

Summary report on the

# Consultative meeting on strategic guidance for control of emerging infectious diseases with zoonotic origin

WHO-EM/CSR/067/E

Cairo, Egypt  
11–13 June 2013



**World Health  
Organization**

Regional Office for the Eastern Mediterranean

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## **1. Introduction**

Emerging infectious diseases that are mostly of zoonotic origin are a growing public health threat in the WHO Eastern Mediterranean Region. These emerging infectious diseases often cause outbreaks with high fatalities. The Region is especially prone to these zoonotic diseases owing to large numbers of people living in close proximity to animals, the increasing volume of international trade, including transboundary mass population and livestock movement within neighbouring countries, as well as the presence of factors that are favourable for enhanced transmission. The Region also remains at the crossroads of repeated outbreaks from emerging infectious diseases. International travel to and from the Region, globalization and variable levels of health system capacity for early detection of epidemics have been identified as significant risk factors for the emergence and rapid international spread of infectious diseases with epidemic potential.

Globally, a large proportion of human pathogens – about 60% – are presumed to be zoonotic and over 800 pathogens have been defined as zoonoses. It has also been suggested that 75% of emerging pathogens fall within the category of zoonotic diseases. Most of the emerging infectious disease outbreaks seen in the Region over the past decade are zoonotic in origin. These diseases include avian influenza A (H5N1), yellow fever, Ebola haemorrhagic fever, alkhurma haemorrhagic fever, Rift Valley fever, dengue/severe dengue (dengue haemorrhagic fever), chikungunya fever, Crimean–Congo haemorrhagic fever and possibly the Middle East respiratory syndrome.

An observation of the trend of these zoonotic diseases is that new pathogens from animals particularly viruses remain unpredictable and continue to emerge and spread across the countries. The diseases are also a concern to global health owing to their epidemic potential, high case fatality ratio and the absence of specific treatment, and, with the

exception of yellow fever, the lack of vaccines available to control their spread.

As the world is increasingly interconnected, emerging zoonoses in one country can potentially constitute a threat to global health security. Ultimately, zoonoses matter not just because they are so common, but because they result in morbidity and mortality, a heavy burden on health systems and significant economic losses for countries through the loss of livestock, animal trade and travel.

The current strategies for prevention and control of emerging infectious diseases that are of zoonotic origin remain fragmented with no coherence between the animal and human health sectors. In light of this and also owing to increasing trend, frequency and geographic expansion of zoonotic diseases in the Region, the WHO Regional Office for the Eastern Mediterranean invited a group of experts to a consultative meeting on strategic guidance for control of emerging infectious diseases with zoonotic origin, held in Cairo, Egypt from 11–13 June 2013. The objective of the meeting was to discuss the development of strategic guidance for the control of emerging infectious diseases of zoonotic origin in the Region.

The meeting participants comprised representatives from the animal and human health sector of national governments of the countries facing repeated outbreaks from zoonoses, veterinary experts, representatives of WHO collaborating centres and WHO staff from headquarters and the Regional Office. The meeting supported several resolutions of the WHO Regional Committee for the Eastern Mediterranean: EM/RC54/R.4 (2007) on Growing threats of viral haemorrhagic fevers in the Eastern Mediterranean Region: a call for action; and EM/RC58/R.4 (2011) on Dengue: Call for urgent interventions for a rapidly expanding emerging disease.

## **2. Summary of discussions and conclusions**

The meeting proposed a number of strategic public health approaches for detection, prevention and control of emerging zoonoses through synergizing effective collaboration between the human and animal health sectors. Based on these approaches, the meeting participants considered the development of strategic guidance for control of emerging zoonoses in the Region with a five- to ten-year life span. The approaches that the participants identified are as follows.

### *Improving surveillance for early detection of disease threats in humans*

As most of the emerging infectious diseases with zoonotic origin have reservoirs in animals or/and in arthropods, and the occurrence of such diseases in humans often cannot be precisely predicted, investigation at the first sign of emergence of a new disease in animals that has the potential to jump species barrier is particularly important to early detect any disease threats from zoonoses. The integration of disease surveillance system between the animal and human health sectors is critical for timely gathering and analysis of data on animal diseases that have the potential to cross the species barrier. The use of syndromic surveillance system may also be helpful in detection of any threats in real time and can accelerate appropriate mitigation and prevention efforts.

### *Strengthening laboratory diagnostic capacities for novel pathogens*

Laboratory services would be more effective in early detection of any zoonoses when there is a common and agreed communication protocol for sharing laboratory surveillance data between animal and human health sectors in real time. In addition, a mechanism needs to be put into place for sharing of laboratory investigation data within the health sector, principally between the disease

surveillance and the clinical services departments. Establishing laboratory networks both within and outside the countries will enhance rapid transfer and shipment of specimens for timely diagnosis of zoonotic disease threats.

