

ORIGINAL RESEARCH



How would Australian hospital staff react to an avian influenza admission, or an influenza pandemic?

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Abstract

Objective: To estimate the expected staff absentee rates and work attitudes in an Australian tertiary hospital workforce in two hypothetical scenarios: (i) a single admission of avian influenza; and (ii) multiple admissions of human pandemic influenza.

Methods: A survey conducted at hospital staff meetings between May and August 2006.

Results: Out of 570 questionnaires distributed, 560 were completed. For scenario one, 72 (13%) indicated that they would not attend work, and an additional 136 (25%) would only work provided that immunizations and/or antiviral medications were immediately available, so that up to 208 (38%) would not attend work. For scenario two, 196 (36%) would not attend work, and an additional 95 (17%) would work only if immunizations and/or antiviral medications were immediately available, so that up to 291 (53%) staff would not attend work. Staff whose work required them to be in the ED (odds ratios 2.2 and 1.6 for each scenario respectively) or on acute medical wards (odds ratios 2.2 and 2.0 respectively) were more likely to work.

Conclusion: High absenteeism among hospital staff should be anticipated if patients are admitted with either avian or pandemic influenza, particularly if specific antiviral preventative measures are not immediately available. Measures to maximize the safety of staff and their families would be important incentives to attend work. Education on realistic level of risk from avian and pandemic influenza, as well as the effectiveness of basic infection control procedures and personal protective equipment, would be useful in improving willingness to work.

Key words: *absenteeism, avian influenza, hospital staff, pandemic, work attitude.*

Introduction

Severe acute respiratory syndrome (SARS) and avian (H5N1) influenza outbreaks pose well-known threats to

the health, and even lives, of health workers.¹ High absenteeism is very disruptive to hospital service provision.^{2,3} During the SARS outbreak, affected hospitals experienced severe staff shortages,⁴ as a result of

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personal or family health concerns, child care issues, quarantine measures or inability to get to work.^{5,6} Staff were frightened for both their own and their family's health, and experienced significant psychosocial stress.^{3,7-10} Only 18% of 186 health-care staff surveyed in the USA were willing to work in the hypothetical setting of a transmissible infectious agent for which only unproven, experimental prophylaxis was available.¹¹ In the event of an influenza pandemic almost half of the local staff in another US study would be unwilling to work.¹² However, other studies have suggested that the implementation of appropriate education and protective measures improved willingness to work.^{5,11,13,14}

To minimize the risk of influenza transmission, health worker protection should involve both basic and specific measures. Basic measures include infection control procedures and personal protective equipment (PPE).¹⁵ Basic infection control procedures consist of hand washing,¹⁶ isolation and barrier nursing, and proper use and disposal of medical equipment, whereas PPE consists of a minimum of a surgical mask, but for close patient contact, should include a P2 mask, protective gown, gloves and eyewear,¹⁷ which are available in most Australian hospitals. Specific measures include antiviral drugs (such as oseltamivir) and immunizations.¹⁸ Although the Australian government is stockpiling antivirals,^{19,20} sufficient antivirals would not be available for weeks,^{21,22} and immunizations can only be developed once the viral strain has been identified with a lag time of about 6 months.²¹

Given the potential for high morbidity and mortality coupled with a significant impact upon the operation of the health-care system, we aimed to describe how an avian or pandemic influenza threat would affect hospital staff in an Australian setting. These effects are described in terms of expected absentee rates, work attitudes, concerns and incentives, which might be addressed in order to maximize work attendance should an influenza admission or pandemic occur.

Methods

We surveyed a convenient sample of Gold Coast Hospital staff between May and August 2006. The Gold Coast Hospital is a 570-bed major metropolitan hospital in Southport, Queensland, Australia, employing 2051 full-time equivalent workers. Data were collected using a questionnaire that was designed in collaboration with the hospital administration, infectious diseases and ED. It explored work attitudes to two hypothetical influenza

scenarios: (i) a single patient admitted with avian influenza; and (ii) multiple patients admitted with a new strain of human influenza during a pandemic. Its format was self-report pencil-and-paper, and addressed demographics, reasons why staff would (or would not) work, if they would work in the presence or absence of basic preventative measures (i.e. PPE) and specific preventative measures (immunizations and antiviral medications), and also work incentives and perceived risk. The importance of work incentives and level of concern were measured on a 10 cm visual analogue scale.

