

The GP's response to pandemic influenza: a qualitative study

Kelly A. Shaw^a, Anna Chilcott^b, Emily Hansen^b and Tania Winzenberg^c

Shaw KA, Chilcott A, Hansen E and Winzenberg T. The GP's response to pandemic influenza: a qualitative study. *Family Practice* 2006; **23**: 267–272.

Background. Current pandemic influenza plans to place GPs at the front line of a pandemic influenza response. However, little is known about GPs' perceptions of their role and preparedness in the event of a pandemic occurring.

Objective. Our aim was to assess general practice preparedness to respond to pandemic influenza and to identify issues that need to be addressed to enhance preparedness for the next pandemic.

Methods. We conducted a series of semi-structured interviews to explore GPs' views regarding their role in responding to pandemic influenza, practice preparedness and planning issues, and the expectations and requirements of GPs for provision of professional services during a pandemic. The subjects were 60 Australian GPs, purposively selected to maximize diversity within the sample.

Results. GPs in this study expressed a willingness to provide professional services in a pandemic. The motivation for this was largely altruistic and was in the context of high personal risk of becoming infected. Participants did not have stockpiles of antivirals or personal protective equipment within their practices and felt that government had a duty of care to stockpile on behalf of the general practice workforce. Participants were enthusiastic about receiving further information and training in pandemic preparedness. The most appropriate setting for this was within practices.

Conclusions. GPs were willing to provide clinical services in a pandemic. However, appropriate education, training and supply of equipment were necessary to support them in this role. This information will inform further planning for the public health response to pandemic influenza.

Keywords. Equipment, primary health care, public health, training.

Introduction

Influenza is a highly contagious viral disease of the respiratory tract, capable of spreading rapidly through the community.¹ The influenza virus is classified into different types depending on the nucleoprotein group antigen e.g. A, B, C, geographic location, and the type of haemagglutinin protein and the neuraminidase protein found on the cell surface.

Minor antigenic variation in the virus occurs due to mutation of the viral genome (antigenic drift). This occurs every 2–3 years, causing local outbreaks of influenza. However, the influenza A virus can undergo

major genetic re-assortment in an animal host to give rise to a new strain (antigenic shift), to which a population may have only partial or have no immunity. The virus may have limited pathogenicity or may be very pathogenic. If this virus is able to replicate in humans, and be efficiently transmitted from one human to another, a pandemic of influenza can occur, with the potential to cause widespread morbidity and mortality.^{1,2}

Since the end of 2004, outbreaks of highly pathogenic avian influenza, caused by the H5N1 strain, have been reported in eight Asian countries.^{2,3} The implications for human health are significant. The H5N1 strain is of

Received 5 October 2005; Accepted 14 March 2006.

^aSouthern Tasmanian Division of General Practice, ^bDiscipline of General Practice and ^cMenzies Research Institute, University of Tasmania, Hobart 7000, Australia. Correspondence to Kelly Shaw, Department of Health and Human Services, 152 Macquarie Street, Hobart, Tasmania, Australia, 7000. E-Mail: kelly.shaw@dhhs.tas.gov.au

worrisome pandemic potential as the virus is already widespread throughout avian species and already has the capacity to infect humans and cause severe disease. It has done so three times in the recent past: in 1997 in Hong Kong, in February 2003 in Hong Kong, and since mid-January 2005, in Vietnam and Thailand.² If this virus were to develop the ability to be efficiently transmitted from human to human, it could quickly result in pandemic influenza with the potential for catastrophic morbidity and mortality.

In the past century, pandemics of influenza occurred in 1918, 1957 and 1968, with significant morbidity and mortality in both high-risk and normal-risk children and adults. Regardless of when the next pandemic occurs, it is likely that GPs will be at the front line of pandemic influenza response because influenza-like illnesses are commonly managed within primary care. This is reflected in the assumptions made in existing pandemic planning plans that GPs will play a key role in the response to any pandemic, particularly in the areas of surveillance, assessment, treatment and recovery. Current estimates suggest that 9000 extra general practice consultations per week will result from pandemic influenza across Tasmania alone.^{3,4}

The need for a planning approach for pandemics that includes primary health care has previously been recognized in the context of the severe acute respiratory syndrome (SARS).⁵ By virtue of their normal role in health care, GPs will be vulnerable to developing influenza. Existing plans recognize that maximizing primary care capability and protecting the primary care workforce are key to ensuring best outcomes for the community.^{3,4,6}

Despite the widespread assumption that GPs will play a key role, there is no literature known to the authors which specifically examines GPs willingness to participate in an influenza pandemic response, their perceptions of their role in such a response and their preparedness to respond to a pandemic. A survey of Australian GPs in the Australian Capital Territory in relation to SARS and bio-threat preparedness identified a number of perceived GP needs in this context that may be relevant to pandemic influenza. These included the need for timely communication, for greater training, for appropriate guidelines and protocols, for clear role delineation in outbreak response and provision of specialized equipment and vaccination.⁷

The aim of this study was to assess general practice preparedness to respond to pandemic influenza and to identify issues that need to be addressed to enhance preparedness for the next pandemic.

