Observations on managing an outbreak of influenza A infection in an aged care facility

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Abstract

Influenza outbreaks in aged care facilities (ACFs) can be associated with high morbidity and mortality. National guidance includes the use of antiviral medication for residents and staff and other measures to prevent serious health outcomes. An outbreak of influenza in an ACF was reported to the Brisbane Southside Population Health Unit (BSPHU) on 10 August 2007. The BSPHU assisted the ACF and local general practitioners in the provision of oseltamivir to staff and residents on 11 August 2007. The onset of illness in the last case was 13 August 2007. Antiviral prophylaxis was ceased and the outbreak declared over on 22 August 2007. This paper describes some of the practical issues encountered in the public health response in this setting. Vaccination of ACF residents and staff remains the key preventive strategy for the future. *Commun Dis Intell* 2007;31:410–412.

Keywords: influenza, disease outbreak

Background

Influenza infection in aged care facilities (ACFs) is associated with an increased risk of poor health outcomes among residents, including death.[1] Consequently, residents and those who care for them are recommended to have annual influenza vaccinations to reduce the likely impact of seasonal influenza epidemics.[2] In recent years a number of influenza outbreaks in ACFs have led to the development of *Guidelines for the prevention and control of influenza in aged care facilities in Australia.*[3] We report on our experience with one outbreak and the deployment of a public health team to coordinate the provision of antiviral medication.

Influenza notifications increased in South East Queensland in July 2007 and peaked in mid-late August 2007. In total, there were 4,097 notifications of laboratory-confirmed influenza reported in Queensland in the calendar year up to 27 September 2007.[4] Two cases of rapid test kit confirmed influenza among residents of an ACF were reported to the Brisbane Southside Population Health Unit (BSPHU) on the afternoon of Friday 10 August 2007. At the time of reporting another nine residents were recognised with symptoms that met a working case definition for influenza-like illness (fever ≥ 38°C, cough and one of: myalgia; headache; sore throat; fatigue; or chills). The ACF had commenced isolation of sick residents on 9 August 2007.

Methods

An Outbreak Control Team (OCT) was formed to manage the public health response. Reference was made to the State Outbreak Control Team for guidance on the extent of provision of antiviral medication and management of associated issues including media. It was decided to offer antiviral medication (as treatment or prophylaxis) to all staff and residents regardless of vaccination status as both of the confirmed cases and most of the suspected cases had already received this years' influenza vaccine. Vaccination was recommended for those who had not previously received it. Throat swabs were collected from 11 suspected cases. Antiviral medication (oseltamivir) was obtained from state supplies and a public health team visited the ACF on the afternoon of 11 August to coordinate the provision of antiviral medication to staff and residents. Vaccine effectiveness (VE) was calculated using the cohort method in Epi Info 6.[5]

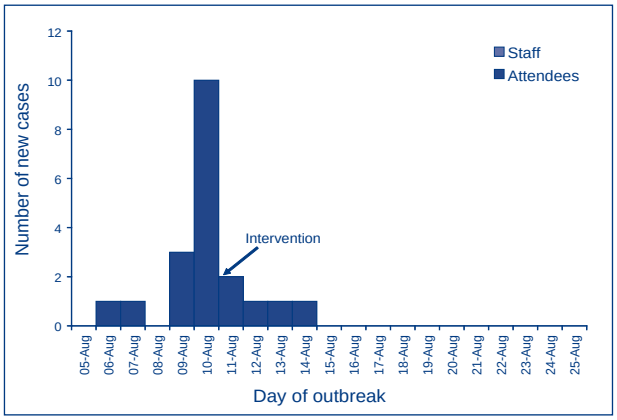
Results

In total, 79 residents (77% already vaccinated) and 45 staff (46% already vaccinated) were provided with oseltamivir on 11 August. Twenty residents (including two under treatment by their general practitioner) received treatment courses and 59 received chemoprophylaxis courses. A proportion received reduced doses on account of poor renal function, calculated from the most recent routine pathology tests held at the ACF.[3] A local general practitioner (GP) rendered generous assistance to the public health team and provided additional shiftwork staff with prophylaxis. Ten days of antiviral medication was supplied for each person. New cases were isolated and tested in accordance with standard procedures for controlling influenza in this setting.[3]

Twenty patients met the clinical case definition. Fourteen of these were noted to have received the 2007 influenza vaccine. Eleven patients had throat swabs collected with seven returning posi-

tive results for influenza A, subsequently typed as Influenza A Wisconsin/67/2005 (H3N2) in two patients. Confirmed cases were confined to hostel residents with no confirmed cases among residents in the immediately adjacent nursing home. The last case was recorded with onset on 14 August 2007 (Figure). There were no fatalities or hospital admissions recorded.

