

Use of mobile technology in malaria pre elimination setting

Introduction

Malaria surveillance is an important component of malaria elimination. Currently applicability of mobile phone is higher than any other technology in the developing countries. Thus, most of the countries have started deploying mobile phone technology for collecting and transmitting health information and services to remote populations. This study highlights the use of mobile phone technology for facilitating malaria surveillance and response systems in Zanzibar, a pre-elimination setting.

Methods

Surveillance data were collected from 2013 to 2016 through individual case reporting system, the Malaria Case Notification (MCN), developed in August, 2012. Individual case malaria data were transmitted using Unstructured Supplementary Service Data (USSD) mobile phones from health facilities to a remote server. Each District Malaria Surveillance Officer (DMSO) was equipped with a mobile phone and tablet computer running a mobile application called Coconut Surveillance. A message for each new case is sent from health facility to the server where the server generates an alert SMS to DMSO's mobile phone and tablet. DMSO makes a household follow up that will be guided through an active case response protocol and data transmitted through the MCN system. Additional case data are entered into the tablet at the facility, household and take the geo-location of the household. Each Household member is tested and new cases are treated immediately.

Results

A total of 20 district malaria surveillance officers (DMSO) were trained. 13,663 index cases were notified, of which 10,631 (78%) were followed up to the household level. A total of 43,822 household members in index-case households were tested with mRDT, out of which 2,304 (5%) were positive for malaria. Out of 13,004 index-cases followed-up and positive household members, 7,423 (57%) reported sleeping under a net the previous night while 4,849 (37%) reported a history of travel outside Zanzibar in the past one month.

Conclusion

The designed surveillance system demonstrates that active case detection and treatment of malaria cases is feasible. Routine targeted testing and treatment of population at risk alongside other preventive interventions is likely to reduce malaria transmission and malaria morbidity and improve malaria elimination efforts in Zanzibar.