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Commentary

Avian flu (H5N1): threat of 'global pandemic' is growing and it's impact on the developing countries' economy

S. M. L. Kabir

Department of Microbiology and Hygiene, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh. E-mail: lkabir79@yahoo.com or lkabir79@gmail.com.

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When something appears to be public health issues, there is a razor-thin line between appropriate caution and over compensatory alarm. Such is the case with avian influenza, more commonly known as avain flu (H5N1). Since the potential threat of global pandemic of avain flu (H5N1) is growing and the developing countries' economy is affected to a small extent, now it is the high time to formulate effective and essential measures which include heightened influenza surveillance, early detection and appropriate pandemic preparedness plans. The appropriate use of vaccines, antiviral drugs and public health interventions will greatly reduce their economic impact in the developing countries.

Key words: Avian flu (H5N1), global pandemic, developing countries.

THE NEXT PANDEMIC WARNING?

Viruses carrying the H1N1, H2N2 and H3N2 combina-tions were responsible for the Spanish flu of 1918, the Asian flu in 1957 and Hong Kong flu in 1968, respectively (de Jong et al., 1997). An influenza A virus of the H5N1 subtype has now been identified in a human patient, raising discussions about its potential to spark a new human influenza pandemic. Although swine flu has stolen the limelight from bird flu since it was first spotted in April 2009 (WHO, 2009a), but some still see the H5N1 virus as a significant threat to human health. Since November 2003, nearly 400 cases of human infection with highly pathogenic avian influenza A (H5N1) viruses have been reported by more than a dozen countries in Asia, Africa, the Pacific, Europe and the Near East (CDC, 2009). By March 10, 2006, 97 people in Vietnam, Cambodia, Thailand, China, Indonesia, Turkey and Iraq had died from the disease (WHO, 2009b). Simultaneously, avian flu has killed millions of birds world-wide over the past few years (CBC News, 2009) . So, it is a matter of great concern now whether another wave of avian flu pandemic is waiting or not.

CURRENT OUTBREAK OF AVIAN INFLUENZA (H5N1) IN DEVELOPING COUNTRIES

Since its emergence, H5N1 highly pathogenic avian influenza (HPAI) has attracted considerable public and media attention, because the viruses involved have been shown to be capable of producing fatal disease in humans [as of June 2008, 385 human cases of HPAI H5N1 (leading to 243 deaths) have been reported], which has given rise to the fear that the virus might acquire the capacity for sustained human-to-human transmission and thus cause a global influenza pandemic (Otte et al., 2008). Similarly, the current outbreak of avian influenza A (H5N1) among poultry in Asia and Europe is also an example of a bird flu outbreak that has caused human infections and deaths. 10 countries (Bangladesh, China, Ivory Coast, Germany, Hong Kong, India, Laos, Mongolia, Nepal, Russia and Vietnam) have reported H5N1 avian influenza in domestic poultry/wildlife in 2009 (OIE, 2009a). However, Bangladesh has notified one new outbreak of highly pathogenic avian influenza H5N1 in farm birds in Chittagong on September 2009 and Ivory Coast has found H5N1 in wild birds in Abidjan on October 2009 (OIE, 2009b). Similarly, the Ministry of Health of Egypt has reported a new confirmed human case of avian influenza A (H5N1) on 27 November 2009 and of the 89 cases confirmed to date in Egypt, 27 have been fatal (WHO, 2009c). Moreover, the Ministry of Health of Vietnam has reported three new confirmed cases of human infection with the H5N1 avian influenza virus, including one fatality on 4 March 2010 (WHO, 2010a) and the Ministry of Health of Egypt has announced five new cases of human H5N1 avian influenza infection on 4 March 2010 (WHO, 2010b).

Table 1. Impact of HPAI on price and volume of broilers/poultry meat sold in major markets of affected developing countries.

