

## Editorial

### **The Bird (to Human) Flu Epidemic – If or When?**

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It has been nearly 8 years since the first child in Hong Kong died of bird flu 1997, when an avian influenza strain became known to virologists as H5N1. Since then H5N1 has spread inexorably throughout Southeast Asia's bird population and traveled west to Eastern Europe. It poses a big problem for the poultry industry. Yet, this is not a human flu outbreak, epidemic or pandemic; fewer than one hundred fifty people are believed to have caught H5N1 directly from birds (as of December 2005), and an unknown number of people are thought to have caught it from other people.

The HRN1viruses have been known to infect birds, pigs, housecats, tigers, and leopards. The virus has killed millions of poultry and at least 57 people in outbreaks in Asia since late 2003. Direct human to human cases have yet to be confirmed with any certainty. Currently, this is not a problem for human health.

Despite the situation, countless media reports, including experts on CNN proclaiming a 100% certainty of a pandemic claiming an unknown number of deaths, continue to challenge the world and worry many people. Shots for seasonal influenza have increased, and top policy officials suggest spending at record pace stockpiling a so-called treatment response with any potential efficacious medicine; many have even suggested breaking a patented product's exclusivity and making a generic drug, despite the lack of evidence that such a treatment may be effective should an epidemic emerge.

If history is any prediction of current responses, a global outbreak of influenza could mirror a pandemic as virulent as the 1918 infamous "Spanish flu" that killed between 25 and 50 million people. While many estimates of the potential death toll are wide-ranging and chilling, the current response may be more political than scientific since there were poor systems in place for the hurricane striking New Orleans despite warnings for years. This political response also is linked to the inability to cure SARS or flesh-eating bacteria that could also spread quickly and kill people.

However, just as there are seasonal weather variations, influenza pandemics do occur periodically. There were three in the 20th century. Virologists suggest a pandemic influenza will be unlike the seasonal version, more severe and deadly—the result of a genetic mutation in the virus. The recent strain of avian influenza (H5N1; bird flu) that is currently endemic in Asia has just the characteristics to be the first pandemic of the 21st Century.

The 2005 World Health Assembly recently underlined the importance of influenza pandemic preparedness and response by adopting a resolution calling on all 192 Member States to develop and implement national plans for pandemic-influenza

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preparedness and response that focus on limiting the health impact and economic and social disruption.

Today, there are interventions that can prevent deaths on a widespread scale. However, one underlying question is whether the world is prepared to address such a pandemic. It would take four to six months to produce vaccines on the scale needed to tackle influenza. Some public health experts have been able to convince governments to stockpile vaccines against the strain of bird flu that is currently circulating, but there is no guarantee that this vaccine will convey enough protection against any human strain that might emerge.

Two different articles in *Science and Nature* (August, 2005) modeled the epidemiology of influenza suggesting that, under certain conditions, the tactical deployment of anti-viral drugs might contain, or even eliminate, an outbreak of human to human transmission of the H5N1 influenza.

If there were enough doses available that were efficacious (note the “if” and the link to efficacy in the sentence), *and* governments could obtain enough doses of anti-viral drugs to stop an outbreak from spreading, such drugs would have to be deployed within three weeks of detection of the first case and in combination with household quarantine. Furthermore, to prevent the spread of disease beyond certain areas, effective anti-viral drugs would also have to be given to a high proportion of people in the surrounding region.

However, since the SARS outbreak in 2003, all countries were not fully prepared with plans and preparation for a flu epidemic or even a similar episode of SARS. Similarly, international, national, state and regional coordination is limited, in some cases due to competing priorities and budgetary realities.

This latest flu case provides an opportunity for health communicators to not only present the facts and arguments for prudent health policy by governments, but also to communicate the risk of doing nothing, and preparing the public for appropriate measures to limit the spread of disease should the pandemic arise. Additionally, the ethical imperative to place this in perspective and not mimic misplaced resources and responses to an epidemic that may never occur – like the swine flu affair in the late 1970s – should also be a responsibility of those who communicate and make health policy for the public.

Finally, if we do not communicate the reality and value of public health investment, we will pay the price for over-investing resources to address risks that have multiple sources for intervention and less actual risk to human health (e.g., bioterrorism) while neglecting the likelier reality of an infectious (e.g., HIV/AIDS) or silent non-communicable disease pandemic (e.g., tobacco related diseases) that could kill more people. It is incumbent to strengthen national responses, international coordination and appropriate medicine development and availability. We must hope that governments and policymakers empowered to protect their citizens will proportionately address the rights of citizens with measures for public health protection.