Methods

Semi-structured interviews were chosen as the preferred methodology in this study because they allow an in-depth exploration of GPs' views and beliefs about

pandemic influenza. Semi-structured interviews are also well suited for topics of enquiry such as pandemic influenza where GPs need to reflect on sensitive issues such as risks to their own safety and the safety of their family and friends.

Semi-structure interview development

An 8-hour forum on emergency management was held in Tasmania, a State in Australia, on the 15 June 2005. Representatives from the State's Police, Fire Services, Health and Human Services (Hospital, Public Health and Community Recovery personnel), telecommunications, water utility staff and local government attended. The forum was facilitated by the Tasmanian Disaster Coordinator and by staff of Emergency Management Australia.

Facilitators used a Tasmanian pandemic influenza scenario to discuss issues relating to pandemic influenza response. Two project officers transcribed the discussion as it progressed. The transcript was used to identify all themes relating to general practice.

The four main general practice themes that emerged were:

- (i) the role of the GP in responding to pandemic influenza;
- (ii) practice preparedness issues;
- (iii) the expectations and requirements of GPs for provision of professional services during a pandemic;
- (iv) the interface between general practice and the broader health sector.

The themes were incorporated into a draft semi-structured interview schedule. In Australia, there are 123 Divisions of General Practice that are predominantly government funded and whose role is to provide support to general practices in their region. Emergency Management personnel from the Department of Health and Human Services and staff from Tasmania's three Divisions of General Practice reviewed the interview schedule and the draft schedule was modified to capture the additional information required by these stakeholders. The interview schedule was pilot tested with a convenience sample of GPs before administering it to participants with only minor modifications being required.

Sampling

The GPs recruited for interview were identified from the membership databases of the three regional divisions of general practice using a purposive sampling technique, to ensure maximum variation on dimensions of interest (see Fig. 1).⁸ Approximately 80% of Tasmanian GPs are members of their regional division.

The use of purposive sampling allowed the exploration of diverse variations in attitudes and practices that

- (1) Gender
- (2) Age
- (3) Remoteness of practice
- (4) Proximity to hospital services
- (5) Solo and group practitioners
- (6) Full-time and part-time practitioners
- (7) Practice owners and employees
- (8) Retired GPs
- (9) GP Registrars
- (10) GPs with serious personal medical complaints
- (11) GPs with children or dependents
- (12) GPs not primarily working in general practice (e.g. medical educators, researchers)
- (13) Medical Officers of Health
- (14) Overseas trained GPs
- (15) GPs with emergency or disaster medicine experience or training

FIGURE 1. *Dimensions of importance represented within the sample*

TABLE 1 *Characteristics of the sample and comparison data for Tasmanian GPs as a whole*

	Categories	N (%) in sample (Total N = 60)	% in Tasmanian general practice population ¹⁴ (Total N = 653)
Age (years)	<35	10 (17%)	(14.9)
	35–44	15 (25%)	(26.4)
	45–54	17 (28%)	(29.0)
	55–64	10 (17%)	(14.6)
	>64	8 (13%)	(15.1)
Sex	Male	42 (72%)	(71.0)
Practice location	Urban	43 (72%)	
Practice owner	Yes	23 (38%)	
Employment status	Full-time	29 (48%)	

N = number of participants.

have emerged in adapting to different conditions and to identify important common patterns that cut across variations.^{8,9}

Data collection

Semi-structured interviews were conducted by KAS and AC. The format used was an ‘informal conversational interview’ that encouraged rapport and comfortable exchange.⁸ Because the interviewers are themselves GPs, a high degree of rapport and comfortable exchange was achieved. Participants read a one-page scenario, generated using the Centers for Disease Control and Prevention pandemic influenza modelling system FluAid 2.0, before the interview commenced.¹⁰ Informed consent was then obtained. The interviews, lasting from 20 to 60 minutes, were content transcribed by the interviewers and data entered into a password-protected database. GPs were reimbursed for their time.