The anonymous questionnaire was distributed to hospital staff (medical, nursing, allied health and support staff) working part-time or full-time (Table 1). We aimed to sample approximately 25% of each staff group, based on the number of full-time equivalent staff positions. Questionnaires were distributed during routine staff meetings during working hours. Participation was voluntary and informed consent was obtained. Completed questionnaires were placed in a locked box and stored securely. The study was approved by the hospital's human research and ethics committee.

We compared anticipated work attendance rates between demographic groups, using Pearson's χ^2 -test to detect differences in proportions. The Student's paired *t*-test was used to compare continuous variables between scenarios, setting *P* values of <0.05 as statistically significant. Both univariate and multivariate odds ratios (OR) were calculated for all potential predictors (Table 1). Univariate OR and their 95% CI were calculated using cross tables, and Yates correction for 2 × 2 tables was used. Multivariate OR were determined by logistical regression, with forward inclusion of predictive variables for both scenarios. To decide whether the variable was included in the logistical regression model, a threshold of *P* < 0.30 had to be reached in univariate analysis. All statistical analyses were preformed using SPSS version 15.0 (SPSS, Chicago, IL, USA).

Results

A total of 570 questionnaires were distributed to staff. Ten (2%) declined participation (98% response rate). This response represents 27% of the hospital's workforce. Most were female (two-thirds), aged between 21 and 50 years (three-quarters), and nurses (44%). The 101 (18%) medical staff consisted of 22 consultants, 46 registrars and 33 residents. Most staff were required to work in areas with acute medical patients (77%), and

Table 1. Characteristics of study subjects

		Total n = 560	100%	% of FTE (n = 2051) 27.3%
Job description	Clerical/administration	68	12.1	28
	Porterage/cleaning	38	6.8	59
	Laundry	5	0.9	41
	Kitchen	15	2.7	21
	Allied health	24	4.3	24
	Pathology	26	4.6	26
	Nursing staff	245	43.8	24
	Medical staff	101	18.0	26
	Medical imaging	17	3.0	37
	Pharmacy	18	3.2	54
	Missing	3	0.5	
Age (years)	<21	5	0.9	
	21–30	162	28.9	
	31–40	151	27.0	
	41–50	139	24.8	
	51–60	83	14.8	
	>60	16	2.9	
	Missing	4	0.7	
Sex	Male	155	27.7	
	Female	363	64.8	
	Missing	42	7.5	
Employment status	Full-time	489	87.3	
	Part-time	64	11.4	
	Missing	7	1.3	
Dependants	Yes	316	56.4	
	No	239	42.7	
	Missing	5	0.9	
Pregnancy in family	No	542	96.8	
	Yes	14	2.5	
	Missing	4	0.7	
Required in the ED for work	Yes	280	50	
	No	273	48.8	
	Missing	7	1.3	
Working with acute medical patients	Yes	427	76.3	
	No	127	22.7	
	Missing	6	1.1	
Mean (\pm SD) duration of employment in years		11.03	9.42	

FTE, full-time equivalent.

about half of all staff attended the ED during their usual work (51%) (Table 1).

Some staff ($n = 72$, 13%) would not attend work if there was even a single case of avian influenza admitted (scenario one). Of the remainder, 136 (25%) would not work until specific antiviral preventative measures were provided (despite immediate access to basic preventative measures). Adding these, a total of 208 (38%) of staff would not attend work in scenario one.

In response to multiple admissions indicating an influenza pandemic (scenario two), 36% of staff would not attend work. Of the remaining 351 (64%) staff, a further 95 (17%) would not work without immediate provision of specific antiviral preventative measures (despite immediate access to basic preventative measures). This resulted in a total of 291 (53%) of staff not attending work in scenario two.