Number of cases in an influenza outbreak in an aged care facility, Queensland, August 2007



Forty-five staff (90%) were provided with antiviral prophylaxis. One staff member was unable to take either form of prophylaxis and was excluded. No staff reported symptoms. Public health measures were lifted and antiviral medication was ceased on 22 August 2007 after no new cases had been reported since 14 August.

Vaccine effectiveness for all residents in the facility using the clinical case definition was calculated as 31%. This increased to 44% when only laboratory confirmed cases were included. Among the hostel cohort using the clinical case definition VE was measured as 33%. This increased to 46% when only laboratory confirmed cases were included.

Discussion

This was the first time this intervention had been carried out in Queensland. We offer the following observations on our experience as potential learning points.

It is difficult to determine the precise impact of each of the measures on the progression of this outbreak. Although the VE was relatively low, the observation that no cases were very unwell or required hospitalisation suggests that the match with the current vaccine strain may have afforded protection from more serious outcomes. Isolation of cases, hygiene and other social distancing measures were an important part of the response and from our observation there appeared to be good compliance among staff and residents. It is tempting but not wholly justifiable to attribute more significance to the role of antiviral medication in terminating this outbreak.

On a weekend, BSPHU with the invaluable assistance of a local GP, was the only agency with the ability to conduct this intervention. However, even during the week, this intervention is of sufficient complexity that BSPHU staff would have to attend in person to provide support to the ACF staff, residents and families. The nature of shift work meant that all ACF staff could not be contacted or provided with treatment at one 'clinic'. Some staff were working in other ACFs which created additional infection control concerns.

Our intervention consolidated and gave consistency to the outbreak response. A less directly supportive approach may have resulted in delayed intervention, potentially significant leakage of antivirals to staff family members (with medical conditions) and staff attending a myriad of GPs with understandable differences in management.

Consent may be difficult to obtain in this setting. There were not sufficient resources to contact every legal guardian, so prophylaxis was provided after consent of each attending GP was obtained, and drug orders were written in medication charts.

Most residents had recent pathology tests, which allowed review of serum creatinine levels to guide antiviral dosage decisions in an elderly population.

The inclusion of a (influenza-vaccinated) pharmacist should be mandatory in any team approach to assist nursing home staff with dispensing. (This and the serum creatinine survey were the most time consuming parts of the exercise.)

One staff member required repeated counselling on the risks of taking the influenza back home to family members; another unvaccinated staff member had contraindications for both oseltamivir and zanimivir and was excluded from work until the outbreak was declared over. There remains substantial room for improvement in ensuring high rates of influenza vaccination among staff working in ACFs.

Agency staff required additional counselling and feedback to their agency about the intervention and the importance of vaccinating agency staff for the influenza as one unvaccinated staff member could not work in another facility as she was previously

rostered. Agencies should actively promote and provide influenza vaccination for their staff as part of their responsibility for workplace health and safety.

Facility management required support on managing the expectations of our response team. This was a huge intervention from the nursing home's perspective and required considerable flexibility in rostering staff, changing shifts and managing the medication issues. ACF staff required additional guidance and support on recording of temperatures and symptoms to meet the case definition.

A number of documents were sourced from other jurisdictions and formatted to suit this intervention. We gratefully acknowledge the work of other jurisdictions and the Australian Government Department of Health and Ageing and the Communicable Diseases Network Australia in developing essential forms and templates which facilitated the management of this outbreak.

The laboratory system supported this intervention well. Results were obtained on the day of the intervention and this was useful in determining the scope and direction of the response.

Personal Protective Equipment was available and all BSPHU staff deployed as part of this intervention had received the influenza vaccine.

The BSPHU supports more than 100 ACFs in the Brisbane Southside area. During a severe influenza season (as just experienced) it is likely that other outbreaks of influenza occurred in ACFs and were not reported to the BSPHU. The potential for a public health intervention in numerous ACFs would require deployment of considerable resources to support such a response. Vaccination of ACF residents and staff remains the key preventive strategy for the future.

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