and trends within mHealth and how the integration of mobile technology has been used to support the Millennium Villages Project. Each of the Millennium Villages, which serve populations ranging from 5,000 to 55,000 people, are located in ten countries throughout Africa, and they have been established to illustrate how targeted interventions valued at approximately $110 USD per capita can be used to achieve the Millennium Development Goals.

INTRODUCTION

The Millennium Development Goals (MDGs), set at the Millennium Summit in 2000, are quantified targets aimed at reducing extreme poverty, hunger, disease, gender inequality, environmental degradation, poor access to safe drinking water and sanitation, meant to be achieved by 2015 (Sanchez et al., 2007). Figure 1, developed by the World Health Organization (WHO) provides an overview of the MDGs, with a specific detailed presentation of health-specific objectives, targets, and measures of success. In 2005, the United Nations Millennium Project identified practical ways to achieve the MDGs, however, questions arose regarding sub-Saharan Africa’s ability to achieve their targets given its low productivity of food, heavy burden of infectious disease, and insufficient core
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In March 2004, the Millennium Villages Project (MVP) was conceptualized and the first villages launched at the end of 2004 and the beginning of 2005 in Kenya and Ethiopia, respectively. Ten additional villages were established in 2006 with an additional two added in 2007-2008 for a total of 14 Millennium Village clusters. These village clusters (serving populations that range from 5,000-55,000 people with an average of 30,000 people per cluster) are located in Ethiopia, Ghana, Kenya (2), Malawi (2), Mali (2), Nigeria (2), Rwanda, Senegal, Tanzania, and Uganda. The overall strategy of MVP aims to apply evidence-based practices and technologies to address agricultural productivity, public health, education, and infrastructure through an integrated approach.

In October 2007, in its effort to strengthen the infrastructure component within the villages, MVP launched a strategic partnership with Ericsson to bring enhanced connectivity and broadband access to the Millennium Villages in the 10 countries in Africa in which the project operated. In the MVP, the first sector prioritized to leverage connectivity and for targeted applications was health. Beginning with the targets presented in the figure and the selected interventions being implemented by