Table 2. Percentage absentees in scenarios one and two

	Scenario one: one avian influenza admission		Scenario two: influenza pandemic	
	<i>N</i>	Percentage absentees (95% CI)	<i>N</i>	Percentage absentees (95% CI)
Total	551	13.1 (10.5–16.1)	547	35.8 (31.9–39.9)
Sex				
Male	155	9.0 (5.5–14.6)	152	28.3 (21.6–35.7)
Female	356	15.4 (12.1–19.6)	354	39.5 (34.3–44.5)
Employment status				
Part-time	62	21.0 (12.7–32.6)	61	47.5 (35.5–59.8)
Full-time	484	12.2 (9.6–15.4)	479	34.2 (30.1–38.6)
Medical level				
Intern	33	9.1 (3.1–23.6)	31	38.7 (23.7–56.2)
Registrar	46	6.5 (2.2–17.5)	46	30.4 (19.1–44.8)
Consultant	22	9.1 (2.5–27.8)	21	33.3 (17.2–54.6)
Dependants				
No	313	12.1 (9.0–16.2)	309	34.0 (28.9–39.4)
Yes	235	14.5 (10.5–19.5)	233	38.2 (32.2–44.6)
Pregnancy in family				
No	536	11.9 (9.5–15.0)***	529	34.4 (30.5–38.6)
Yes	13	61.5 (35.5–82.3)	14	92.9 (68.5–98.7)
Required in the ED for work				
No	268	17.5 (13.5–22.5)*	267	41.2 (35.5–47.2)
Yes	279	9.0 (6.1–12.9)	274	30.3 (25.2–36.0)
Working with acute medical patients				
No	125	20.8 (14.6–28.7)*	122	48.4 (39.7–57.1)*
Yes	422	10.9 (8.3–14.2)	420	32.1 (27.9–36.8)

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$, Pearson's χ^2 -test comparing subgroups.

Predicted absenteeism for either scenario is summarized in Table 2. Absenteeism was not statistically different between age groups, job description, duration of employment, presence of dependants or sex.

The logistical regression models for both scenarios indicated that the same four variables were significant predictors for absenteeism. These were: employment status, pregnancy in the family, being required in the ED for work and working with acute medical patients. On the basis of the Hosmer and Lemeshow goodness of fit test ($\chi^2 = 3.1$, d.f. = 4, $P = 0.54$ for scenario one and $\chi^2 = 6.3$, d.f. = 6, $P = 0.39$ for scenario two), both models fit the data well. The multivariate OR are reported in Table 3.

Staff who worked part-time were more likely to be absent in both scenarios compared with full-time workers (21% vs 12%, OR 2.3 [95% CI 1.1–4.9], $P < 0.05$ and 48% vs 34%, OR 2.7 [95% CI 1.4–5.0], $P < 0.01$ respectively). Staff with a pregnancy in the family were also significantly more likely to be absent in both scenarios compared with other staff (62% vs 12%, OR 0.09,

$P < 0.001$ and 93% vs 34%, OR 0.04 [95% CI 0.01–0.3], $P < 0.001$ respectively).

Interestingly, in both scenarios, staff were significantly less likely to be absent if their normal job required them to be in an area where the potential for contact with influenza patients was high (i.e. the ED) (9% vs 18%; OR 1.9 [95% CI 1.1–3.4], $P < 0.05$ in scenario one and 30% vs 41%, OR 1.81 [95% CI 1.1–2.8], $P < 0.05$ in scenario two) or areas with acute medical patients (i.e. medical wards) (11% vs 21%; OR 1.9 [95% CI 1.02–3.4], $P < 0.05$ and 32% vs 48%, OR 2.0 [95% CI 1.1–3.4], $P < 0.05$, for scenarios one and two respectively).

Of medical staff, almost 8% in scenario one and 34% in scenario two would not attend for duty, independent of seniority. Job description had no significant effect on work absenteeism in both scenarios. Specifically, cleaning/porterage staff, pathology staff and nursing staff were all at least as likely to work as medical staff; however, this did not reach statistical significance. In both scenarios, 70–80% of staff declared that reasons for not working were primarily concerns for their own health, and concerns for their family's health.

Table 3. Factors associated with likely attendance at work in scenarios one and two

	Scenario one: one avian influenza admission OR (95% CI)	Scenario two: influenza pandemic OR (95% CI)
Significant factors, multiple logistical regression model:††		
Employment status		
Part-time	1.0†	1.0†
Full-time	2.3* (1.1–4.9)	2.7** (1.4–5.0)
Pregnancy in family		
No	1.0†	1.0†
Yes	0.1*** (0.03–0.3)	0.04*** (0.01–0.3)
Required in the ED for work		
No	1.0†	1.0†
Yes	1.9* (1.1–3.4)	1.8* (1.1–2.8)
Working with acute medical patients		
No	1.0†	1.0†
Yes	1.9* (1.02–3.4)	2.0* (1.1–3.4)
Other factors of interest:†††		
Sex		
Male	1.0†	1.0†
Female	0.8 (0.4–1.6)	0.7 (0.4–1.1)
Medical level		
Intern	1.0†	1.0†
Registrar	1.4 (0.3–7.6)	1.4 (0.6–3.8)
Consultant	1.0 (0.2–6.5)	1.3 (0.4–4.0)
Dependants		
No	1.0†	1.0†
Yes	0.9 (0.5–1.7)	0.8 (0.5–1.3)

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$. †Reference group. ††Significant factors as predicted by forward logistical regression analysis. †††Other factors, as predicted by logistical regression analysis. $OR > 1$ represents group less likely to be absent (more likely to work). $OR < 1$ represents group more likely to be absent (less likely to work). OR, odds ratio.

