

BOOKS & ARTS

Timely tale of avian flu

A gripping account of the spread of the bird flu virus across southeast Asia holds lessons for the global management of pandemics such as swine flu, explains **Ab Osterhaus**.

The Fatal Strain: On the Trail of Avian Flu and the Coming Pandemic

by Alan Sipress

Viking: 2009. 400 pp. \$27.95

As the world responds to the rapid spread of swine flu (H1N1), it reminds us how much we have learned from other feared influenza pandemics, including some that did not materialize. One such example is that of avian flu (H5N1), which led to the deaths of more than 250 people in southeast Asia from 2003 onwards. In *The Fatal Strain*, journalist Alan Sipress tells that story through gripping first-hand accounts from his travels to the epicentre of the outbreak, and offers lessons for the management of future global influenza pandemics.

Sipress spoke extensively to patients infected with bird flu, their family members, doctors, scientists and national and international public-health officials. After explaining the origin of the H5N1 virus in wild birds and poultry, he describes the first fatal infection in a young boy in Hong Kong in 1997, and the identification of the virus by local and Dutch scientists. The

infection of a further 17 people in Hong Kong, of which 5 died, triggered a heroic public-health intervention by the Hong Kong authorities, advised by the World Health Organization (WHO). The culling of all the birds in the live-bird markets led to the immediate interruption of bird-to-human transmission. The virus's high fatality rate — more than 60% — prompted the WHO to advise national governments to prepare for the worst, although infection never reached pandemic levels.

Sipress points out differences between this H5N1 threat and the Severe Acute Respiratory Syndrome (SARS) epidemic — caused by the SARS coronavirus — which emerged at the same time as H5N1 and involved research by many of the same scientists. In the case of SARS, international collaboration coordinated by the WHO stopped the outbreak soon after it had started. But SARS was a relatively soft target compared with an influenza pandemic: in most cases, the SARS coronavirus spreads only after the third or fourth day of illness. By contrast, influenza can be transmitted when the first symptoms are not even apparent.

Sipress follows further human H5N1 cases in China, Vietnam, Indonesia and Cambodia,

including the few events in Indonesia in which human-to-human transmission was observed. He pays relatively little attention to the spread of the virus by wild birds and other means towards the Middle East, Europe and West Africa. Instead, he focuses on the underlying causes at the animal–human interface, highlighting important factors such as major changes in agricultural practices and mass production of poultry instead of the traditionally reared backyard flocks; the role of cock-fighting practices; and the consumption of duck-blood pudding and other raw poultry products. He also stresses the crucial role of Asia's live poultry markets, as first proposed by virologist and world-renowned influenza expert Rob Webster of St Jude Children's Research Hospital in Memphis, Tennessee.

Several political issues arose amid preparations for the expected avian flu pandemic. An intriguing example at the national level is the courageous role of another virologist, Yi Guan from Hong Kong University, who did part of his training with Webster. Guan took on Chinese authorities in his search for the origin of the virus in China's live-bird markets and wildlife, and did the same for the SARS coronavirus.

Sipress's book also highlights how the global prospect of a flu pandemic has deepened the divide between the rich and the poor. For example, the refusal of the Indonesian health minister, Siti Fadilah Supari, to collaborate and share further virus data with international and national organizations such as the WHO, the US Centers for Disease Control and Prevention or the US Naval Medical Research Center was based on a deep distrust that resulting vaccines or other intervention strategies would be available only to a limited number of wealthy nations. This rebellion spread from Indonesia to other countries such as Brazil, India and Thailand.

The Fatal Strain is a marvellous history of the involvement of individual people, professionals and organizations in the preparation for a major public-health disaster. Although Sipress is convinced that “the most important line of defence is not a lab or a hospital, but is the farmyard gate”, scientists will enjoy it. ■

Ab Osterhaus is head of the Department of Virology at Erasmus Medical Centre, 3000 CA Rotterdam, The Netherlands.

e-mail: a.osterhaus@erasmusmc.nl



Sleeping with the enemy: Asia's live-bird trade fuelled transmission of avian influenza to humans.