Animal biosecurity in the Mekong: future directions for research and development
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Proceedings of an international workshop held in Siem Reap, Cambodia, 10–13 August 2010

Editors: L.B. Adams, G.D. Gray and G. Murray

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2012
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ACIAR Proceedings - ISSN 1038-6920 (print), ISSN 1447-0837 (online)

ISBN 978 1 921962 25 7 (print)
ISBN 978 1 921962 26 4 (online)

Technical editing by Biotext, Canberra
Design by Clarus Design Pty Ltd, Canberra
Printing by CanPrint Communications Pty Ltd, Canberra

Cover: Children observing a serological survey and learning how the survey can improve their health and the health of the animals in their village (Takeo, Cambodia). (Photo: Domingo Caro III)
Making sense of local knowledge and indigenous practices on health and biosecurity risk management

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The potential for zoonotic emerging infectious diseases (EIDs) to spread worldwide is immense. Geographical boundaries can be uncertain and management of disease crises, biosecurity and health risks is a huge task that requires cooperation and understanding from many parts of the public and private sectors. A glimpse of this has been seen over the years during epidemics, including the bovine spongiform encephalopathy or mad cow disease outbreak in the United Kingdom, Hendra virus outbreaks among horses in Australia, Nipah virus spread in Malaysia and Singapore, and the severe acute respiratory syndrome (SARS) outbreaks in Asia. In the last decade, highly pathogenic avian influenza H5N1 (HPA I H5N1), or ‘bird flu’, outbreaks have also been a focus of global attention.

These zoonotic EIDs have predominantly affected countries in South-East Asia. Why is this so? One obvious factor is the way animals are raised, slaughtered and prepared for food consumption. There are certain animal-rearing practices and human health beliefs in countries in the region that need to be recognised before control programs can be designed. Governance and institutional systems also function differently in countries in the region, affecting the enactment of policies to support biosecurity risk management and preparedness.

International non-government organisations, donor agencies and other humanitarian organisations have supported countries in the region to help eradicate HPAI H5N1. Assistance is given through technical and funding support necessary to build local capacity for disease control, as well as to institute preparedness plans and manage health and biosecurity risks. Resources are poured into the establishment of emergency plans and protocols to prepare for a possible influenza pandemic to minimise global catastrophe.

Rationale

Communication is an integral element in advocating health issues, promoting the public agenda in health programs, and addressing health and biosecurity risks. Experiences from previous zoonotic EID outbreaks, such as SARS, Nipah virus and HPAI H5N1, prove the importance of engaging different stakeholders across levels (i.e. international, regional, national and local communities) through effective communication. Communication makes use of different approaches and channels, such as the mass media and multimedia as well as other technological innovations and indigenous means, to disseminate information and increase awareness of specific aspects of the program. Communication may be also viewed as a process for development and social change in disease prevention and control.

In EID events, the proactive engagement of different stakeholders at all levels through communication is more emphasised, particularly in disease crises and health risk management. Outbreak communication, crisis communication and risk communication are the subdisciplines widely implemented to address health communication appropriately. Other specialisation communication approaches are also employed; for instance in the avian influenza/pandemic influenza preparedness program, the important role of communication is strongly recognised, especially for behaviour change, given the cultural and
Communication between animal and public health sciences is required for more effective management of EIDs. The commitment and continuous involvement of all stakeholders, communication of effective messages without delay, and keen promotion of the long-term benefits of adhering to health standards and appropriate practices are some of the key elements to be integrated into the biosecurity and health agenda.

There are several additional challenges preventing effective communication from changing the behaviour of stakeholders. Also, improvements are necessary for effective crisis and risk communication management to intensify stakeholders’ commitment to, and participation in, biosecurity and health management initiatives. These challenges include:

- gaps in the knowledge of health risks and existing practices of stakeholders
- under-appreciation of technical expertise of communication specialists
- difficulties in integrating practical knowledge and practices with more appropriate communication approaches to biosecurity and health
- poor judgment and lack of stronger resolve among those involved in the communication aspect of disease emergencies, jeopardising the transparency of actual scenarios, especially in disease crisis situations.

This study investigated the cultural, social and institutional factors that affect crisis and risk communication in response to zoonotic disease emergencies and management of health and biosecurity risks. We explored methods for communication management of zoonotic EIDs in South-East Asia. While all levels of stakeholders were investigated, community interventions at the grassroots level were the primary focus.

