Editorial

The Influenza A (H1N1) 2009 Pandemic in Singapore

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Just over a year ago, the swine-origin influenza A (H1N1) virus emerged in Veracruz, Mexico, and rapidly alarmed public health and influenza experts by the rapidity of its spread as well as by its novel genomic structure. The latter consisted of a triple re-assortment of swine, avian and human viruses circulating in different continents.[1] Initial reports of high mortality rates from Mexico (since revised[2]) added to the global apprehension.

The World Health Organization (WHO) declared the start of the pandemic 2 months later, on 11 June 2009, when sustained local transmission had already occurred across multiple WHO regions, despite the newer evidence showing considerably lower mortality rates.[3] Many countries, including Singapore, implemented a variety of pandemic preparation strategies. Billions of dollars were rapidly raised in different nations for these and other efforts, including influenza research and the stockpiling of H1N1 vaccines when these products became available.

Fast forward to now. The first and second waves of the pandemic have come and gone for the majority of countries. The socioeconomic and health impacts have been substantially less than were feared. The general public has become inured to news of the pandemic, and the uptake of H1N1 vaccination has declined both locally and globally, despite governmental and expert recommendations to doctors and the general public. It is difficult to objectively assess whether national pandemic strategies have worked to any extent (or to identify the crucial strategies that have worked), or whether they have contributed in part to the toll of the pandemic. The credibility of the WHO has fallen considerably in some quarters – the Council of Europe has launched an inquiry into the Organization's decision to label the H1N1 outbreak a pandemic, amid allegations that the decision was influenced by the pharmaceutical industry.[4]

It is fitting therefore that we should also examine our local experiences at both the individual and system-wide levels. In this issue of the *Annals*, we have assembled a collection of clinical, epidemiologic and policy papers on the novel influenza A(H1N1) outbreak in Singapore. It is easy to dismiss the virus as "wimpy", with a case-fatality ratio below that of even seasonal influenza.[5]

However, the cost to those individuals with severe disease is considerable, as Dr Chien and Dr Hariharan have shown.[6,7] Dr James and the Ministry of Health Communicable Diseases team have provided a fascinating and in-depth look at the events surrounding the implementation of public H1N1 control measures during the first wave, and the lessons drawn are undoubtedly valuable.[8] Dr Thoon found that a high proportion of healthcare staff at Kandang Kerbau Hospital expressed a willingness to receive the pandemic influenza vaccine – but unfortunately the actual uptake figures were not available;[9] there is often a significant discrepancy between survey results and actual vaccination rates. In the only paper with data external to Singapore, Prof Chiu's team provided us with an analysis of severe paediatric cases of H1N1 infections in both the USA and Taiwan.[10]

The H1N1 pandemic threat is effectively over, although the virus will probably continue to circulate the globe for a few more years, eventually becoming one among the many seasonal influenza A viruses. It is important not to miss the real lessons amidst the noise of debates about WHO actions, the activities (excessive or lack thereof) of governments, and the profit margins of vaccine makers.

Firstly, this outbreak was a "black swan" event that took even professed influenza and surveillance experts by surprise. Secondly, despite draconian actions by several countries, the spread of the virus in today's interconnected world could not be contained, but was only slowed at best. Thirdly, reliance on strategies based on past outbreaks, and a fear of recurrence of the outbreaks' adverse effects may be counterproductive.

While initial decisions may need to be made in the midst of uncertainty, it is crucial to obtain rapid and accurate assessments of an outbreak, and to efficiently tailor the responses (or drop them as appropriate). One of the discoveries of this pandemic was how swiftly one could obtain information via the Internet about the extent of the outbreak, the various responses to the situation globally, and the virus itself. After the initial weeks, information overload rather than paucity was the problem. The next pandemic – when it occurs – should find us better prepared and more flexible in our response.

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REFERENCES

1. Nava GM, Attene-Ramos MS, Ang JK, Escorcia M. Origins of the new influenza A(H1N1) virus: time to take action. Euro Surveill 2009;14(pii):19228.
2. Echevarria-Zuno S, Mejia-Arangure JM, Mar-Obeso AJ, Grajales-Muniz C, Robles-Perez E, Gonzalez-Leon M, et al. Infection and death from influenza A H1N1 virus in Mexico: a retrospective analysis. Lancet 2009;374:2072-9.
3. World Health Organization. Statement to the press: World now at the start of 2009 influenza pandemic. Available at: http://www.who.int/mediacentre/news/statements/2009/h1n1_pandemic_phase6_20090611/en/index.html. Accessed 5 March 2010.
4. Watson R. Council of Europe launches investigation into H1N1 pandemic. BMJ 2010;340:c641.
5. Presanis AM, De Angelis D. New York City Swine Flu Investigation Team, Hagy A, Reed C, Riley S, et al. The severity of pandemic H1N1 influenza in the United States, from April to July 2009: a Bayesian analysis. PLoS Med 2009;6:e1000207.
6. Chien JMF, Tan BH, Yang KS, Tan TT, Low CY, Kurup A, et al. Severe infection with H1N1 requiring intensive care – lessons for preparedness programmes. Ann Acad Med Singapore 2010;39:328-32.
7. Subramony H, Lai FYL, Ang LW, Cutter JL, Lim PL, James L. An epidemiological study of 1348 cases of pandemic H1N1 influenza admitted to Singapore hospitals from July to September 2009. Ann Acad Med Singapore 2010;39:283-90.
8. Tay J, Ng YF, Cutter JL, James L. Influenza A (H1N1-2009) pandemic in Singapore – public health control measures implemented and lessons learnt. Ann Acad Med Singapore 2010;39:313-24.
9. Thoon KC, Chong CY. Survey of healthcare workers' attitudes, beliefs and willingness to receive the 2009 pandemic influenza A (H1N1) vaccine and the impact of educational campaigns. Ann Acad Med Singapore 2010;39:307-12.
10. Lee HY, Wu CT, Lin TY, Chiu CH. 2009 pandemic influenza H1N1: paediatric perspectives. Ann Acad Med Singapore 2010;39:333-5.