Data analysis

Data were reviewed by two authors (KAS and AC) and categorized by hand according to the themes identified in the forum discussion. Salient themes were agreed through discussion. All views were included in the coding process.

Results

Sixty participants were interviewed. Selection was stratified to ensure that 50% of participants were from southern Tasmania, 25% from northern Tasmania and 25% from northwest Tasmania, which reflects the proportion of GP numbers found in each region in Tasmania. The characteristics of the sample are outlined in Table 1. The participants ranged in age from 27 to 77 years (mean = 47.6 years).

A broad range of views was expected given the diversity of GPs who participated and the large number

of dimensions explored. However, the responses relating to the themes that emerged from the forum were remarkably consistent across the sample.

The role of the GP in responding to pandemic influenza

All GPs expressed the view that they would continue to work during a pandemic. When the option of declining to work at the outset of a pandemic was presented, GPs expressed a strong conviction that this would be unethical. GPs described a strong personal work ethic, being primarily influenced by their sense of personal responsibility for their patients’ welfare. Many stated that caring for their patients was a moral imperative in a pandemic of influenza. To not work was viewed as abandonment of their responsibilities to both their patients and their colleagues, in particular, the rest of the general practice workforce.

“I wouldn’t be much of a human being if I closed up shop and headed for the hills.” (GP 14)

“Who would take care of my patients if I wasn’t there for them?” (GP 1)

“I will take care of patients because that is what I signed up to do.” (GP 47)

Four key GP roles in the provision of clinical services were identified:

- the reassurance of well patients,
- the assessment and management of patients unwell with influenza (both within the practice and within their own homes or in aged care facilities),
- the continuing care of patients with unrelated medical complaints and
- the mental health needs of patients affected by the broader consequences of a pandemic (fear, anxiety, bereavement) during both the acute phase and the recovery phase.

GPs described balancing these roles as a key source of tension. Whilst some saw their primary role as providing clinical care to patients with influenza only, others strongly endorsed their role in provision of 'usual' medical care to chronically ill patients as their primary role.

"I don't think GPs will be available for looking after their usual patients—they will be too busy with their flu cases." (GP 9)

"Maybe our skills would be best used doing the usual stuff and leaving the flu cases to someone else, like fever clinics." (GP 35)

GPs considered that the care of their own patients was their primary responsibility and expressed a strong preference for working within their own practices. Many expressed concern that their patients' well-being could potentially be threatened by agreeing to provide medical services outside their own practices. In spite of this, it was acknowledged that there would be a need for the general practice workforce to be coordinated to meet urgent needs that arose and to ensure that no groups within the community were without primary care.

"The fever clinics are a good idea. They will free us up to see our usual patients. I just don't want to be the one who has to work in one." (GP 50)

"If I volunteer to work in a clinic or a hospital, what's going to happen to my patients? There won't be anybody taking care of them. I'd rather stay in my own practice thanks very much." (GP 38)

Indemnity was identified specifically as an issue for retired GPs and GPs not currently in clinical practice. Both groups were keen to volunteer their clinical services in the event of a civil disaster such as a pandemic. However, GPs felt that it would be appropriate for the government to indemnify them for this work.

Practice preparedness issues

It was widely acknowledged that the general practice workforce would be quickly overwhelmed in the event of a pandemic. GPs were aware of the existing workforce shortage in general practice in Tasmania, and felt that this would only be exacerbated by the increased workload a pandemic would generate.

The principal resource concern of GPs was personal protective equipment (PPE). All GPs interviewed believed that government had a duty of care to provide PPE in the event of a pandemic. None of the GPs had stockpiles of PPE nor were they intending to stockpile PPE. Barriers to stockpiling included the cost of PPE, the bulk sizes that PPE was sold in (thought to be too large to be practical in most general practices) and the space that storage of PPE would require.

"Government has a duty of care to provide PPE as GPs are largely pre-contemplative about the whole issue." (GP 13)

"It is important that masks are paid for by government as they are too expensive for the average general practice to pay for—especially for small practices." (GP 51)

"PPE is too dear for us to be buying it ourselves. And we don't have nearly enough room to store it." (GP 24)

The impact that unavailability of PPE would have on GPs' intention to continue to work was specifically explored. Fifty-five of the sixty GPs interviewed stated that they would cease to work if PPE were unavailable, primarily due to concerns for their own welfare and the welfare of their dependants if they were to die. The remainder thought that they would continue to work anyway, as it was likely that they would have already been exposed to the virus and would have already succumbed to it if they were going to.

