Background information for OAS Press Release.

Pandemic Preparedness: Why Bother?

The 2006 Santa Cruz Ministerial Meeting on Sustainable Development recognized that water is a limited natural resource essential for life, and that access to clean water and to sanitation services is indispensable to health and human dignity, as well as to sustainable development.

The Inter-American Program for Sustainable Development 2006-2009 encourages institutions to share best practices, disseminate information, and facilitate discussions related to strengthening policy, institutional and legal frameworks, to address water and land resource degradation problems that create the linkages between environmental degradation and health issues.

The OAS General Assembly resolution AVIAN INFLUENZA: INTER-AMERICAN COOPERATION TO MEET A GLOBAL THREAT- 2006 recognized the potential risk a pandemic due to novel influenza viruses, such as the highly pathogenic H5N1 strain of avian influenza, would pose to our societies and citizens with possible severe consequences for animal and human health, the global economy, and stability. The OAS then resolved to in concert with IICA and PAHO to, (i) affirm member states' commitment to work together in combating avian and pandemic influenza and to identify priority areas for further action and (ii) develop national, sub-regional, and regional avian and pandemic influenza preparedness and response plans.

The absence of the “New World” in the maps documenting the presence of highly pathogenic avian influenza H5N1 (HPAI H5N1) is both striking and puzzling. Despite the presence and dissemination of this novel, adaptable, and dangerous virus in Asia, Europe, and Africa over the past decade, there have been no episodes of it causing outbreaks in poultry or mammals in the Americas. Like all influenza viruses HPAI H5N1 is a naturally occurring inhabitant of wild waterfowl and can be carried by migratory waterfowl. During the course of its passage in wild and domestic birds the adaptable, hardy H5N1 virus has undergone genetic changes that have broadened its mammalian hosts and raised concerns about acquisition of pandemic potential. In some countries the virus has become embedded in the poultry, feline, and human populations where it circulates through traffic in commercial and hobby relationships.

Airborne transmission of the H5N1 influenza virus is not the only path or the necessary method of efficient transmission among animals, transmission from animals to humans, or transmission from one human being to another or more humans (1). Ingestion of infected chickens or meat fed to zoo tigers in Thailand resulted in high rates of infection, transmission among the animals, and in high fatality rates (2,3). Feral cats in wet markets, scavenging dead birds or infected offal from slaughtered birds, can be infected and excrete virus in feces and saliva (4-7). Some human H5N1 infections begin with gastrointestinal symptoms – diarrhea and fever progressing to systemic collapse, respiratory failure, and coma – without prominent early respiratory symptoms or findings (8-14): a clinical presentation that suggests a gastroenteric infection from ingestion of virus, not an airborne viral respiratory infection. The natural history of influenza A viruses suggest that the H5N1 avian influenza viruses are adapted to infecting their various hosts via the gastrointestinal route; a route perhaps even more efficiently infective than the airborne respiratory route (15).

The household kitchen of a family with a small poultry flock provides the setting for efficient transmission of the H5N1 virus from infected bird flesh to humans, and to the household cats. Imagine a woman slaughtering and dressing a chicken noted to be doing poorly: her hands and the utensils used are contaminated with H5N1 virions; all of the food served and eaten, cooked or raw, will be contaminated from the unwashed utensils and her hands. An entire family could be infected with onsets of illness occurring as a cluster, as has happened in Indonesia. A similar scenario could be produced from a man returning from a cock fight contaminated with blood from infected birds on his hands and his birds. It seems likely that healthy humans could be vectors of H5N1 influenza viruses via the kitchen and other activities where they have contact with infected birds or animals. That the woman or the man subsequently succumbs to H5N1 infection leads to the speculative conclusion that the infection has been transmitted directly from one infected human to another by the airborne route.

HPAI H5N1 continues to cause outbreaks in birds and alarming fatal (60% case fatality rate) infections among humans. The virus has diverged into three large lineages which has complicated vaccine development. Nevertheless, international research efforts are steadily clearing away obstacles to the development of vaccines for avian influenza viruses capable of transmission from

human to human (16). Furthermore, recent studies have documented that the free chlorine concentrations commonly employed in treatment for safe potable water are sufficient to inactive HPAI H5N1 (17).

How the Americas have been spared considering the global pathways of migratory waterfowl and traffic in domestic birds and bird flesh is something of a mystery and, so far, good luck. Surveillance of migratory birds in the Arctic and Antarctic polar flyways has yet to discover migrants carrying HPAI H5N1. However, recent outbreaks of HPAI H7N3 in Canada—a very different virus without the capacity, as yet, to produce infection in humans—suggest that the same factors that inhibit the intrusion of HPAI H5N1 may foster the evolution or emergence or novel Western hemisphere avian influenza viruses which could evolve pandemic potential. The "good luck" of the Americas with regard to HPAI H5N1 may foster ill placed complacency.

Public health activities in the Americas have a long history and address a multitude of problems some unique to the region such as Chagas disease and yellow fever, others of worldwide presence such as dengue fever, HIV/AIDS, and malaria. Diversion of limited resources away from existing public health priorities for an as yet unrealized pandemic influenza threat from the outside would be dangerous and counterproductive. Concerns about pandemic influenza should be integrated into and strengthen the existing capacity to address a variety of health threats. Improved communication and collaboration among human and veterinary surveillance and laboratory capacity; inclusion of environmental and wildlife surveillance; and active participation of these sectors in public education, community health programs, and university academic programs are just some of the local, regional, and national collaborations that need to be expanded.

