

# The community's attitude towards swine flu and pandemic influenza

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On 11 June 2009, the World Health Organization raised the influenza pandemic alert to Phase 6 (defined as human-to-human spread of the virus in at least two countries in one WHO region and sustained community-level outbreaks in at least one country in another WHO region), in response to the emergence of an A(H1N1) influenza subtype.<sup>1</sup>

Community mitigation interventions in Australia for pandemic (H1N1) 2009 ("swine flu") have included identifying cases, treating and isolating infected patients, and quarantine. A great deal of cooperation from the public is required to successfully implement these measures. Unlike our South-East Asian neighbours, Australia has been relatively unaffected by severe acute respiratory syndrome (SARS) or the H5N1 influenza strain, and this may affect how our community responds to pandemic (H1N1) 2009. It has been previously reported that perceptions or beliefs about an outbreak may be important in determining compliance with official advice.<sup>2,3</sup> Willingness to adhere may also be influenced by the severity of illness that people observe in the community relative to their own need for income and the potential level of disruption to their lives. In addition, public response is likely to be affected by the perceived effectiveness of the government in dealing with the crisis.<sup>4</sup>

We sought to rapidly explore initial community feelings and risk perceptions of the pandemic (H1N1) 2009 outbreak in Australia, during a period of scientific uncertainty about the risks and severity of the outbreak. We collected data during Phase 5 of the influenza pandemic alert, from 2 May 2009, when the WHO reported a total of 615 cases from 15 countries,<sup>5</sup> to 29 May 2009, by which time 15 510 cases had been reported from 53 countries,<sup>6</sup> 147 of these cases were reported from Australia, with no related deaths.

## METHODS

Given the urgency of the situation and the narrow window of opportunity to collect this type of data, we surveyed the general public using a mixed method approach. A three-page anonymous survey assessed: personal and household demographic characteristics; awareness of the swine flu situation and

## ABSTRACT

**Objective:** To ascertain the beliefs, perceived risks and initial attitudes of the Australian community towards the influenza pandemic declared by the World Health Organization in response to the emergence of an A(H1N1) influenza subtype.

**Design, setting and participants:** Cross-sectional survey of Sydney residents during WHO Phase 5 of pandemic (H1N1) 2009. Members of the public were approached in shopping and pedestrian malls in seven areas of Sydney between 2 May and 29 May 2009 to undertake the survey. The survey was also made available by email.

**Main outcome measures:** Perceived personal risk and seriousness of the disease, opinion on the government and health authorities' response, feelings about quarantine and infection control methods, and potential compliance with antiviral prophylaxis.

**Results:** Of 620 respondents, 596 (96%) were aware of pandemic (H1N1) 2009, but 44% (273/620) felt they did not have enough information about the situation. More than a third (38%; 235/620) ranked their risk of catching influenza during a pandemic as low. When asked how they felt pandemic influenza would affect their health if they were infected, only a third (33%; 206/620) said "very seriously". Just over half of the respondents (58%; 360/620) believed the pandemic would be over within a year. Respondents rated quarantine and vaccination with a pandemic vaccine as more effective than hand hygiene for the prevention of pandemic influenza.

**Conclusions:** Emphasising the efficacy of recommended actions (such as hand hygiene), risks from the disease and the possible duration of the outbreak may help to promote compliance with official advice.

MJA 2009; 191: 267–269



eMJA RAPID ONLINE PUBLICATION 29 JULY 2009

perceived personal risk; potential compliance with antiviral prophylaxis; attitudes towards quarantine; and perceived effectiveness of infection control measures. All responses used tick boxes, with the exception of one open-ended question about expected duration of the pandemic.

Between 2 May and 29 May 2009, members of the public were approached in public shopping and pedestrian malls to undertake the survey. Seven geographically and socioeconomically diverse areas of Sydney were selected for recruitment. One of us (HS) spent 2 hours in each area at randomly chosen times of the day to recruit participants. Eligible participants were 18 years of age or older. The recruiter approached all adults who appeared to be at least 18 years of age, and if the recruiter was uncertain about a potential participant's age, the person was asked. Participants were excluded if the researcher experienced communication difficulties with them. To maximise the sample size, the survey was also made available to members of the public by email during the study period. The number of emailed surveys was recorded.

Data were analysed using EpiInfo, version 3.3.2 (Centers for Disease Control and Prevention, Atlanta, Ga, USA), for proportions, 95% confidence intervals and  $\chi^2$  tests for significance. Alpha was set at the 5% level. Ethics approval for the study was obtained from the University of New South Wales.

## RESULTS

A total of 584 community members were approached in person, of whom 499 (85.4%) agreed to participate. A further 26 people who were approached were excluded because of insufficient English proficiency, and another eight were < 18 years of age. The survey was emailed to 197 people, of whom 121 (61.4%) returned a completed survey, giving a total of 620 respondents. Respondents overall were younger than Sydney residents, with 55% of survey respondents aged < 35 years (Box 1) compared with 33% of Sydney residents, as reported in the Australian Bureau of Statistics 2006 census.