Two central questions were addressed:
1. What are the sociocultural drivers and institutional factors that affect effective crisis and risk communication management in response to zoonotic EIDs in South-East Asia?
2. Based on the field study experience and secondary data gathered, what are the emerging issues and gaps relevant to facilitating appropriate crisis and risk communication strategies?

Subsequently, the research determined which communication approach is relevant, considering the ‘One Health’ concept; which approach is appropriate to implement, especially at the community level, for zoonotic disease emergency preparedness; and what is the best practice for managing health and biosecurity risks.

The major output of the research is the Integrated Communication Framework for Emerging Infectious Disease (ICF4EID). This communication paradigm is a combination of three dominant communication frameworks to address zoonotic EIDs in a South-East Asian context: behaviour change communication, risk communication and communication for social change. The ICF4EID is expected to be useful in decision-making and policy formulation, to manage veterinary public health programs and to improve communication of health biosecurity risks to stakeholders.

**Observations**

**Multidisciplinary approach to zoonotic EID research**

This study is appropriately placed as a multidisciplinary research project that primarily looks into crisis and risk communication in response to zoonotic EIDs—a goal shared among scholars from the health sciences and social sciences. For example, multidisciplinary studies support continued scientific discoveries into the characteristics of EIDs and how this information is processed into timely and more practical applications to address disease control and prevention.

The consequences of EID outbreaks challenge transnational politics and governance, the economy, food security, indigenous knowledge, and practices entrenched in cultural traditions and behaviour change. Therefore, it is imperative for social scientists to be involved in the development of communication strategies for EID preparedness and management. This research addressed the profound need for communication research and a deeper understanding of South-East Asian sociocultural contexts to develop alternative methods of addressing biosecurity and health risks related to EIDs.

Future studies into interdisciplinary approaches should also be explored, as complex research problems are apparent, especially in relation to sociocultural impacts of biosecurity and health risks relevant to zoonotic EIDs (ICMR Bulletin 2004; Fozdar 2008).

**Support of the ‘One Health’ paradigm**

Globalisation is a major precursor to changes in the health landscape, both at the international and national level, so it is inevitable that it would
affect how EIDs are managed. In recent times, there has been considerable interest in the relationships between human health, animal health and the environment, leading to development of the One Health concept to advocate a holistic approach to addressing EIDs.

The ability of a disease to spread rapidly, over a wide area, and to cross species is a major concern. The One Health view is expected to address the global concerns of zoonotic EIDs while considering the different situations in affected countries. Integrated global health structures are intended to influence community health at the village level, yet community health situations and local biosecurity practices like hygiene, handling of food and animal rearing could become global health concerns. This was apparent in the field data gathered. The study gave a practical view of what is happening and local conditions at the community level, which is significant information for managing diseases in developing countries in South-East Asia.

Recommendations based on sociocultural and institutional settings

As the research considered the sociocultural aspects and institutional settings in managing health and biosecurity risks, it also revealed the communication processes involved. One of the strengths of the research is highlighting the relevance of Asia-centric communication scholarship. Miike (2002) defines Asia-centric communication scholarship as

a theoretical system or a school of thought in communication whose concepts, postulates and resources are rooted in, or derived from, the cumulative wisdom of diverse Asian cultural traditions.

It considers Asian concepts, values, language use and religious beliefs in making sense of the usual practices and understanding of the local people. The Asia-centric perspective will contribute to further understanding of sociocultural norms and provide practical recommendations to address effective communication and behaviour change in disease control. It will also help to engage the local community so that they may find relevance in the new ideas and technologies presented to them.

Conclusions

Communication is an integral part of biosecurity and health risk management, and communication research with a focus on sociocultural attributes is a fundamental part of this management strategy and complements technical research on EIDs.

The Asia-centric communication approach described in this paper has been named the Integrated Communication Framework for Emerging Infectious Diseases (ICF4EID), which embraces scholarship and empirical research on EIDs. This conceptual–operational framework is predicated on the need to understand local practices and systems in order to influence positive social change in managing health and biosecurity risks. The ICF4EID can be used as the basis for future communication research in South-East Asia.

References