Country, beginning of market shock	Price effect	Volume effect	Duration	Reference
Cambodia, Jan. 2004	75% drop	80–90% drop	By March 2004 prices back to pre-outbreak levels	VSF (2004)
Indonesia, Jan. 2004	50–85% drop	33% drop	By May 2004 prices back to pre-outbreak levels	Dolberg et al. (2005) Rushton et al. (2005)
Vietnam, Oct. 2005	50–60% drop	50% drop	In Dec. 2005 prices were still 30% below pre-HPAI level	ACI (2006)
Egypt, Nov. 2005	30% drop	n.a.	Prices took about 6 months to recover	Albrechtsen et al. (2006)
Nigeria, Feb. 2006	n.a.	80% drop	Four months later, still 50% lower than pre-outbreak	Nicita (2007)
Bangladesh, Feb. 2007	8–13% drop	n.a	Prices were back to pre-outbreak level in July 2007	Alam et al. (2008)

The current outbreak of avian influenza (H5N1) in developing countries has given us signal for further influenza pandemic and now it is the high time to set up appropriate pandemic preparedness plans for combating such influenza pandemics.

ECONOMIC IMPACT OF THE H5N1 VIRUS IN DEVELOPING COUNTRIES

Globally, among the livestock industries, the poultry indus-try has achieved the highest growth rates over the past decade [2.1% annual growth in poultry numbers and 3.7% annual growth in meat production (Otte et al., 2007)], much of which is occurring in developing coun-tries. However, direct and immediate impacts of highly pathogenic avian influenza outbreaks in poultry flocks result from the loss of the current value of birds, which die or are culled, and from foregone income from poultry raising during the ensuing interruption of production. Large numbers of poultry have died from HPAI or been culled to control the disease since it spread widely from 2004 onwards (Otte et al., 2008). In Thailand, 63.8 million birds were culled from the onset of HPAI outbreaks in 2004 until 2006 (NaRanong, 2007), whereas for Vietnam the figure amounts to around 50 million birds (McLeod and Dolberg, 2007). For Indonesia, Hartono (2004) reported that 17.1 million poultry (15 million layers, 2 million parent stock and 0.1 million broilers) died or were culled between July 2003 and January 2004, before the official announcement of HPAI by the government. In Nigeria, 0.9 million birds died or were culled in comer-cially-oriented farms by mid- June 2006 (Roeder et al., 2006). In Egypt, an estimated 36 million poultry have died or been culled as a result of HPAI (Otte et al., 2008). The impact was particularly severe in the Governorates of Kayloubia, Sharkia, Giza and Ismaelia in terms of average bird losses per rural person (Otte et al., 2008).

In Bangladesh, between February 2007, when HPAI appeared, and June 2008, 1.6 million chickens were cull-ed and further 277,000 died in a total of 287 outbreaks. In addition, nearly 2.2 million eggs were destroyed on affected properties (Chakma, 2008).

Furthermore, the drop in demand caused by consumer anxiety about the risk of contracting HPAI can lead to a severe depression of the price for poultry and poultry products, thereby affecting the poultry industry through the combined effect of lower volumes and depressed prices. The overall impact of such a market shock will, to a large extent, depend on its duration. Table 1 presents an overview of the information on the impact of HPAI outbreaks on chicken prices and volumes traded that could be compiled from the grey literature. On the other hand, direct losses and income foregone in the poultry sector can have repercussions on other economic sec-tors (Otte et al., 2008). The magnitude of these cross-sectoral impacts depends on sector linkages and the severity of the impact on the poultry sector (Otte et al., 2008). Therefore, time demanding effort must be made for the development and implementation of pandemic preparedness plans in order to assist those peoples engaged in poultry sector from developing countries especially in rural areas to combat these economic losses and health crisis.

CONCLUSION

The outbreak of avian flu once again demonstrates the need for developing countries to be prepared to face unexpected shocks at all times. However, the burden of disease they cause and their economic impact could be greatly reduced by the appropriate use of vaccines, antiviral drugs and public health interventions. Strength-ening influenza surveillance, developing pandemic preparedness plans, improving control of avian influenza,

and increasing coverage of annual influenza vaccination are the cornerstones of a safer world. Using local resources and capacities in each country as well as international collaboration will help achieve essential goals. Otherwise, developing and industrialized countries alike could be faced with an unprecedented global health crisis.

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