*Improving case management and infection control*

To ensure preparedness of health care facilities to the threats of emerging infectious diseases with zoonotic origin, an infection prevention and control programme should be implemented before the emergence of a disease with the standard precautions as an essential component. Standard precautions should be used in the care and treatment of all patients irrespective of their perceived or confirmed infectious status. If consistently applied, the standard precautions would help prevent most transmission through exposure to blood and body fluids before any zoonotic diseases with unknown origin are recognized. As the clinical manifestations of many of the emerging zoonoses are often indistinguishable, leading to confusion and misdiagnosis by health care workers, the use of a clinical decision algorithm for acute febrile illnesses with a more sensitive case definition may be useful for early detection of any suspected cases. Use of such a decision tree will help in guiding initial therapeutic decisions and trigger the protocol steps for further laboratory diagnosis and follow-up. Implementation of this clinical algorithm needs to be backed up by training of health care workers on case management and infection control measures as well pre-positioning of strategic supplies.

*Building effective collaboration between animal and human health sectors*

As it is difficult to predict when or where the next zoonotic disease will emerge, close collaboration between veterinary and public health specialists is important. The goal of this inter-sectoral collaboration would be to enhance inter-personal and inter-



organizational communication. An inter-agency taskforce can lead this process of fostering collaboration through regular exchange of scientific information proactively between the two sectors. The task force can also guide joint field investigation and share institutional resources within a coordinated framework of partnerships and agreement for the One Health concept. This would synergize effective prevention and control efforts at the animal–human interface.

### *Integrated vector control management*

An integrated vector control management approach should be considered for all arthropod-borne viruses as the most rational decision-making process to optimize the use of resources for effective vector control. The integrated vector management strategy is based on evidence and integrated management of mosquito vectors including rodents and promotes the use of a range of interventions, either alone or in combination, which are selected on the basis of local knowledge about the vectors, diseases and disease determinants. Integrated vector management would therefore be the most effective strategy for the control of vectors including rodents that are responsible for transmission of a number of arthropod-borne viral haemorrhagic fevers. As a first step, countries need to carry out a detailed mapping of the vectors, and their breeding sites to identify the spatio-temporal distribution of the vector species. Such information may be useful for targeting control measures for breeding sites during the inter-epidemic period. The vector control measures should seek to reduce the potential breeding sites of adult mosquito populations or their interactions with humans below that which can sustain an epidemic. Setting up a sentinel site for entomological surveillance in areas of high vector densities and integrating it with that of epidemiological and viral surveillance systems can provide meaningful information through reporting of unusual clusters of acute febrile illnesses, a suddenly rise in vector

density or a fortuitous isolation of a novel zoonotic virus. Such information can be helpful to understand the anticipated, prevailing or evolving risk.

*Reducing transmission through social and behavioural interventions*

The success or failure of interrupting the transmission chain for most of the emerging zoonoses, especially those involving intermediate vertebrate hosts, will rely on the relevance of the behavioural response of the exposed populations. To design appropriate social and behavioural interventions for such disease threats, the community's risk perception and how this relates to actual or intended behaviour, socio- or psycho-cognitive factors that characterize the exposed population's behaviour and the cultural factors that influence protective factors and sustainability of adherence to such protective behaviour will need to be considered.

*Developing epidemic preparedness and response capacities for emerging zoonoses*

The main strategy should begin with developing a national plan involving all important stakeholders. The plan should consider developing a geographic map of the distribution of zoonoses occurring in the countries using geographic information systems and other information technologies, and conducting a detailed risk assessment. Furthermore, areas at risk for expansion of zoonosis should also be identified. Human, animal and vector surveillance should be strengthened and if possible integrated with data and shared, so that vital information on risks are exchanged on a regular basis between the partners through a well-coordinated mechanism. The plan should encompass pre-positioning of strategic supplies (investigation kits, personal protective equipment, etc.), development of appropriate guidelines and standards to measure

the effectiveness of response operations and public education programmes aimed at limiting exposure to risk. Setting up a multi-disciplinary coordinating body to foster collaboration and integration between all partners and to guide, lead and provide emergency response operations during an outbreak would be the key for a successful epidemic preparedness and response plan.

### **3. Next steps**

The participants recommended that WHO initiate the development of a guidance document for the control of emerging zoonoses based on the strategic approaches proposed in the meeting, with the aim of publishing the guidance in 2014.



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