"I have kids and won't endanger myself otherwise who will take care of them. If there is no gear then I definitely won't work." (GP32)

"I remember masks ran out with SARS where I worked. I kept working anyway." (GP 2)

GPs suggested that PPE could be packaged into kits with gloves, a gown and a mask with a face shield in each kit. Kits could be placed in a prominent position in the surgery, e.g. treatment room, doctors consulting rooms, and used should a patient with a history of travel to a country with pandemic influenza activity, and with fever, cough and fatigue, present to the practice. Kits could be purchased in small lots and used in the above situation. In the event of a pandemic, bulk supplies could be made available to general practice by the government.

In Australia, pandemic plans recommend that essential services (including GPs) receive prophylactic antivirals in the event of a pandemic. Although GPs in general did not feel that they had enough knowledge to identify whether prophylactic antivirals (e.g. Oseltamivir) would be necessary in order to see patients, most thought that if they were available and if recommended by public health authorities, they, their families and their practice staff would take them prophylactically.

"If the experts tell me I would benefit from taking antivirals, then I will take them. But I want them for my family and my practice staff too." (GP 27)

"I would want antivirals for my family and would give it to them before I took them myself." (GP 41)

Stockpiles of antibiotics were not seen as a high priority for general practices per se. Prophylactic antibiotics for GPs and their staff were felt to be unnecessary. If a vaccine were to become available, additional stockpiles of needles and syringes would be required by many general practices if the vaccine was not pre-packaged.

The interface between general practice and the broader health sector

Different levels of leadership were identified as relevant in the event of a pandemic. Practice owners were commonly identified as the logical leaders within their own practices. Within each practice one or two senior doctors would have to make decisions regarding 'who does what'. For practice leaders education and training, and assistance with practice planning, was seen as potentially valuable. Outside the practice, it was believed that leadership would most likely come from public health. Despite some GPs expressing negative views about the constraints of the bureaucracy, the Director of Public Health was nominated consistently as a credible and appropriate position of leadership in the event of a pandemic.

"The Director of Public Health or some other really competent leader. People won't follow instructions from someone they don't see is competent." (GP 8)

"Someone who knows what they are talking about and who is known to GPs should be identified ahead of time to lead the response. Incompetent bureaucrats will not do." (GP 20)

The expectations and requirements of GPs for provision of professional services during a pandemic

GPs were enthusiastic about receiving further information and training in pandemic preparedness. Face-to-face guidance and training were thought to be the most appropriate methods to use, as these could be region specific and incorporate education on planning frameworks involving GPs. Additional suggestions included in-practice training with all practice staff in order to walk-through quarantine, PPE and notification response procedures in the environment where the GPs and support staff will be working. GPs are not aware of any defined roles they have in responding to a civil emergency such as a pandemic. Role definition was identified as a key education issue that needs to be addressed.

Discussion

This study identifies key issues regarding pandemic planning from the GP perspective including workforce issues, provision of PPE, appropriate leadership

and the need for education and training. Importantly, GPs in this study expressed a willingness to provide professional services in the event of a pandemic, which is of critical importance given the pivotal role they have already been given in existing pandemic response plans.

The willingness with which GPs accepted that their role was to continue to deliver health services in an influenza pandemic observed in this study may not apply universally to other outbreaks or health professionals. For example, a study of US nursing students examining preparedness for biological, chemical and nuclear terrorism found that students would not be willing to care for victims if there was a lack of protection for both themselves and family.¹¹ The motivation for GPs continuing to service their patients was largely altruistic. GPs consistently expressed a sense of responsibility for their patient's welfare, and concern for their patients and colleagues if they did not continue to work. This was despite their perception of themselves having a high personal risk of becoming infected with pandemic influenza.

The principal resource requirement for participating GPs was PPE, both for themselves and for their staff. Multiple barriers to stockpiling PPE in general practice were identified. To maintain essential primary care services in the event of a pandemic, organizations involved in pandemic should consider both stockpiling PPE to meet the requirements of the general practice workforce, and methods to efficiently and rapidly deliver PPE to general practices once a pandemic occurs. Delivery methods need to be robust enough to overcome potential disruption of delivery due to the effects of the pandemic itself.

Antivirals and vaccine were also desired, however respondents felt that these were less likely to be available. If antivirals were available, GPs were keen to take them on the advice of public health authorities. However, respondents felt that if their families were not also given antivirals, and were to become unwell, that the GP would give their prophylactic dose to their family members instead of taking it themselves. This has implications for the stockpiling and distribution plans—consideration may need to be given the needs of GPs families and be ensured that GPs in fact take their own medication.

