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## Public Health

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## Guest Editorial

## Pandemic influenza: learning from the present

Infectious disease epidemics can be thought of as natural disasters, acute public health emergencies in the same vein as earthquakes or hurricanes. These events are inevitable, yet their arrival is unpredictable. We can, however, make provision to ameliorate the emergencies when they do arrive. Unlike disasters of geology or weather, the cause of a infectious disease outbreak is often not immediately obvious. Scientific investigation is required before the cause of an epidemic can be identified and effective public health interventions delivered. Such was the case with severe acute respiratory syndrome (SARS) in 2002–03. Nevertheless, with dramatic advances in our ability to identify the cause of diseases, SARS was attributed to a coronavirus with weeks of the outbreak coming to global attention. Similarly, the source of the outbreak of acute respiratory illness that began in Mexico in March of 2009 was identified within days as a new variant of the influenza A H1N1 virus.

The new H1N1 virus had – it seems in retrospect – spread worldwide even before its identification, thus sowing the seeds of the first influenza pandemic of the 21st century. We can count ourselves lucky that in the great majority of cases pandemic influenza H1N1 virus causes a mild, self-limiting illness. Nevertheless, severity of illness is not a criterion for defining a pandemic, and by the accepted measures of geographic spread and human susceptibility, the 2009 influenza H1N1 virus has caused pandemic disease. The work over the past decade that has gone into preparing for an influenza pandemic has also likely had a role in limiting the severity of the current event. This preparedness effort has taken place in response to the threat of pandemic avian influenza H5N1. H5N1 causes an illness with a mortality rate around 60%, but as of the last week of November, 2009, confirmed human cases have been reported from just 15 countries, the number of cases remains small (444), and the virus shows little sign of human-to-human transmission. By contrast, pandemic H1N1 has been reported from 207 countries and territories, cases are so numerous (many millions) that they are no longer being counted individually, and deaths worldwide number around 8000. While comparable in severity to seasonal influenza outbreaks that occur every year, younger adults have been disproportionately affected by pandemic H1N1, and the burden of mortality, morbidity, and economic disruption caused by the virus should not be taken lightly.

Three papers in this issue of the journal describe influenza pandemic preparedness efforts and early experiences of the 2009 pandemic in the WHO Western Pacific region<sup>1</sup> and in south-east Asia,<sup>2</sup> and influenza surveillance and early pandemic experiences in Europe.<sup>3</sup> These papers are based on presentations given at a meeting jointly organised by *The Lancet* and the Chinese Ministry of Health, held in Beijing, China, on August 21–23, 2009 (<http://www.thelancetconferences.com/asia-flu/>). This meeting, for which I helped organise the programme, began life in 2008 as a conference intended to discuss influenza preparedness efforts and their implementation in the Asia-Pacific region. However, not long after inviting speakers in early 2009 events began to shift the focus of the conference towards pandemic response and experience sharing. With the considerable influence of the Chinese Ministry of Health, the programme was extended to cover all aspects of the H1N1 pandemic, and representatives of 20 governments attended among the 900 delegates.

The rapidly evolving pandemic has, of course, moved on since the end of August, with the key events being a second wave of cases in the northern hemisphere and the commencement of vaccination campaigns against the H1N1 virus. Vaccines against the pandemic virus have been produced with commendable speed, partly as the result of work that has gone into devising “backbone” vaccines to meet the eventually of a pandemic caused by H5N1. Groups given priority for vaccination include health-care workers, pregnant women, people with underlying chronic illnesses, and children aged 6 months to 5 years. There is an argument for vaccinating all children first, since they appear to act as “vectors” for the spread of influenza virus (this case has also been made for seasonal influenza vaccination). However, an immunisation campaign of this sort might be rather hard to sell to parents, given that its primary objective will be population-level protection rather than protection of the individual. Indeed, the vaccination campaign already faces sufficient opposition from a misguided anti-vaccination lobby without complicating the decision that faces parents and individuals. Whereas there is evidence to suggest that the pandemic peak will have passed by the time vaccine is available to the majority of the population, the campaign remains a worthwhile public health measure because it reduces the pandemic period and will likely give some individual protection when the H1N1 virus reappears in seasonal form. People

living in low-income countries with no access to vaccine against influenza might be bemused by the refusal of immunisation by sections of the population of the rich world.

At some time in 2010 it is likely that the H1N1 pandemic will have run its course. At that stage we will need to reflect on how antivirals, vaccines, and social-distancing measure were deployed to combat the pandemic of 2009, and use the opportunity to improve preparedness plans for future – potentially far more severe – influenza pandemics.

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#### REFERENCES

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1. Craig AT, Kasai T, Li A, Otsu S, Khut Q. Getting back to basics during a public health emergency: A framework to prepare and respond to infectious disease public health emergencies. *Public Health* 2010;124(1):10–3.
2. Kamigaki T, Oshitani H. Influenza pandemic preparedness and severity assessment of pandemic (H1N1) 2009 in South-east Asia. *Public Health* 2010;124(1):5–9.
3. Nicoll A, Ammon A, Amato A, Ciancio B, Zucs P, Devaux I, et al. Experience and lessons from surveillance and studies of the 2009 pandemic in Europe. *Public Health* 2010;124(1):14–23.

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