

1. Introduction

Highly pathogenic avian influenza (HPAI) has seriously affected poultry farmers whenever and wherever it has appeared. Historically, outbreaks of HPAI have occurred on all continents. The current avian influenza epidemic, caused principally by the H5N1 strain, has been continuing since it was first recognized in the Republic of Korea in December 2003. Thailand, Cambodia, the Lao People's Democratic Republic, India and Malaysia have been able to eliminate disease occurrence, but recrudescence, or reintroduction of disease, has been observed. Viet Nam and China have controlled extensive outbreaks through the widespread application of vaccine, while Indonesia and Bangladesh report widespread occurrence with and without vaccination.

Two circumstances have increased international concern about the behaviour and spread of this disease. The first is that 433 cases of transmission of the virus to humans had been recorded as of 2 June 2009, with 262 deaths reported.¹ There is increasing concern that in the future the virus will adapt to enable human-to-human transmission with ease and result in a global human influenza pandemic. Second, the disease has now spread over a much greater geographical area. Between August and December 2005, the disease was reported in the Russian Federation, Turkey, Croatia, Romania and Ukraine. In February 2006, it spread to the African continent, where the first notification of the H5N1 HPAI strain occurred in Nigeria. The occurrence of the disease in Africa is of major concern, putting at immediate risk the livelihood of millions of people relying on poultry production for income generation and sources of protein.² If this situation runs out of control, it will have a devastating impact on the poultry population in the region and increase the exposure of humans to the virus.

It is difficult to predict the severity of either of these threats. The virus has been present in China since at least 1996, and it probably disseminated to Southeast Asian countries at least some months before it developed into the epidemic that began in 2003. There has been enormous opportunity for the virus to infect humans, and such infection has probably occurred much more than has been identified, yet adaptation for human-to-human transmission has not yet occurred. However, this does not imply that it will not occur, and the greater the shedding of virus from infected poultry, the greater the risk of adaptation leading to a human pandemic. Similarly, despite opportunities for virus introduction by wild birds to poultry or from poultry to wild birds, by far the most important aspects of

¹ World Health Organization. 2009. Cumulative number of confirmed human cases of Avian Influenza A(H5N1) reported to WHO (available at http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_06_02/en/index.html).

² In this document, poultry is defined as "all birds reared or kept in captivity for the production of meat or eggs for consumption, for the production of other commercial products, for restocking supplies of game, or for breeding these categories of birds". This definition was adopted by the OIE in the 2005 edition of the *Terrestrial Animal Health Code* (see chapter on avian influenza).

the spread and maintenance of the disease are the various approaches used around the world in poultry husbandry practices, marketing and trade. At the time of this writing, the areas of great concern are China, the countries that border the Bay of Bengal (Bangladesh, Myanmar and India), Indonesia, Pakistan, Egypt and Nigeria. The H5N1 virus in its highly virulent form has not been reported in the Americas or in Oceania.

This manual is intended to assist national animal health authorities and other stakeholders in preparing for a possible incursion of HPAI, detecting disease at the earliest opportunity and responding as rapidly as possible to contain the disease after it is detected.

The international community has a vested interest in minimizing the spread of this disease. FAO, the World Organisation for Animal Health (OIE) and the World Health Organization (WHO) are the key agencies for coordinating an international response to the threat. This manual also assists countries in determining the means of obtaining outside assistance to improve their preparedness for highly pathogenic avian influenza and its detection.