Examining the knowledge of and attitudes to pandemic influenza among general practice staff

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ABSTRACT

Objective: To assess the views, needs and intended behaviour of general practitioners and practice nurses (PNs) regarding pandemic influenza.

Design, setting and participants: A postal survey of GPs and PNs in four Divisions of General Practice in New South Wales, selected to represent a diverse sample of practices from inner-city, semi-urban and rural areas. The study was undertaken from 1 February to 1 April 2009.

Main outcome measures: GPs' and PNs' responses to survey statements assessing their awareness and perceived personal risk, intended behaviour in the event of a pandemic, and expectations surrounding antivirals, vaccine and personal and family protection.

Results: Of 390 general practice staff who were sent the survey, 139 (36%) completed it. Most respondents felt confident that they possessed the necessary knowledge (71.5%, 98/137) and skills (73.7%, 101/137) to provide patient care during an influenza pandemic. Although 38.7% (53/137) stated that they would visit quarantined symptomatic patients, 41.6% (57/137) were unsure. More than half the respondents (53.2%, 74/139) stated that they would require access to vaccination and antivirals for their family as well as themselves before they would attend symptomatic patients at the general practice.

Conclusion: These findings provide evidence of the need to ensure that general practice staff have access to personal and family protection to encourage an adequate response to a pandemic situation.

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Australian pandemic influenza management plans provide broad details about how pandemic influenza will be managed in primary care and the roles general practitioners will be expected to fulfil.[1] There is an expectation that GPs will have a role in the early detection of cases and treating influenza patients in their practices.[2] However, the roles and responsibilities during a pandemic will vary according to the arrangements operating within a particular jurisdiction and the nature and phase of the pandemic. In addition, the roles and responsibilities of practice nurses (PNs) have not been so clearly set out in these plans. In most practices, PNs have an essential role in providing vaccinations.

There have been very few published surveys specifically examining preparedness for an influenza pandemic among GPs, and none that include PNs. We therefore sought to extend previous research by assessing the views, needs and intended behaviour of GPs and PNs regarding pandemic influenza. This study was undertaken at a time when outbreaks of avian influenza A(H5N1) in South-East Asia, the increasing geographic distribution of this epizootic virus, and its ability to transfer to humans and cause severe infection (ie, pneumonia) and death had aroused serious concerns.[3]

METHODS

We conducted a survey of GPs and PNs in New South Wales. The anonymous three-page postal survey contained tick-box options, mainly in the form of four- or five-point Likert scale and "yes/no" responses. The survey assessed the following characteristics of participants: personal and household demographics; specialty; years practising; awareness of risk and perceived personal risk level; and intended behaviour and compliance in the event of an influenza pandemic. It was piloted with four GPs and four PNs from outside the study area and modified accordingly.

Four Divisions of General Practice in NSW were selected to represent a diverse sample of practices from inner-city, semi-urban and rural areas. Due to privacy and confidentiality issues with gaining access to Division of General Practice databases of GPs and PNs, the survey was sent directly by the Divisions. Each Division was weighted according to how many GPs and PNs were located in the area.

The study was undertaken from 1 February to 1 April 2009, prior to the outbreak of pandemic (H1N1) 2009 influenza. A personalised explanatory letter and a reply-paid envelope were included with each survey. Non-responders were sent a second letter and survey by the Divisions within 4 weeks.

Quantitative data from the completed surveys were entered into an Access database (Microsoft, Redmond, Wash, USA) and analysed using SPSS (SPSS Inc, Chicago, Ill, USA). We used logistic regression analysis to calculate odds ratios (ORs) to evaluate the association of demographic variables and attitudes and beliefs with self-described likelihood of reporting to work in the event of a pandemic.

Ethics approval was granted by the University of NSW Human Research Ethics Committee.

RESULTS

Of the 390 general practice staff who were sent the survey, 139 (36%) completed and returned it. Fifteen surveys were returned without being completed, as the staff members were no longer at the practice. Thirty per cent of GPs (79/260) and 46% of PNs (60/130) who were sent a survey completed it. The demographic and occupational characteristics of the respondents are summarised in Box 1. Of the respondents, 45% (62/139) were working in practices with four or fewer GPs. Thirty-six per cent of respondents (50/139) were located in inner-city practices, 58% (81/139) were located in semi-urban practices, and the remaining 6% (8/139) were in rural locations.

Nearly two-thirds of the respondents felt confident that they possessed the necessary knowledge (71.5%, 98/137) and skills (73.7%, 101/137) to provide patient care should an influenza pandemic occur (Box 2). A significantly higher proportion of PNs than GPs (OR 5.52; 95% CI, 1.97–16.28; $P < 0.01$) believed they possessed the necessary skills to provide patient care during an influenza pandemic.

