

# Avian influenza preparation: resource diversion has a cost

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Two articles from Singapore in this month's issue of the Singapore Medical Journal represent valuable contributions to the avian influenza literature. Lye et al describe an innovative symposium held recently in Singapore where clinical experts with first-hand experience in managing human H5N1 infection from Indonesia, Thailand, Vietnam and Turkey were brought together<sup>(1)</sup>. Experiences were exchanged with attendees benefiting from real and practical insights. A review of the literature undertaken by Lee et al presents a timely summary and captures much of the constantly expanding avian influenza literature<sup>(2)</sup>.

In this month's editorial, we consider the efforts involved in avian influenza preparation. As of April 27, 2006, H5N1 had affected birds in 48 countries<sup>(3)</sup>. The outbreak via migratory birds now includes Asia, the Middle East, Europe and Africa. Spread to local poultry has created a need for the slaughter of hundreds of millions of chickens as a public health measure. It is this exposure to chickens which is identified as the greatest risk factor for human infection. Despite the hype, the propensity to infect people is small. Since 2003, 205 human cases have been identified in nine countries<sup>(4)</sup>. Death has occurred in 113. Therefore, one can reasonably question whether the efforts to combat this problem are excessive.

Like the first observations of those rescuing the stranded children in *Lord of the Flies*, I wonder if an interplanetary visitor arriving today would wonder just from where did our current behaviour stem.

In Singapore, the all-cause mortality for seasonal influenza is 14.8/100,000 person-years<sup>(5)</sup>. That is, an average of nearly 600 Singaporeans each year die from human influenza. The predominant circulating subtype is H3N2. The three major pandemics of last century were caused by H1, H2 and H3 in 1918, 1957 and 1968, respectively. Of course, the pandemic at the end of the First World War, where mortality numbers were in the tens of millions, is the iconic "worst scenario" that is one of the sources of our fears.

Many in the field now are however starting to question the validity of H5N1 fears<sup>(6)</sup>. It is almost a decade since the virus was first identified. Spread is virtually worldwide, yet efficient human-to-human transmission has not evolved. Human infection with H7 and H9 avian influenza virus disease has likewise been documented, yet efficient human-to-human transmission has not developed. There is an appearance that none of these avian subtypes have a propensity to undergo the necessary reassortment (of genetic material with a human influenza virus) or adaptation to humans in their own right<sup>(7)</sup>. Furthermore, if there is a reassortment allowing efficient transmission, it is argued that the virulence could decrease<sup>(8)</sup>.

Nonetheless, "bird flu preparedness" goes on. In contrast to the 205 human H5N1 cases, we must not forget the world's other infectious disease outbreaks. Between February 19 and May 18 this year, Angola has reported 30,612 cases of cholera, including 1,156 deaths<sup>(9)</sup>. In Burkina Faso, 8,186 cases of the vaccine-preventable *Neisseria meningitidis* saw 784 deaths in just 12 weeks<sup>(10)</sup>.

More resources are required worldwide to prevent new human immunodeficiency virus (HIV) cases. Further, it is estimated that 6.5 million affected individuals would benefit from antiretroviral therapy, yet only a fraction have access to this treatment. Even for those receiving treatment, there are poor outcomes in underdeveloped countries<sup>(11)</sup>. This month, Dalfur had its food rations halved by the United Nations because of funding shortfalls, despite increasing rates of malnutrition<sup>(12)</sup>. In March this year, it was announced in Beijing that 33 nations and institutions would give US\$1.9 billion to assist "influenza preparedness"<sup>(13)</sup>.

The government of any country has the health of its people as a primary responsibility; thus, no government can ignore the avian influenza threat. In responding, however, it is necessary to divert resources. Time from typists through to prime ministers is taken by avian influenza preparedness.

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Hospital management and clinical stakeholders meet regularly and plan issues of testing, isolating, screening, treating, etc. Government departments consider necessary responses, as do businesses, schools and all organisations involving people. Research organisations redirect their attentions to this problem. A PubMed search for “avian influenza” has revealed 502 articles (nearly ten per week) in the last 12 months (May 1, 2005 to April 30, 2006).

Most developed countries have stockpiled antiviral drugs. Singapore has hundreds of thousands of doses waiting. The USA and UK have invested over US\$1.25 billion in antiviral stockpiles<sup>(14)</sup>. For a drug with quite questionable efficacy<sup>(15)</sup>, which we may never use before the expiry date, one must take one’s hat off to Roche who last year made a profit of US\$7.7 billion, with most of the credit going to Tamiflu<sup>(16)</sup>.

Medical soothsayers did not predict the two most significant recently-evolved viral outbreaks, namely: HIV and severe acute respiratory syndrome (SARS). While the latter is now not an issue in practice, it was of great concern when our own health was under threat. Furthermore, the disastrous economic impact on affected countries was clear. Avian influenza would be non-discriminatory in afflicting individuals. National economies, likewise, would be powerless. And perhaps herein lays the source of fear and the arguably excessive efforts. Are the worst of human traits on display in avian influenza preparedness?

In contrast to SARS and avian flu, the world’s wealthy countries and individual decision makers are “safe” from the outbreaks and endemic infectious diseases that are mentioned above as examples. A cynic could argue that our avian influenza efforts appear driven by self-preservation, financial concerns and career motives to the detriment of the world’s poor and powerless. We must avoid acceptance of real and institutionalised problems both locally and abroad, and especially consider the impact when resources are diverted to fight “risks”. Whenever someone such as a manager, a clinician or a researcher puts time or funding into avian influenza preparedness, then that resource is taken from somewhere.

History suggests that we are not good at predicting evolving infections and pandemics; thus, we must maintain preparedness in the broadest sense. Plans need to be adaptable, as while another pandemic is statistically inevitable, it is quite possibly not going to be H5N1 or even influenza at all.

“Bird flu preparedness” will not be wasted if the pandemic actually evolves as feared, but failing this eventuality, we can still take advantage of the activity using the opportunity to enhance the efforts in regions such as rural Indonesia, Vietnam and China. After all, it is regions with the less well-developed health infrastructure which are most likely to see the birth of pandemic threats. It is therefore in all our interests to invest in upstream surveillance and interventions. We can combine these efforts with the combating of actual issues from which people suffer now.

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