Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

A proportionate response to H7N9

Since Chinese authorities first reported on March 31, 2013, the emergence of a new form of influenza A virus—H7N9—causing human disease, there has been speculation as to whether this virus will be the agent of the next influenza pandemic. The H1N1 pandemic of 2009–10 was milder and caused far fewer deaths than were predicted when that virus first emerged. As a consequence, there is understandable scepticism when health authorities warn that the next pandemic might be just around the corner. However, given the severity of illness caused by H7N9 and its high case-fatality rate, a way must be found between vigilance and fear-mongering.

What we know about H7N9 so far is that as of May 8, 131 laboratory-confirmed cases had been reported with 32 deaths. According to a report in the *New England Journal of Medicine* published on April 24, cases are characterised by rapidly progressive pneumonia, respiratory failure, and acute respiratory distress syndrome leading to death. Most patients are male and elderly. Cases are mainly found on China's eastern coast around Shanghai, but have also been reported from Beijing in the north, and one case has been exported to Taiwan from mainland China. Influenza viruses carrying H7 typically circulate among birds. A mission to China by the World Organisation for Animal Health (OIE) concluded that live bird markets have a key role in human infection. However, H7N9 does not cause visible disease in poultry. There has been closure of poultry markets and culling of birds in China with some evidence of a decline in the number of new human cases. Fortunately, there is no evidence of sustained human-to-human transmission.

When poultry show no signs of infection, attempting to control H7N9 among China's approximately 6 billion domestic birds is a huge challenge for Chinese authorities. The virus has not adapted to transmit from person to person, meaning it cannot yet cause a pandemic, but this could happen if—for example—it were to infect pigs and mix with human-adapted viruses. The history of human contact with the highly pathogenic avian influenza H5N1 virus might offer some reassurance. This virus first caused human cases in Hong Kong in 1997. It reappeared in 2003, since when 628 human cases have been reported with 374 deaths, including 18 cases and 14 deaths reported in 2013 from Bangladesh, Cambodia, China, Egypt, and Vietnam. However, despite many years of human exposure, and recent research suggesting that few genetic mutations are required, H5N1 has not adapted to human-to-human transmission. Nevertheless, we don't have the tools to compare the likelihood of H5N1 and H7N9 mutating to cause sustained human infection, and therefore must remain alert to this possibility.

Detection of new H7N9 cases outside China might be the first sign that the virus has adapted to transmit from person to person. Eastern China is highly connected in terms of its international air links. For the time being, health-care workers around the world should have a high index of suspicion if confronted with a case of severe respiratory illness in a person recently returned from China. Since we are currently outside the northern hemisphere influenza season, any upsurge in cases detected by routine surveillance should be a cause for concern.

The ultimate weapon against an influenza pandemic is availability of a vaccine. Samples of H7N9 virus have been distributed to WHO collaborating centres around the world, and these laboratories are engaged in developing high-growth strains of the virus that will be suitable for vaccine development and production. Lessons learnt from the need to develop vaccines against H5N1 and pandemic H1N1 have been vital in improving influenza vaccine research, production, and technology.

Taking the long-term view, and given the incalcuable opportunities for virus reassortment in nature, human influenza pandemics are rare events—occurring about once every 25 years on average over the past century. However, at their worst (ie, 1918), pandemics are devastating. The lack of pre-existing immunity to H7N9 among the human population suggests that a pandemic caused by this virus could be just such a severe event. The experience of severe acute respiratory syndrome 10 years ago shows that even a limited disease outbreak can have serious economic consequences. Given these factors, the current response to H7N9 seems appropriate to the threat. We must guard against under-responding. ■ *The Lancet Infectious Diseases*

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For an **up-to-date count of cases of H7N9** see http://www.who.int/csr/don/en/index.html

For more on the **clinical features of H7N9** see *N Engl J Med* 2013; published online April 24. DOI:10.1056/NEJMoa1304617

For more on **the first 10 years of H5N1** see **Leading Edge** *Lancet Infect Dis* 2007; **7:** 175