factory canteen. We recommend providing safe water for drinking and cooking by changing sand in filters, chlorination and periodic testing of water. We recommend promoting hand washing practices.

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Describing the interactive model design of avian influenza : Animal infection and human infection

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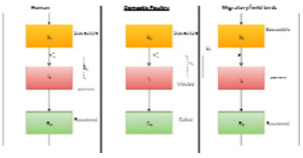
Background: Avain influenza is caused by H5N1 virus and commonly human are not infected because of the effective culminating procedure. Still the risk of infection to human is elevated due to increased contact with poultry and migratory birds. Case fatality rate of the infection increases the need to understand the dynamics of transmission of H5N1 from migratory birds to human through domestic poultry; study aims to illustrate the interactive model design of avian influenza and describing the points of interactions.

Methods & Materials: We considered the avian influenza migratory bird hypothesis as the cause of introduction of H5N1 virus in a susceptible population of poultry and human. In this study, we assumed SIR model for migratory/wild birds, SIC model for poultry and SIR model for human infection. For this study considered the recent outbreak of H5N1 in Kerala as a methodological sample and demographical, epidemiological factors from Kerala has been used for modeling purpose.



Results: Study results indicate the certainty of the migratory bird hypothesis for introduction of H5N1 in poultry. We also described the points of interaction between these three models. Meachanism of operation of the H5N1 interactive model design has been demonstrated with the projected population parameters.

Conclusion: This interactive model of avian influenza infection describes the risk of infection to human population and its transmission in a vulnerable human population. More epidemiological investigation is needed to explore the modeling pathways of the avian influenza in two species. Model design should be done with real ground level data from the veterinary department and health department so that the real crossovers can be identified and effective preventive measures could be implemented.

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The impact of a SMS-based disease outbreak alert system (mSOS) in Kenya

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Background: Epidemic-prone diseases pose serious public health risks to African countries and populations around the world. In Kenya, similar to other African countries, compromised health systems hinder the compliance to Integrated Disease Surveillance and Response (IDSR) and International Health Regulation (IHR) policies, resulting in incomplete, delayed or poor quality paper based reports from the peripheral health facilities. Widespread expansion of mobile phone penetration and network coverage in Africa offers an opportunity to overcome communication and human resource challenges and potentially improve public health practice through mHealth. Small-scale projects are rarely rigorously evaluated which limits evidence-based policy adoptions and scale-up. This study addresses the scarcity of data from a randomized controlled trial in Kenya testing the effects of a real-time reporting of immediately notifiable diseases.

Methods & Materials: A cluster randomized controlled trial was undertaken between November 2013 and April 2014 in Busia and Kajiado counties in Kenya. A total of 135 health facilities were randomized into either the intervention group where health workers received training on mSOS and routine surveillance, or a control group that received only routine surveillance training. The mHealth intervention, mSOS (mobile SMS based disease outbreak alert system) is composed of formatted SMS communication between health workers and health managers (disease surveillance coordinators at the sub-county, county and national levels), and mSOS web based portal used for monitoring notifications. Health workers used mSOS text messaging system for 6 months to send patient-level information on suspected cases that require immediate notification. Messages were sent to a toll-free number set with a telecommunication provider in Kenya. Health managers received text message real-time on their mobile phones.

Results: The results showed that timely notifications were significantly higher in mSOS intervention group (+16.6%, 95% CI=2.71-25.07), which despite large improvements remained suboptimal with only one-fifth of detected cases notified.

Conclusion: This study showed promising potential of how innovative technology could help in increasing the notification rates of suspected priority diseases and enhancing International Health Regulations compliances in resource-limited settings.

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