Original Article

Attitudes of Patients, Visitors and Healthcare Workers at a Tertiary Hospital Towards Influenza A (H1N1) Response Measures

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Abstract

Introduction: We sought to determine the opinions of patients, their visitors and healthcare workers regarding Influenza A (H1N1) response measures instituted within a tertiary hospital in Singapore. Materials and Methods: This questionnaire study was undertaken from 21 May 2009 to 31 August 2009. Results: There were 92 respondents, ranging in age from 15 to 77 years. Of the 90 who identified their role, 35.6% were patients, 12.2% visitors and 52.2% health care professionals. About 23% of respondents disagreed that one could have H1N1 without fever or flu-like symptoms, while 14.3% thought influenza could not be caught from an asymptomatic infected person. About 30% perceived the H1N1 death rate as high. From this study, 82.2% of respondents agreed or strongly agreed that Singapore's H1N1 responses were essential, while 14.6% found it overdone. In particular, healthcare workers and doctors found their professional work to be inconvenienced. Although more than two-thirds of doctors held this view, an equal proportion agreed the outbreak response was essential. Conclusions: There was a high level of acceptance of response measures as essential, despite the perceived inconvenience. We propose that the success of containment measures requires unity of purpose and understanding among stakeholders at all levels.

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Introduction

Following the announcement by the World Health Organization (WHO) that outbreaks of a novel influenza virus had occurred in Mexico and several parts of the United States of America,[1] the Emergency Preparedness Teams of the Singapore General Hospital and its sister institutions on the Outram Campus were activated. Measures to reduce the likelihood of transmission within the hospital were instituted.

As the week beginning 27 April 2009 progressed, WHO raised its alert level, reaching phase 5 on 29 April 2009.[2] This subsequently was raised to phase 6 on 11 June 2009.[3]

The Ministry of Health (MOH) in Singapore also escalated its alert level. Although at the time no cases of the virus had been detected, the alert level was raised from Green to Yellow on 28 April 2009,[4] then to Orange on 30 April 2009.[5] It was subsequently downgraded to Yellow on 11 May 2009 when data emerged indicating that infection caused by the Influenza A (H1N1) strain was milder than originally feared.[6]

Following identification of the emerging H1N1 situation, containment measures and precautions were instituted. At our hospital, the following were enforced: wearing of personal protective equipment (either surgical mask or N95 mask; and use of gown, gloves, goggles and even powered air-purifying respirators, depending on the clinical situation), daily monitoring of temperature, and logging of staff and visitor contacts with patients. In addition, a directive was issued cancelling all staff leave and official trips until further notice. As was the case with the other hospitals, thermal scanners were set up to screen staff and visitors for fever, and limits were placed on the number of visitors a patient could have. In the earliest days of the outbreak, when cases were limited to a few countries, visitors and patients to the outpatient clinics had to answer a short questionnaire on their travel history. Across the country, the usual change of posting for medical officers, scheduled for early May as always, was put off for 2 weeks. To free hospital beds so that patients suspected to have H1N1 infection could be nursed in isolation, elective surgeries were cut. Some

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of these measures were rolled back as the morbidity and mortality of H1N1 infection became better understood. As the virus made its way through Singapore, the authorities' stance shifted from containment to mitigation, i.e., from "stopping the spread of the virus" to "caring for those who fall ill".[7] In tandem with the stance of the authorities, in our hospital, the various containment measures were relaxed gradually.

These measures, modelled on those implemented during the severe acute respiratory syndrome (SARS) crisis of 2003,[8,9] stimulated debate among staff and members of the public. Some of this debate took place in the press. Yet it is unclear whether opinions published in the press (or online) were representative of a vocal minority or of the broader population. We undertook this survey to understand better the opinions of patients, visitors and healthcare workers (HCW) at the Singapore General Hospital (SGH).

Materials and Methods

A survey of SGH patients, visitors and staff was performed, using a 2-page observed self-administered survey (Supplementary Information). The survey period was from 21 May 2009 to 31 August 2009. The survey was approved by the hospital's Institutional Review Board.

Potential participants were approached by the investigators and asked to complete the questionnaire. Names were not obtained from the respondents, nor was information obtained that could lead to their identification. The investigator observed the participant at a discreet distance to ensure they would not be privy to the answers, but would nevertheless be able to verify that the identified participant was the same individual who answered the questionnaire. Completed questionnaires were immediately placed in a response box and were only inspected upon data entry. Staff of the Department of Infectious Diseases were not eligible for participation in the outbreak, as the outbreak and the response to it had a direct impact on their personal and professional lives.

Responses were tabulated in Microsoft Excel software and analysed using its PivotTable function.

Results

A total of 92 responses were received. Respondents' ages ranged from 15 to 77 years. Of the 90 who provided information on their role, there were 32 patients (35.6%), 11 visitors (12.2%) and 47 healthcare professionals (52.2%).