More than half the respondents (59.9%, 82/137) agreed that the risk of contracting pandemic influenza was a part of their job. Those who felt they had the necessary skills were more likely to accept this risk (OR 2.72; 95%, 1.16–6.40; $P = 0.01$). On a personal

1 Demographic characteristics of 139 participating general practice staff

Characteristic	No. (%)*
Occupational cohort	
General practitioner	79 (56.8%)
Practice nurse (PN)	60 (43.2%)
Sex	
Female	92 (66.2%)
Male	45 (32.4%)
Not specified	2 (1.4%)
Age group (years)	
18–30	4 (2.9%)
31–40	28 (20.1%)
41–50	40 (28.8%)
⩾ 51	65 (46.8%)
Not specified	2 (1.4%)
Home/living arrangements	
Live alone	7 (5.0%)
Live in shared accommodation	3 (2.2%)
Live with partner/spouse	33 (23.7%)
Live with partner/spouse and children	86 (61.9%)
Other	9 (6.5%)
Not specified	1 (0.7%)
No. of years in general practice (range)	
GP	1–20+
PN	0.3–20+
No. of GPs working in practice (mean [range])	
GP	6.4 (1–27)
PN	5.4 (1–21)
No. of sessions/week usually worked (mean [range])†	
GP	7.8 (2–13)
PN	6.7 (1–20)

* Unless otherwise stated.
† One session equals 4 hours. ◆

2 Knowledge and perceptions of pandemic influenza, by category*

Survey statement and response	General practitioners (*n* = 78)	Practice nurses (*n* = 59)	Total (*n* = 137)	*P*†
I feel confident that I have the necessary *knowledge* to provide patient care during an influenza pandemic				
Agree	48 (61.5%)	50 (84.7%)	98 (71.5%)	0.01
Disagree	13 (16.7%)	3 (5.1%)	16 (11.7%)	
Unsure	17 (21.8%)	6 (10.2%)	23 (16.8%)	
I feel confident that I have the necessary *skills* to provide patient care during an influenza pandemic				
Agree	48 (61.5%)	53 (89.8%)	101 (73.7%)	< 0.01
Disagree	12 (15.4%)	2 (3.4%)	14 (10.2%)	
Unsure	18 (23.1%)	4 (6.8%)	22 (16.1%)	
During a pandemic, I would visit quarantined‡ members of the public				
Agree	32 (41.0%)	21 (35.6%)	53 (38.7%)	0.5
Disagree	13 (16.7%)	14 (23.7%)	27 (19.7%)	
Unsure	33 (42.3%)	24 (40.7%)	57 (41.6%)	
I accept the risk of getting pandemic influenza is part of my job				
Agree	45 (57.7%)	37 (62.7%)	82 (59.9%)	0.05
Disagree	15 (19.2%)	17 (28.8%)	32 (23.4%)	
Unsure	18 (23.1%)	5 (8.5%)	23 (16.8%)	
I am afraid of transmitting pandemic influenza to my family				
Agree	58 (74.4%)	33 (55.9%)	91 (66.4%)	0.02
Disagree	9 (11.5%)	17 (28.8%)	26 (19.0%)	
Unsure	10 (12.8%)	9 (15.3%)	19 (13.9%)	

* Missing values excluded. † For "agree" responses between GPs and practice nurses. ‡ Symptomatic. ◆

level, 66.4% (91/137) feared that they could transmit the virus to their family (Box 2).

Only four GPs, and no PNs, indicated that they would go to work during an influenza pandemic if they had symptoms consistent with influenza. This rose to 11 GPs and 10 PNs in the event of a severe staff shortage. A further 21.6% of respondents (30/139) were unsure if they would attend work while ill. Many respondents (84.9%, 118/139) indicated that they would continue to present to work if a colleague had contracted pandemic influenza, and 58.3% (81/139) would do so if a family member had an influenza-like illness.

Although 38.7% (53/137) of respondents stated that they would visit quarantined symptomatic patients during a pandemic if needed, 41.6% (57/137) said that they were unsure (Box 2). Respondents who felt that they did not possess the necessary skills were significantly less likely to indicate willingness to visit quarantined patients (OR, 0.24; 95% CI, 0.10–0.61; $P < 0.001$).