Discussion regarding the interface between general practice and the broader health sector highlighted a tension about who had leadership responsibility for work capacity decisions. Most GPs believed that they were best placed, with their patient context and knowledge, to decide how they could best provide care to their patients. However, respondents felt a leader from outside the general practice community could also be the key advisor for general practice, provided that person was respected and knowledgeable, and was someone with whom GPs were familiar, which in the

Tasmanian context was the Director of Public Health. This choice of person may well influence the effectiveness of the leadership from government agencies, and agencies may need to consider this issue carefully in each jurisdiction. The appropriate person may not be the official who routinely would undertake that role in government agencies in other circumstances.

The study results provide substantial information to inform the development and delivery of appropriate education and training to GPs and their practices. Educational and training requirements to better prepare for pandemic influenza focused on assistance with planning, infection control and quarantine procedures, and appropriate use of PPE. A strong preference was expressed for training to be provided within practices, the setting within which the majority of GPs will work in a pandemic. Greater awareness of existing plans for pandemic influenza response and the role of the GP within those plans were seen as critical to enabling GPs to better prepare for a pandemic. GPs should be involved in planning processes and kept informed of any planned or potential role they may play in a pandemic. Planning must take into account 'business as usual' for practices as well as the pandemic influenza-related workload.

Our study has several limitations. Firstly, it is a purely descriptive study. There is no attempt to quantify responses. However, this open-ended, inductive methodology is ideally suited to exploring GPs' perceptions compared with more structured quantitative approaches such as surveys, when the survey content may reflect preconceived ideas.^{12,13} We interviewed a large sample of purposively selected GPs with a variety of demographics providing a breadth of views from a diverse group of GPs. Secondly, participants were chosen to participate in this study by their regional Division of General Practice. Approximately 20% of non-member Tasmanian GPs are not represented in this sample. However, the demographic characteristics of the GPs in our sample demonstrate comparability with the Tasmanian GP workforce as a whole (Table 1).¹⁴ Tasmania has few very remote GPs and different issues may arise for GPs in very remote

locations. Otherwise these findings are likely to be relevant to pandemic planning in settings outside of Tasmania.

In conclusion, this study identifies key GP issues relevant to influenza pandemic planning. Governments, in order to enhance general practice preparedness for pandemic influenza and to improve outcomes for the community as a whole, should urgently respond to these issues.

References

- Harper S, Fukuda K, Uyeki T, Cox N, Bridges C. Prevention and control of influenza. *MMRW* 2005; **54**: 1–40.
- World Health Organization. *Influenza Pandemic Threat—Current Situation*. Available at: http://www.who.int/csr/disease/avian_influenza/en/ (accessed 10 January 2006).
- Australian Government Department of Health and Ageing. *Australian Management Plan for Pandemic Influenza*. Canberra: Department of Health and Ageing; 2005.
- Tasmanian Department of Health and Human Services. *Tasmanian Action Plan for Pandemic Influenza*. Hobart: Department of Health and Human Services; 2003.
- Kort R, Stuart A, Bontovics E. Ensuring a broad and inclusive approach: a provincial perspective on pandemic preparedness. *Can J Public Health* 2005; **96**: 409–11.
- Wilson N, Baker M, Crampton P, Mansoor O. The potential impact of the next influenza pandemic on a national primary care medical workforce. *Hum Resour Health* 2005; **3**: 7.
- Herceg A, Geysen A, Guest C, Bialkowski R. SARS and biothreat preparedness—a survey of ACT general practitioners. *Commun Dis Intell* 2005; **29**: 277–282.
- Patton M. *Qualitative Evaluation and Research Methods*. (2nd edn). Newbury Park: Sage, 1990.
- Rice P, Ezzy D. *Qualitative Research Methods: A Health Focus*. Melbourne: Oxford University Press, 1999.
- Meltzer M. *FluAid 2.0*. United States Centers for Disease Control and Prevention, 2000.
- Young C, Persell D. Biological, chemical and nuclear terrorism readiness: major concerns and preparedness of future nurses. *Disaster Manag Response* 2004; **2**: 109–114.
- Pope C, Mays N. Researching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. *BMJ* 1995; **311**: 42–45.
- Sale J, Lohfeld L, Brazil K. Re-visiting the quantitative-qualitative debate: Implications for mixed-methods research. *Quality and Quantity* 2002; **36**: 43–53.
- Australian Government Department of Health and Ageing. *General Practice in Australia: 2004*. Canberra: Department of Health and Ageing; 2004.