

Editorial

Anticipating a new deadly epidemic

The emergence of new highly pathogenic infectious diseases (HPID) in less developed parts of the world have presented major challenges to authorities, particularly in areas with limited economic and medical resources. There is usually significant delay in the appropriate response to such an epidemic, resulting in loss of life and further dissemination. Lancet published a statement by the European Network of Infectious Diseases Commission regarding best responses to such outbreaks [1]. It represents a concise summary of what ideally needs to be done. However, most of the concepts are not immediately applicable in a poor country with very limited institutional structures, trained personnel, and financial resources. Geographic, cultural, educational, and climatic conditions often have great impact on the quality of the response to a deadly epidemic. The situation is even more critical if the responsible agent is not readily identified.

Assume that an underdeveloped region experiences a sudden significant cluster of unexplained rapid deaths. Often, there is no readily available expert team that can collect and analyze clinical data safely, secure biological samples, and study potential zoonotic or environmental factors that may be the cause. Cultural, economic, and political considerations may further hamper efforts. Reluctance to cull responsible domestic animals has caused significant loss of lives in past outbreaks.

It is important to have contingency plans ready for responses to unknown deadly infectious disease outbreaks. These must include prior contacts with organizations (local and international) with experience and means to advise and, if needed, assist in containing the outbreak. Political considerations may interfere with asking for timely help from the best sources. The considerations may have to do with fears that tourism and agricultural exports may be damaged. Constructive discussions with the responsible authorities are essential. There must also be a willingness to consider timely expert help from distant sources. An epidemic is no place to nurture egos or fears of losing "face" by asking for competent expert advice. Confronting one or more patients suspected of suffering from an unknown HPID may also present ethical dilemmas. Needed life support measure may

not be rendered to all patients in need due to inadequate facilities and trained staff. Usually, triage cannot be avoided and may be very painful. Experiences have shown that an unknown HPID can rapidly spread to other patients and health care staff as well as to the public. The many preventable secondary cases of SARS that were seen in Hong Kong and Canada, occurring within hospitals, should be a clear warning. On the other hand, Thailand had shown, by managing two imported SARS patients in general hospital ICU environments without a secondary case, that it is possible to avoid spread by following common infection control guidelines.

Not many tropical country hospitals have airflow controlled isolation rooms. Do they have an adequate supply of protective clothing and respiratory masks? Laboratories are usually crowded and staffs are often not trained in collecting and storing dangerous biologicals safely. Transporting such samples to an outside reference laboratory may be difficult if not impossible. Another cause for delay and further spread of the epidemic is that many countries have severe restrictions on transferring samples abroad and even within the country. Special arrangements and permits are required and take time to obtain.

The recommendations outlined in the EU paper of 2009 [1] must be observed wherever possible. However, we must be cognizant that this will not be possible immediately in most localities and even within so-called developed countries, at least, not rapidly enough to prevent local and more distant secondary spread. Education of all medical and paramedical staff must come first and before we experience the next SARS-like event. Local isolation of suspected HPID patients in the best way possible and collection and storage of blood, sputum, urine, and tissues using the best precautions possible, should commence immediately. It must be initiated with the first suspicious case. One does not wait for laboratory confirmation of the first suspicious HPID. There is real need to establish communication channels with regional expert centers that are able and willing to respond if a suspicious HPID event occurs. Consultation channels with veterinary and agricultural experts are mandatory so that zoonotic vectors can be identified and controlled as soon as possible. Suspected HPID

patients must be dealt with by the most motivated and skilled personnel available that will use all the available precautions and procedures outlined in the attached documents [1-3].

From the WHO-CC for Research and Training on Viral Zoonoses, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand in June 2011.

References

1. Brouqui P, Puro V, Fusco F M, Bannister B, Schilling S, Follin P. Infection control in the management of highly pathogenic infectious diseases: consensus of the European Network of Infectious Diseases. *Lancet Infectious Diseases*. 2009; 9:301-11.
2. WHO. Standard Precautions in Health Care. [cited July 1, 2011]. Available from <http://www.int/csr/resources/publications/standardprecautions/en/index.html>.
3. Editorial. Core public health function in the control of epidemics: implication of the Thai experiences for the control of swine origin influenza virus (H1N1). *Lancet Infectious Diseases*. 2009; 3:465-7.