Table 4. Importance of incentives to work†

Incentive	Scenario one Mean (95% CI)	Scenario two Mean (95% CI)
Financial	5.89 (5.60–6.18)	5.80 (5.49–6.11)
Extra leave	5.38 (5.09–5.67)	5.49 (5.18–5.80)
Preventative measures for self	9.08 (8.90–9.26)	9.09 (8.91–9.27)
Preventative measures for family	9.00 (8.80–9.20)	9.03 (8.83–9.23)
Alternative accommodation	7.41 (7.16–7.66)***	7.81 (7.56–8.07)
Level of concern	5.50 (5.28–5.72)***	6.58 (6.35–6.82)

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$, paired t-test comparing scenarios one and two. †Scale based on a visual analogue scale (0–10), where 10 is most important.

For both scenarios, several possible incentives to work were offered and staff were asked to rate the importance of these on a visual analogue scale from 0 to 10. The most important were the provision of full preventative measures for staff, and provision of alternative accommodation for staff who would attend work, to reduce the risk of transmission to their families (Table 4).

Among the staff who would work, a substantial percentage (22% and 39% for each scenario respectively) indicated that they would require alternative accommodation. Most respondents ($n = 414$, 87%) overestimated the mortality rate, perceiving it to be more than 0.1%, with almost half (48%) grossly overestimating it to be 10% or more.

Discussion

Since 1997, over 268 human cases of H5N1 avian influenza have been documented worldwide (although none has been reported in Australia²³), with mortality rates of around 60%.²⁴ Importantly, there have been no cases of human-to-human transmission to the general community or to health-care staff.²⁵

Of more concern, however, is that the human and avian influenza A viruses might undergo the genetic changes of 'antigenic drift' into highly pathogenic forms,^{25,26} triggering human influenza pandemics.^{27,28} This might create high hospital workforce absenteeism as a part of enormous global morbidity, mortality and catastrophic social and economic disruption.^{27,29}

We found that the expected absentee rates among tertiary hospital staff would be high enough to disrupt the normal functioning capacity of the hospital. The estimate of up to 38% absenteeism for avian influenza virus is alarmingly high as the H5N1 virus has never been transmitted from patients to health-care workers.²⁵ We felt that the disproportionate concern among staff most likely relates to avian influenza's considerable and often dramatic media profile.¹

For a pandemic influenza threat, the absentee rate of up to 53% is comparable to prior international findings for an equally threatening infectious and transmissible biological hazard.^{11,12} This high predicted absentee rate is less surprising as 21% of SARS victims worldwide were health-care staff. However, transmission of the SARS virus was found to be most likely because of lack of basic preventative measures.³⁰ We felt that respondents in our survey did not fully appreciate the effectiveness of basic preventative measures. During the SARS epidemic, hospital staff in Toronto and Singapore needed specific education to develop a positive view on the effectiveness of basic protective measures in preventing further transmission of the SARS virus.^{30,31}

Previous research has shown that in the face of perceived risks to personal health, willingness to attend work was higher in medical and nursing staff than in support staff.^{5,12} Our study did not find such a difference, but along similar lines, we found that staff working in areas likely to be directly responsible for the care of influenza patients (i.e. emergency and acute medical wards) were more likely to report for duty, despite the higher risk of exposure to the virus. This finding was the same for both clinical and non-clinical support staff. This is consistent with research demonstrating that staff are more willing to attend work if they perceive their role to be central and important in

the response to a public health threat.^{5,12,13} Along similar lines, full-time employees were less likely to be absent, which might reflect either greater job commitment or job dependency compared with part-time workers.

The corollary of the above finding is that other hospital services not directly related to treatment of influenza patients might deteriorate, compounding the surge-capacity situation and hospital crisis.³² Particular attention should therefore be focused on minimizing absenteeism of staff in these departments (e.g. pathology, pharmacy, allied health and non-acute medical and surgical wards). Hospitals will have to alter their casemix at the height of an influenza pandemic and restrict outpatient services and elective surgery.