Less than half the respondents (41.6%; 258/620) agreed that "health authorities are

1 Demographic characteristics of the participants (n = 620)	
Characteristic	No. (%)
<b>Sex</b>	
Male	266 (42.9%)
Female	346 (55.8%)
Not specified	8 (1.3%)
<b>Age group (years)</b>	
18–24	129 (20.8%)
25–34	209 (33.7%)
35–44	97 (15.6%)
45–54	87 (14.0%)
55–64	69 (11.1%)
≥ 65	23 (3.7%)
Not specified	6 (1.0%)
<b>Home/living arrangements</b>	
Live with partner/spouse	184 (29.7%)
Live with partner/spouse and children	134 (21.6%)
Live in shared accommodation	95 (15.3%)
Live with parents	88 (14.2%)
Live alone	84 (13.5%)
Other	24 (3.9%)
Not specified	11 (1.8%)
<b>Highest qualification</b>	
University degree/equivalent	397 (64.0%)
TAFE certificate/diploma	116 (18.7%)
Higher school certificate	71 (11.5%)
School certificate	20 (3.2%)
None	9 (1.5%)
Not specified	7 (1.1%)
<b>Ethnic background</b>	
Caucasian	467 (75.3%)
Asian	90 (14.5%)
Other	29 (4.7%)
Middle Eastern	26 (4.2%)
Aboriginal or Torres Strait Islander	1 (0.2%)
Not specified	7 (1.1%)
<b>Employed</b>	
No	113 (18.2%)
Full time	331 (53.4%)
Part time	57 (9.2%)
Casual	64 (10.3%)
Self-employed	51 (8.2%)
Not specified	4 (0.6%)

TAFE = Technical and Further Education. ♦

exaggerating the risk of a pandemic”, and half (51.5%; 319/620) believed that health authorities would be truthful about what was happening during an influenza pandemic. More than half the respondents (57.9%; 359/620)

believed that the government would be prepared to quickly and effectively respond to an influenza pandemic. When asked how they thought pandemic influenza would affect their health if they were infected, 42.9% (266/620) stated that it would “very seriously” or “extremely” affect their health (Box 2).

Most respondents (63.4%; 393/620) reported that being placed in home quarantine would constitute a “high” to “very high” inconvenience or problem. Not being able to attend work (52.4%; 325/620) and not having access to groceries and other supplies (40.2%; 249/620) were ranked as highly problematic aspects of quarantine. Respondents who were self-employed or in casual employment were significantly more likely to rate not being able to work as problematic (odds ratio [OR], 1.41 [95% CI, 1.00–1.98];  $P=0.03$ ). Not having access to groceries and other supplies was more problematic for people <35 years of age compared with older age groups (OR, 1.46 [95% CI, 1.02–2.09];  $P=0.03$ ). Quarantine and vaccination with a pandemic vaccine were rated as more effective than hand hygiene for the prevention of pandemic influenza (Box 3). Women were significantly more likely than men to rate quarantine (OR, 0.64 [95% CI, 0.46–0.89];  $P=0.006$ ) and vaccination with a pandemic vaccine (OR, 0.69 [95% CI, 0.49–0.98];  $P=0.03$ ) as highly effective. This was not the case for handwashing.

Participants were asked to indicate whether or not they would take a prophylactic course of antiviral drugs, or give it away to their family members, in the event that they were exposed to a person with pandemic influenza. Most (69.7%; 432/620) said they would take the course as instructed, while 16.3% (101/620) would divert it to family members.

## DISCUSSION

Despite a rapid increase in the number of pandemic (H1N1) 2009 cases worldwide and the heightened saturation of information about the disease and its spread, few of our respondents believed they were at high to very high risk of contracting pandemic influenza. Our results concur with those of a study that found low levels of anxiety towards swine flu in a cohort in the United Kingdom.<sup>7</sup>

Risk perceptions are defined by the perceived seriousness of a health threat and perceived personal vulnerability. During the SARS outbreak, willingness to comply with risk-reducing behaviour was linked with perceived immediacy and seriousness of the threat.<sup>8,9</sup> Many of the reports in the early stages of the swine flu pandemic described the H1N1 virus