For the questions regarding H1N1 transmission and severity, the survey fielded 3 questions. When asked whether one could have H1N1 without fever or flu-like symptoms, 91 answered, with 21 (23.1%) saying this was false, 68 (74.7%) finding it true and 2 (2.2%) not knowing the answer.

On whether one could catch influenza from an infected person without fever or flu-like symptoms, 91 answered. Of these, 13 (14.3%) said this was false, 77 (84.6%) found it true, and 1 (1.1%) did not know.

The perceptions of H1N1's death rate were varied. Twenty-seven out of 89 (30.3%) agreed that the H1N1 death rate was high, whereas 34 out of 89 (38.2%) disagreed with this statement.

Opinions on the appropriateness of Singapore's outbreak response also varied. Among the 90 who answered the question, 74 (82.2%) agreed or strongly agreed that the response was essential. Of the 89 who responded to the following question, 13 (14.6%) felt it was overdone, 7 (7.9%) felt it was inadequate, while the remaining 69 (77.5%) found it adequate.

Respondents were also asked to describe how the outbreak containment measures had affected their personal life, family life and professional work. For personal lives, 44 of 88 (50%) respondents were neutral, 31 (35.2%) found it mildly to very inconvenient, and 13 (14.7%) found it convenient. When it came to family life, 54 of 89 (60.7%) respondents were neutral, 21 (23.6%) found it mildly to very inconvenient, and 11 (12.4%) found it convenient. For professional work, out of 86 who responded, only 28 (32.6%) felt neutral about the impact. Forty-three (50.0%) found it mildly to very inconvenient, while 15 (17.4%) found the containment measures convenient.

Effect of Respondent Identity on Perceived Inconvenience to Professional Work

Responses were further evaluated according to respondent identity (patient, visitor or healthcare worker). Out of the 27 who identified themselves as patients (and answered this question), 9 (33.3%) felt their professional work had been inconvenienced. Of the 10 who self-identified as visitors, 5 (50.0%) described inconvenience to their professional work. Among the 47 who self-identified as HCW, 28 (59.6%) found the H1N1 response measures as inconveniences to their professional work.

Among the respondents, 11 self-identified as doctors. Of these, 8 (72.7%) felt their professional work had been inconvenienced, although an equal number felt that Singapore's outbreak response was essential. Six (54.5%) were neutral about the response measures, 1 (9.1%) found them inadequate and 4 (36.4%) felt they were overdone.

Perceived MOH Alert Level

We also studied how the perceived MOH Alert Level affected respondents' views of containment measures. Of 92 respondents, 2 specified Green as the prevailing MOH Alert Level at the time of completing the survey form, 77 specified Yellow, 4 Orange, and 2 Red. Five did not know and 2 did not answer.

Perceived MOH Alert Level and Inconvenience Towards Individual Personal Life

Of the 2 who reported that MOH Alert Green was in force, 1 was neutral and 1 found the measures convenient towards their individual personal life.

Of the 77 perceiving MOH Alert Yellow, 28 (36.4%) found it inconvenient, 39 (50.6%) were neutral, and 9 (11.7%) felt it was convenient. One did not answer this question.

Among the 4 who reported MOH Alert Orange, 2 (50.0%) found the containment measures inconvenient, whereas 2 (50.0%) were neutral.

Of the 2 who perceived MOH Alert Red, 1 found it convenient towards his/her individual personal life, with the other respondent choosing not to answer.

Of the 5 who did not know the MOH Alert Level, 2 (40.0%) found the measures convenient, 2 (40.0%) were neutral on this, and 1 (20.0%) did not answer.

Of the 2 who did not answer regarding the MOH Alert Level, 1 found it very inconvenient, and the other did not answer.

Perceived MOH Alert Level and Inconvenience Towards Professional Life

Among the 2 who responded that the prevailing MOH Alert Level was Green, 1 was neutral and the other found the measures inconvenient towards their professional life.

Of the 77 respondents stating MOH Alert Yellow, 38 (49.4%) found the measures inconvenient, 24 (31.2%) were neutral and 12 (15.6%) found them convenient. The remaining 3 were either retired or chose not to answer.

Of the 4 stating MOH Alert Orange, 3 (75.0%) found the measures inconvenient, with 1 (25.0%) neutral.

Of the 2 stating MOH Alert Red, 1 described the measures as convenient and 1 did not answer.

Of the 5 who did not know the MOH Alert Level, 2 (40.0%) were neutral, 2 (40.0%) found the measures convenient, and 1 (20.0%) did not answer.

Of the 2 respondents who did not specify the perceived MOH Alert Level (as opposed to reporting they did not know), 1 found the measures inconvenient while the other chose not to answer.