The basic principles of containing and controlling potential pandemic pathogens are applicable for all such infections: containment and isolation, culling and safe disposal, surveillance, and the creation of pathogen specific anti-infectives and vaccines. Preparedness is not just a plan and a pot of money. Preparedness is a state of mind: enhanced curiosity about events beyond office and bureau and heightened sensitivity to the implications of ecologic interconnections so that novel fluctuations in the wildlife of national parks awakening questions about human health implications.

The Organization of American States in collaboration with the Pan American Health Organization, the Interamerican Development Bank, the United States Department of Homeland Security, the State University of New York at Buffalo, and Ecology and Environment, Inc., has begun planning a seminar series focusing on pandemic infectious disease, recognizing that the risk to the Americas from influenza may come from within, not from the outside. Further, the unique fauna and ecology of the Americas and the interactions among wildlife, domestic animals, and humans constitute a brew capable of breeding pathogens different from the pathogens emerging in the "Old World": noninfluenza pathogens that may originate in different animal and bird hosts. There is today an ambience of "pandemic influenza fatigue." Why all the fuss about something that hasn't happened despite warnings and anxieties for ten years? The importance of addressing the problem of pandemic infections now is not just to respond to threats from the rest of the world, but to recognize and respond to the threats that may be emerging in our own yard.

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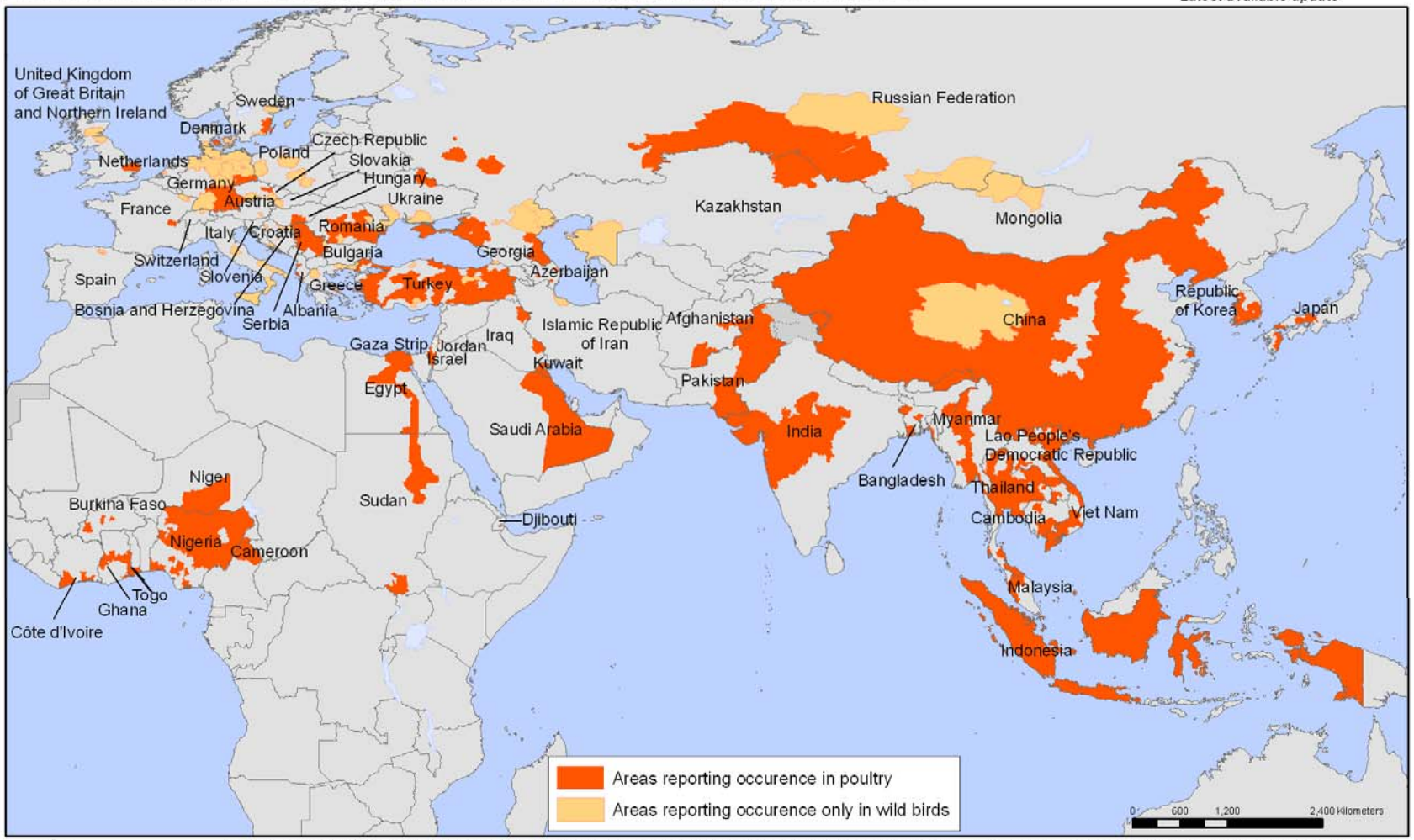
Areas reporting confirmed occurrence of H5N1 avian influenza in poultry and wild birds since 2003

Status as of 27 September 2007
Latest available update



World Health Organization

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Organisation for Animal Health (OIE) and national governments

Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS) World Health Organization