The minimum precautions that respondents indicated they would require in order to attend to symptomatic influenza patients are shown in Box 3. More than half the respondents (53.2%, 74/139) indicated that they would require access to antivirals and a pandemic-specific vaccine for themselves and their families in order to turn up to work at their practice and see patients with suspected pandemic influenza.

DISCUSSION

This survey found that GPs and PNs are reasonably confident that they have the necessary knowledge and skills to provide patient care during an influenza pandemic. More than half the respondents accepted the risk of acquiring pandemic influenza infection as part of the job. By acknowledging and accepting that there is risk associated with the job, medical personnel are taking the first important step to accepting their duty of care in the situation.[4] Expecting a medical professional to treat patients without any regard to his or her own safety is both an extreme and unrealistic approach.[5]

The need to protect loved ones from infection may be a higher priority for medical personnel than self-protection.[6] A high proportion of respondents in this study indicated that they would need access to vaccines and antiviral medication not only for themselves but also for their families, in order to treat patients. This is consistent with the findings of an earlier Australian study by Shaw and colleagues, which suggested that GPs may direct their own prophylactic antiviral supply to their family members rather than using it themselves.[7]

Although having access to a pandemic-specific vaccine was desired by many of our respondents, less emphasis was placed on the use of antiviral medication. We did not explore the reasoning behind these decisions, but it could be hypothesised that this is due to the infrequent use of antivirals during the

3 Minimum precautions required by general practice staff before attending potentially infected or symptomatic patients at different locations

Location	Gloves, mask and gown	Pandemic-specific vaccine	Antivirals	Pandemic-specific vaccine + antivirals (self only)	Pandemic-specific vaccine + antivirals (family and self)
The general practice	120 (86.3%)	81 (58.3%)	55 (39.6%)	44 (31.7%)	74 (53.2%)
A flu clinic	113 (81.3%)	69 (49.6%)	48 (34.5%)	42 (30.2%)	71 (51.1%)
Hospital, general wards*	98 (70.5%)	62 (44.6%)	33 (23.7%)	35 (25.2%)	47 (33.8%)
Hospital, affected wards†	114 (82.0%)	68 (48.9%)	52 (37.4%)	45 (32.4%)	75 (54.0%)
Patient's home	116 (83.5%)	61 (43.9%)	39 (28.1%)	39 (28.1%)	67 (48.2%)
Patient's workplace	96 (69.1%)	72 (51.8%)	35 (25.2%)	34 (24.4%)	46 (33.1%)

*Without patients known to be infected with pandemic influenza. † Isolation wards for patients with pandemic influenza. ◆

normal influenza season, or it may be linked to a lack of awareness about the effectiveness and appropriate use of antivirals or to perceived notions about their availability. Shaw et al found that GPs felt that antivirals were unlikely to be available to them during a pandemic.[7]

During the pandemic (H1N1) 2009 outbreak, front-line health care workers have been critical of the support given by the Australian Government and the availability and timing of distribution of antivirals and personal protective equipment.[8] A review of the initial weeks of the outbreak, which began in late May 2009, found that supplies of personal protective equipment were not released to GPs until late in June. One Division reported receiving only a fraction of the supplies they requested from the national stockpile.[8] Resource supply failure is just one example of the problems faced by GPs during this pandemic. Delays, poor communication with public health authorities, problems with getting clear information, and time-consuming administrative processes have also been reported.[9]

During the outbreak of severe acute respiratory syndrome in Hong Kong, high levels of anxiety in GPs were reported, primarily due to the lack of professional guidance from the government.[10] We found that nearly 30% of respondents felt that they had neither the skills nor the knowledge to deal with an influenza pandemic situation, or were unsure whether they did. General practice staff members may not have been able to fully engage in any pandemic planning activities, due to time constraints or a lack of awareness or personal guidance. If a second wave of pandemic (H1N1) 2009 occurs, it is crucial that timely and targeted information from a recognised authority becomes available.

Our study has some limitations: it was conducted in only one state of Australia; the response rate (36%) was low; rural practices may have been under-represented; and there was the potential for responder bias towards GPs and PNs who are particularly concerned about pandemic influenza. Beliefs and attitudes reported here reflect the information available at the time, when a more virulent pandemic strain (H5N1) with a much higher case-fatality rate than pandemic (H1N1) 2009 was envisaged.

Australia's planning for pandemic influenza has been constantly evolving since 1999, when a framework for a plan was first put in place. Clearly, primary care is dealing with the current pandemic (H1N1) 2009 strain of influenza, with its massive expansion in numbers of infected patients. To maintain an effective front-line response, it will be vital to evaluate the general practice response to this situation and modify future plans accordingly.

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COMPETING INTERESTS

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