Co-benefits and 'no regrets' benefits of influenza pandemic planning

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To the editor:

The emergence of the influenza A (H1N1) pandemic strain in 2009 and its subsequent spread has stimulated national and international interest in pandemic influenza control. It is likely to also be stimulating further revisions of pandemic plans around the world, especially given the possibility of on-going waves.¹ Such pandemic planning can involve sunk costs that might never be realised e.g., antiviral and vaccine stockpiles. However, there are many other potential collateral benefits from pandemic planning and preparations that can be realised regardless of a future pandemic occurring. We briefly describe some of these in this letter.

Benefits for controlling other communicable diseases

The current pandemic has prompted the first declaration of a Public Health Emergency of International Concern under the International Health Regulations (IHR) and is likely to further demonstrate the value of international collaboration in responding to this global health threat. The IHR are an important development for facilitating international disease control and for stimulating improvements in national level surveillance of infectious diseases.^{2,3} Greater application of the IHR may help improve the response to other communicable diseases and reduce impediments to the effective response to pandemics.⁴ A more specific example is the integration of pneumococcal vaccine into childhood immunisation programs in more countries. This initiative can reduce annual health impacts on children and potentially for the rest of the population via herd immunity.⁵ This effect could benefit adult health both in the short-term and at the time of an influenza pandemic (given the significant role of secondary bacterial infection in past pandemics).

Benefits to the civil defence response to natural disasters

Strengthening civil defence infrastructure could assist with pandemic influenza control and also further enhances the

response to a wide range of other natural disasters (e.g., flooding, severe storms, and earthquakes). Greater public involvement in simulated disaster exercises could also be considered. Of note is the finding that past experience of 'volunteerism' is associated with willingness to volunteer during an influenza pandemic.⁶ Disaster simulations could also help the military to better train for assisting civil defence authorities as required. Certain home provisions such as supplies of stored food may help in a pandemic situation (e.g., as described by Haug *et al.*⁷) as well as for various natural disasters.

Reducing routine overload of emergency department (ED) services

Emergency department services may be critical in pandemic situations but also in natural disasters and seasonal influenza outbreaks. In many countries, there may be scope for public health interventions that lower ED usage rates e.g., more intensive injury prevention and enhanced alcohol control e.g., via higher alcohol taxes. Such demand reductions would probably save health sector resources on a routine basis and allow ED services to operate more efficiently. But more effective prevention might also reduce routine health sector investment in ED services – which could be problematic in a pandemic unless such downsized services had built-in surge capacity.

Benefits from Internet and broadband access

Governments can potentially enhance Internet access for their populations through appropriate regulation and possibly incentives. Improved access has potential benefits for those types of disasters where electricity and telephone services remain working, at least in the early stages (e.g., approaching storms and pandemics). 'Remote working' via the Internet is already considered in some national and business pandemic plans.⁸ Internet access allowed home-based educational services for children in Beijing when

schools were closed because of SARS.⁹ It is also envisaged that during future pandemics the 'next generation broadband could also assist with appropriate diagnosis and treatment by allowing virtual home visits by general practitioners'.¹⁰ Yet there are likely to be many other educational and economic benefits of improving the level of Internet access in populations where such communication technology is not fully available.

Benefits from improving housing quality and crowding reduction

Crowding is a known risk factor for many communicable diseases, in both developed and developing countries. Furthermore, there is some modern day evidence that household crowding in developed countries is still associated with the annual risk of 'pneumonia and influenza' hospitalisation.¹¹ There is also some animal model evidence that cold conditions favour influenza transmission.¹² Improvements in housing quality through the use of insulation and heating are associated with improvements to health¹³ and are cost-effective interventions.¹⁴

Benefits to public health services

Responding to public health emergencies such as the influenza A (H1N1) pandemic, does have a large opportunity cost for public health services in terms of drawing staff away from important non-communicable disease prevention activities. However, the work in preparing for such events, and potentially the learning that comes from such experiences, may benefit public health infrastructure in the longer term. In the United States, the shift of responsibilities for emergency preparedness to local health departments is reported to have provided 'collateral benefits' to the local public health offices in one state (e.g., increased efficiency and timeliness of operations, enhanced visibility, development of personnel, improved technology and technical expertise, and additional fiscal resources).¹⁵

Benefits from collective action

Planning for and responding to pandemics necessitates a collective public health response. Coordination is required from global, national, and local organisations if the pandemic is to be prevented or substantially mitigated. Individual actions, while obviously necessary, are not sufficient. These lessons have been learnt before in the face of immediate threats such as war and economic depressions.¹⁶ Successful collective response in the pandemic area may have co-benefits in terms of collective responses to other global issues such as responding to climate change and eliminating weapons of mass destruction.

This letter is brief and does not fully describe the many complex issues around the economics and practicalities of these various interventions. For example, the social and economic implications of increasing Internet and broadband access are probably huge for many countries, and the benefits of these for pandemic and disaster planning might be a relatively small proportion of the total benefit. Nevertheless, we consider that these co-benefits should at least be considered by policymakers as pandemic influenza plans and civil defence plans get upgraded in the coming months.

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