

# Australia's influenza containment plan and the swine flu epidemic in Victoria

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*What lessons can be learnt from Australia's initial response to the outbreak?*

Given all the detailed planning and preparation that has gone into the Australian Health Management Plan for Pandemic Influenza (AHMPPI)<sup>1</sup> over the past 4 years, Australians may be wondering how well the plan has performed in Victoria during the recent H1N1 (swine) influenza outbreak. As clinicians working in one of the main affected hospitals, we would like to offer four key observations.

Firstly, the AHMPPI is a carefully developed medical and social management plan that was primarily designed to deal with a serious new strain of influenza, such as avian influenza, in which the case mortality (death rate) was expected to be up to 40%.<sup>2</sup> It was developed by experts in virology, epidemiology and health policy based on computer modelling that used assumptions about disease transmission rates (infectiousness), disease severity and the likely effectiveness of a single drug — oseltamivir. In planning, there was only limited input from clinicians, and practical issues — such as the adequacy of the protective mask stockpile or the means of rapidly distributing drugs and equipment to the “front line” — do not appear to have been planned in detail.<sup>3</sup>

In reality, the severity of the 2009 swine flu outbreak has fallen well short of the worst-case scenario: instead of resulting in high mortality, swine flu has been associated with only a 1%–2% hospital admission rate and zero mortality in Australia (so far); early experience has shown that the clinical case definition (fundamental to accurate disease modelling) was not an accurate model for the swine flu epidemic; and drug and mask distribution has been extremely slow, especially to general practitioners, who are crucial to effective disease management and containment. But the AHMPPI has lagged in adapting to these circumstances. Instead of being flexible and responding to feedback from the medical front line in Victoria, the AHMPPI has continued to be rigidly based on past assumptions. The process has tended to focus on managing data and information flow, rather than managing the sick patients.

Secondly, initial laboratory testing to confirm a case of swine flu was only allowed if a sick patient fitted the specific case definition — namely, the patient had to be a recently returned traveller from Mexico or North America, or a close contact of a proven case. Tests on all other patients who had a clinical illness suspected of being swine flu were initially refused or given low laboratory priority. This is the opposite of what should have occurred. To understand the full extent of disease spread, widespread testing without assumptions needs to occur so that the accuracy of the proposed case definition can be tested. The case definition should be used to guide clinicians, not the laboratory testing strategy. Otherwise it simply becomes self-confirming and does not identify the real extent of disease spread until it is too late — as has occurred in Victoria.

Thirdly, public hospital testing capacity for viral diseases has been primarily concentrated, over the past three decades, on just one centre in Victoria — the Victorian Infectious Diseases Reference Laboratory. Although initially this made sense given the complexity of viral testing,

technology has developed so rapidly in recent years that most public hospital laboratories now have molecular testing equipment available to accurately test for swine flu and other viruses. Thus, the present approach needs to change to reduce the current bottleneck whereby swine flu test results often take 3–5 days to come through. Meanwhile, the patient is not in quarantine and is generally not receiving antiviral therapy. If all hospitals had testing capacity and the rules for testing were not based on preconceived assumptions, the current influenza situation might have been different. Of course, confirmation of positive results by a reference laboratory would still be required, but its workload would be manageable (about 10%–20% of current levels).

Finally, the AHMPPI depends on faith in oseltamivir — that it is totally safe and that its use will reduce disease severity and spread. However, to be effective, the drug should be commenced within 48 hours of disease onset.<sup>4</sup> With laboratory results taking days to return, the only clinical solution would be to commence oseltamivir immediately influenza is suspected — in which case, at Austin Health we would be treating up to 80% of patients for a disease they do not have. Already it is known that the main seasonal influenza strain in the United States in 2008 was resistant to oseltamivir. The real nightmare scenario will be if the current swine flu strain also develops resistance in the face of widespread use of oseltamivir, leaving us with few treatment options. We are currently wasting oseltamivir on a mild illness when we are likely to need it next year, when the current strain could become more aggressive.

Of course, some good things have come from the current outbreak. It is possible (but not certain) that people who caught swine flu this year may have some protection for next year's possibly more aggressive strain. Secondly, the Acting Chief Health Officer in Victoria has done a great job in establishing new communication links with front-line clinicians and injecting some common sense into the AHMPPI debate. Finally, it has given Australia a chance to test its AHMPPI — what we need now is to critically evaluate its practical strengths and weaknesses.

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