Chapter 7
Contribution of Information and Communication Technologies to Malaria Control in Tanzania

Restituta T. Mushi
University of KwaZulu-Natal, South Africa

Wanyenda Chilimo
Pwani University College, Kenya

ABSTRACT

The term Information Communication Technology (ICT) includes any communication device or application. In malaria control, ICTs can ease communication, improve doctors' training, and increase access to information by individuals and groups that are historically unaware of malaria. Successful malaria vector control depends on understanding causes, prevention, and treatment. This paper examines the possibilities of using ICTs to eradicate malaria in Tanzania. It also explores the coverage of the malaria subject related to Tanzania on various electronic databases and e-journals. This paper concludes that Tanzania's Ministry of Health must put forth more effort on ICT management and be more active in their approach of disseminating malaria information.

1. INTRODUCTION

Tanzania is in East Africa with the Indian Ocean to its southern part. It borders Uganda and Kenya to the north, Burundi, Rwanda, and Congo to the west and Mozambique, Zambia, and Malawi to the south. All these neighbouring countries are highly affected by malaria. Tanzania contains three of Africa's best-known lakes, Victoria in the north, Tanganyika in the west, and Nyasa in the south. Mount Kilimanjaro in the north, 19,340 ft (5,895 m), is the highest point on the continent. Because of its location being in the tropic region, Tanzania is highly infested with malaria parasite (Infoplease, 2009).

DOI: 10.4018/978-1-4666-1957-9.ch007

Malaria is a mosquito-borne disease caused by anopheles mosquito. Malaria parasite causes over 2.7 million deaths in Africa per year. Each year some, 500 million people are sick with malaria, and of those, over 2 million children (which is 90%) die of malaria cases (Goldring, 2009). A worrying trend which is emerging in the fight against malaria is that insecticides are becoming less effective against mosquitoes. Malaria parasite is becoming more resistant to anti-malarial drugs such as chloroquine and quinine (Goldring, 2009).

Ninety percent (90%) of the world's malaria cases occur in Africa of recent, malaria outbreaks are being reported in some locations of Africa such as the highlands of Kenya which were previously thought to be at elevations too high for malaria transmission(World Health Organization, 2008). There have been various opinions among scholars on account for this recent happening. Some scientists hypothesize that the emergence of malaria in areas which were previously free from the parasites is due to climatic change. For others, human migration is responsible for the spread of malaria to regions which were previously free from the parasites. Also, malaria has resurged in certain locations of Africa such as Madagascar, South Africa, and Zanzibar that previously had effective control programs. Throughout the world, malaria occurs in over 100 countries and territories. More than 40% of people in the world are at risk. Large areas of Central and South America, Hispaniola (Haiti and the Dominican Republic), Africa, the Indian subcontinent, Southeast Asia, the Middle East, and Oceania are considered malaria-risk areas (Uyaphi, 2008).

In June 2005, the United States Government selected the United Republic of Tanzania as one of the first of three countries to be included in the President's Malaria Initiative (PMI). During the launch, President George W. Bush urged African countries to fight malaria, the continent's leading killer disease, through the use of treated bed nets. The US government had set aside $1.2 billion under the initiative to fight malaria in 15 African countries, including Tanzania (Ubwani, 2008). The Tanzania Malaria Operational Plan for the 2009 fiscal year was divided into activities for mainland Tanzania and Zanzibar. This is because Mainland and Zanzibar have a separate and independent malaria control programs. The Mainland Malaria Control Programme (NMCP) serves the Mainland only (population 38.4 million) while the Zanzibar Malaria Control Programme (ZMCP) serves Zanzibar (population 1.1 million) (MOP Tanzania).

Out of the 15 PMI countries, Tanzania has the highest number of people at risk from malaria related illness. Approximately 40 million individuals of which 38.6 million are in the mainland (which puts 93% of the population in the mainland at risk) and 1.3 million in Zanzibar (where 100% of the population is at risk). Annual malaria deaths in Tanzania have been reduced to 60,000, of which an estimated 80% are children under five years of age. Approximately 14-18 million clinical malaria cases are reported annually by public health services. Over 40% of all outpatient attendances are attributed to malaria (Malaria Operational Plan (MOP) Tanzania: 2008). According to the Health Management Information System (HMIS), the disease is responsible for more than half of deaths among children under five years of age and up to one-fifth of deaths among pregnant women (MOP Tanzania, 2008). Information Communication Technologies (ICTs) is used properly may play a role in providing access to much needed information for malaria control

ICTs can be defined as an umbrella term which involve innovations in microelectronics, computing (hardware and software), telecommunications and opto-electronic. These innovations enable the processing, manipulation and storage of large amounts of information, along with rapid distribution of information electronically in digital form through communication networks (Human Development Reports, 2001). ICTs can be divided into the following categories: New ICTs; these include computers, satellites, wireless one-on-