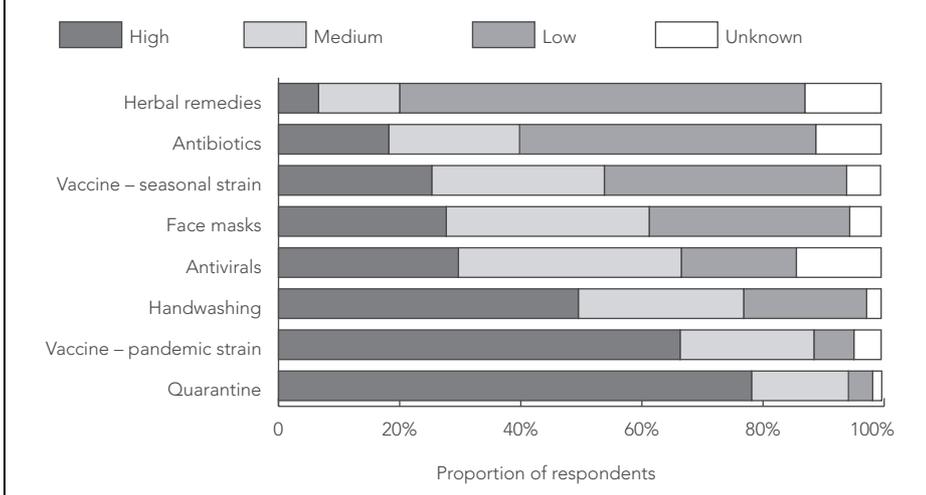
## 2 Participant awareness and perceived risk of swine flu and pandemic influenza (n = 620)

Question and response	No. (%)
<b>Are you aware of the swine flu situation?</b>	
Yes	596 (96.1%)
No	10 (1.6%)
No response	14 (2.3%)
<b>Do you feel that you currently have enough information about the swine flu situation?</b>	
Yes	338 (54.5%)
No	273 (44.0%)
No response	9 (1.5%)
<b>How long do you think a pandemic will last?</b>	
< 1 month	16 (2.6%)
1–2 months	110 (17.7%)
3–6 months	141 (22.7%)
6 months – 1 year	93 (15.0%)
1–2 years	27 (4.4%)
> 2 years	19 (3.1%)
Unsure	152 (24.5%)
Other	34 (5.5%)
No response	28 (4.5%)
<b>If you were infected by pandemic influenza, how seriously do you think it would affect your health?</b>	
Not at all	7 (1.1%)
Somewhat affect	275 (44.4%)
Very seriously affect	206 (33.2%)
Extremely affect	60 (9.7%)
Don't know	72 (11.6%)
<b>Please indicate your level of risk of catching influenza during a pandemic</b>	
Very high	35 (5.6%)
High	98 (15.8%)
Medium	201 (32.4%)
Low	156 (25.2%)
Very low	79 (12.7%)
Don't know	51 (8.2%)

as causing milder influenza than other viruses previously linked to pandemics, which may account for the low risk-perception levels in our study. Encouraging the public to undertake specific behaviour relating to hygiene may therefore prove difficult. Previous studies suggest that compliance with health-related recommendations will increase if people believe they have a high likelihood of being affected or they perceive the illness to have severe consequences.<sup>3,10</sup>

During the SARS outbreak, a Hong Kong study found that people were more likely to

**3 Perceived efficacy of various prevention methods for pandemic influenza**



comply with health-related recommendations if they believed that the government was providing clear and sufficient information about the outbreak, and that the government could be trusted to control the spread of infection.<sup>10</sup> We found a high proportion of respondents believed our government was prepared to respond quickly and effectively to a pandemic situation, which could have positive implications for compliance with official advice.

The high efficacy rating of quarantine in our study is possibly due to intense media coverage of the government using quarantine for suspected cases in Australia at the early stages of the outbreak in Victoria. The high acceptance level may also reflect the media's presentation of quarantine as being relatively recreational, rather than causing any particular cost other than nuisance for the patient. Fewer than half of our respondents rated hand hygiene as an effective infection prevention measure, with more respondents rating isolation and advances in medical science (such as the development of a pandemic vaccine) above the cornerstone of infectious disease prevention. As the community no longer witnesses the effects of severe infectious diseases, such as polio, the social normative role of hand hygiene should now be reintroduced with large public campaigns.

Our study has several limitations. First, it was conducted in one city and was limited to English-speaking participants. Additional research into differing reactions to the outbreak among other ethnic groups is required. Second, our study sample has the potential to be biased towards community members who are particularly concerned about pandemic influenza. Our survey measured a

specific population's views at a specific point in time; their beliefs and attitudes reflect the information available at the time and will not be stable. It is unknown whether responses given to the hypothetical situations posed in the survey would accurately reflect the respondents' real-world responses. However, behavioural intention-focused research indicates the potential for intentions to reasonably predict actual behaviour.<sup>11</sup>

Our respondents were largely cooperative and supportive of the government's ability to handle the pandemic. Where they were being failed was in the lack of provision of structured routine updates on the pandemic and lessons on the importance of basic personal hygiene for the containment of respiratory infections.

**ACKNOWLEDGEMENTS**

We would like to thank Associate Professor Heather Worth for her assistance and advice on this project.

**COMPETING INTERESTS**

Raina MacIntyre receives funding from influenza vaccine manufacturers GlaxoSmithKline and CSL Biotherapies for investigator-driven research. However, these payments were not used for this study.

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(Received 30 Jun 2009, accepted 20 Jul 2009) □