

Update on Avian Influenza

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2009, like in previous years, has seen the reoccurrence of confirmed human avian cases with 7 cases in China (4 died), 4 cases in Egypt, 2 cases in Vietnam and also 2 cases in Indonesia (both died).

The occurrence of 5 human cases of avian influenza in a three week period in China in January, were one could possibly have been a mother-to-child transmission, with no corresponding reports of avian flu outbreaks, was seen as a cause of concern. The most likely explanation was that the human cases were exposed to H5N1 infected poultry, which were excreting the virus, but since they had been vaccinated against avian flu were showing no symptoms of disease.

Seasonal Influenza

Influenza activity has continued to increase during January and February across central Europe, following a west-to-east trend, with declining activity in western Europe whilst continuing to remain low in eastern Europe.

Type A(H3N2) continues to be the dominant influenza virus circulating in Europe. Antigenic and/or genetic characterisation indicates that the viruses circulating are similar to the three components (A(H1N1), A(H3N2) and B/Yamagata lineage) included in the current influenza vaccine. Although low numbers of influenza B viruses are circulating, there has been a continuous increase in February.

All influenza A(H3N2) viruses tested in Europe for antiviral resistance were resistant to M2 inhibitors but susceptible to neuraminidase inhibitors. The few influenza B viruses analysed were also found to be sensitive to oseltamivir and zanamivir but high resistance was found in influenza A(H1N1) viruses to oseltamivir.

A human case of swine influenza virus infection in Europe

Humans in contact with pigs occasionally become infected by swine influenza viruses. This has occurred in a middle-aged woman in Spain this January. The woman worked with pigs and suffered a mild self-limiting influenza-like illness. A swab taken showed that it was influenza A(H1N1) phylogenetically similar to European H1N1 swine influenza virus. Retrospective epidemiological investigations found no evidence of any further cases apart from her family doctor who had experienced similar symptoms but was not laboratory-confirmed.

Swine are susceptible to the same influenza A virus subtypes as humans – H1N1, H3N2 and H1N2. Many swine influenza viruses are a result of reassortment and their genes are composed of human and avian and/or swine virus genes. It is a known fact

that both human and avian influenza viruses occasionally transmit to pigs and that pigs can serve as 'mixing vessels' for these viruses, which means that viruses can exchange genetic material and lead to the production of a new 'hybrid' virus.

Influenza is one of the major causes of acute respiratory disease in pigs. The symptoms and pathogenesis of influenza in pigs show remarkable similarities with those of seasonal influenza in humans, but the epidemiology is different. Unlike human viruses, swine influenza viruses circulate at comparable levels all the year round.

Infection with swine influenza virus has been detected sporadically in humans since the 1950s but has been found to be much milder than those seen with avian A(H5N1). There have also been reported cases of single generation person-to-person transmission but are rare.

A study on the efficacy of soap and water and alcohol-based hand-rub preparations against live H1N1 influenza virus on the hands of human volunteers

This study was done to verify the most effective methods that can be used to eliminate influenza viruses on human hands. Five methods were used: A control (where no hand hygiene took place); washing with soap and water; and washing with 3 alcohol-based solutions with increasing alcohol concentrations. The concentrations of influenza A(H1N1) virus on the hands of the volunteers as well as the natural viability of H1N1 on the hands for more than 60 minutes without hand washing protocols were calculated before and after each treatment by means of viral culture and quantitative real-time reverse-transcriptase polymerase chain reaction (PCR).

The results of the study found that there was a rapid reduction in culture-detectable and PCR-detectable A(H1N1) after a short (2 minute) period of cutaneous air drying alone. There was also minimal further reduction in detectable H1N1 virus after 60 minutes without washing. The antiviral efficacy for all four hand washing protocols was high with all four hand-washing protocols. Washing with soap and water was statistically superior to the three alcohol-based treatments, although the difference was small.

This means that both soap and water and alcohol-based wipes, if used appropriately, will reduce the risk of influenza transmission through hands. However one must not forget that although hands can account of transmission of influenza, the main form of transmission is droplet and aerosol transmission. ☐

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