Effect of Working Experience During SARS

Working experience during the 2003 SARS outbreak was included as a question. Of the 25 respondents who worked locally during SARS, 21 (84.0%) agreed or strongly agreed that the current response measures were essential, with only 1 (4.0%) disagreeing.

Of the 22 who specifically answered that they did not work locally during SARS, 17 (77.3%) agreed or strongly agreed that the measures were essential. Five (22.7%) were neutral and none disagreed. The remaining respondents either left the question blank or provided a NA response.

Discussion

The sample size of this study was small, which limits the potential for meaningful conclusions. Despite this constraint, limited conclusions can be drawn which merit further study.

It is notable that despite extensive public education campaigns in Singapore, nearly 1 in 4 respondents still believed that H1N1 always presented with fever or flu-like symptoms, with nearly 1 in 6 believing that one could not catch influenza from an infected person who did not have fever or flu-like symptoms. These beliefs ran contrary to expert opinion on H1N1 transmissibility.[10,11] This has implications for public education, as personal hygiene may limit community spread of H1N1.[12]

The vast majority (82.2%) of respondents accepted that the containment response measures were "essential", with only 14.6% finding it overdone. Yet it is clear that a significant proportion felt the measures had inconvenienced them: 35.2% and 23.6% found it inconvenient for their personal and family lives, respectively. Since a proportion of elective surgeries were cut, and since the survey was conducted within the clinics and wards of SGH, we did not reach the very patients whose schedules had been obviously and directly affected by the measures. Had we managed to reach them, it is possible that the proportion describing the measures as inconvenient would have increased. It is, however, not possible to say if the proportion accepting the measures as "essential" would have stayed the same.

Of note, 50% of respondents felt the measures were inconvenient for their professional work. Subgroup analysis showed this sentiment to be mirrored among visitors as well as healthcare workers, although a larger proportion of the latter (59.6%) found containment measures inconvenient. Among doctors, 72.7% found the measures inconvenient to their professional work, but a similar number (72.7%) saw the outbreak response as essential. Nevertheless, it is notable that 36.4% of the 11 doctors who responded felt the measures were overdone.

The trend of respondents finding measures more inconvenient in professional work (as compared to the effect on personal life) was unsurprising, given that half of them (52.2%) were healthcare professionals and thus likely to have containment measures directly affecting their work.

As relatively few respondents reported MOH Alert Levels other than Yellow as prevailing during their completion of the survey, it is difficult for us to draw clear conclusions about the effect of Alert Levels on public perception. However we see a role for future comparative studies using the same survey, should the H1N1 situation evolve: the WHO in late

August 2009 advised countries in the northern hemisphere to prepare for a second wave of pandemic spread.[13]

The high level of acceptance of response measures as "essential" is notable, given the perceived inconvenience. This could be due to factors such as the working culture in Singapore or previous social conditioning from the SARS experience in 2003. In our limited subgroup analysis of respondents with SARS-era working experience, we found equally high acceptance of response measures as "essential", compared to the overall survey population. The SARS crisis received wide media coverage. Families that lost several members to SARS were featured in the press, as were the deaths of HCW. Television programmes were made about the impact of the virus, and books were published on the crisis.[14,15] Passenger traffic at Changi Airport, regularly touted as among the world's best, fell to historic lows, plummeting by as much as 58%.[16] A multitude of government agencies came together to fight SARS. The state recognised healthcare workers who were in the forefront of the fight against SARS with National Day medals. In all likelihood, the SARS crisis created an indelible impression on the minds of Singaporeans. Hence, the finding that whether or not they had worked in a local hospital during the SARS crisis, the respondents agreed that the measures were essential.

The survey was not nuanced enough to determine which aspects of the measures were particularly inconvenient. It is interesting that, inconvenience notwithstanding, a large proportion of the respondents felt the measures were essential. Although the survey lasted till August, most of the respondents were contacted and had responded by the end of June. In May and June 2009, the fact that the pandemic virus was associated with a low case fatality rate (CFR) was still not well known.[17] In addition, the virus made its impact felt in Singapore only in June 2009.[18] We submit that knowledge about the lethality of a disease will have an impact on people's response to, and acceptance of measures.[19] Measures perceived as draconian will only be accepted if a communicable disease has a high CFR. Indeed the appropriateness of response measures is assessed by the CFR.[17] In the setting of a new infectious agent whose lethality is unknown, the implementation of restrictive policies must come with strong communication explaining the uncertainties faced by the authorities, and the potential benefits of individual measures. Concerns raised by sub-groups adversely affected by the measures should be addressed sympathetically, consistently and objectively. "Buy in" on the part of all stakeholders is crucial. Without adequate "buy in" by stakeholders, compliance by patients, visitors and staff is at best perfunctory; at worst it risks degenerating into theatre. The success of containment efforts requires unity of purpose and understanding among stakeholders at all levels.

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