Surprisingly, neither duration of employment nor seniority of medical staff had any significant effect on willingness to work. As expected, there was a very strong unwillingness to attend work if there was a pregnancy in the family; however, the impact of this would be minimal, as less than 3% of our respondents had a pregnancy in the family ($n = 14$).

The work incentives perceived to be important (protective measures for themselves and their families) were in keeping with other literature.^{5,11-13} Provision of alternative accommodation for staff who chose to work during the influenza threat also scored highly. During the SARS threat, multiple reports demonstrated that these supportive measures were important, and thus maximized work attendance.^{3,4,7,8} Implementing such support measures in the event of an influenza pandemic is in accordance with recent Australian recommendations in pandemic planning.³²

Of particular interest was that a high proportion (87%) of staff overestimated the mortality rate of the recent 'Hong Kong' and 'Asian' influenza pandemics. This overestimation of mortality rate, together with the expected high absentee rates for both scenarios, strongly suggests that the perceived risk (rather than actual risk) is an important determinant of work attendance. This is supported by an increased psychological morbidity and an unwillingness to work in staff who overestimated their actual risk during the 2003 Hong Kong SARS epidemic.⁹

The present study has a number of limitations. We cannot exclude that a form of selection bias has taken place. However, the high return rate (98%) was from a good representation of the actual hospital staff. We perceived that the high return rate and survey completeness were attributable to the personal distribution of the survey by the researchers and by asking staff to

complete and return it within the allocated time of the information session.

A second limiting factor of the present study was the potential for bias caused by socially acceptable answering, resulting in possible underestimated absentee rates. If either scenario actually occurred, staff might not act in accordance with their response depending on influences, such as media, personal contacts and unexpected personal circumstances. It is also possible that lack of availability of leave or financial pressures might force staff to reconsider their decision to not work. On the other hand, should a pandemic occur, the absentee rate might be even higher because of staff's having to care for sick family members, transport difficulties, quarantine measures and childcare commitments following school closure.^{5,31} These limitations should be considered when using the findings of the present study in development of pandemic planning in other health-care settings.

Conclusion

An influenza pandemic has the potential to cause high hospital staff absenteeism and consequently disrupt hospital medical services at a time when they are needed most. We recommend thorough compulsory staff education on the effectiveness of basic infection control procedures and PPE in preventing transmission of the influenza virus, as well as accurate education on the actual risk posed by the influenza virus or other respiratory pathogens. This would potentially minimize staff absenteeism and thereby limit disruption to hospital services in the event of an Australian influenza pandemic threat.

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Author contributions

FM, SG and JL conceived the study, and FM and JL submitted the ethics application. GK performed the statistical analyses. FM and GK created the survey and all authors were involved with the data collection. FM was the principal author. All authors contributed to the final manuscript.

Competing interests

None.

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Appendix I

A confidential survey regarding work attitudes of Gold Coast Hospital staff in the event of a local outbreak of either avian influenza (bird flu) or a new strain of human influenza.

Participant information

This is a voluntary, confidential survey regarding the work attitudes of Gold Coast Hospital staff in the event of either a local outbreak of avian influenza (bird flu) or a new strain of human influenza.

This survey is for ED research purposes. Your participation in this survey is greatly appreciated. The information gathered will be extremely useful in workforce planning and in infectious diseases disaster management.

The survey should take approximately 15 min to complete. Your responses will be absolutely anonymous and confidential. All surveys will be kept in a secure, locked area so please answer the questions as honestly as possible. All data will be destroyed after 6 months. This will not impact on your employment at Gold Coast Hospital or in Queensland Health.

Please be clear that the scenarios in this survey are purely hypothetical and that there are no current local or Australian cases of avian influenza.

This research project has been authorized by the Ethics Committee for the Gold Coast Health Service District, ensuring your security and privacy.

Please indicate your chosen answer(s) with a tick in the box provided. In some questions more than one option might be appropriate.

Once you have completed the questionnaire please slip it into the sealed box provided. Thank you for your time.

Should you require further information, please contact Dr Brian Bell, Executive Director of Medical Services on (07) 5519 8274.

PART A

1. Please tick your age (years):

<21	<input type="checkbox"/>
21–30	<input type="checkbox"/>
31–40	<input type="checkbox"/>
41–50	<input type="checkbox"/>
51–60	<input type="checkbox"/>
>60	<input type="checkbox"/>

2. Sex:

M	<input type="checkbox"/>
F	<input type="checkbox"/>

3. Are you employed as:

Part-time or <20 h/week	<input type="checkbox"/>
Permanent (including VMO) or >20 h/week	<input type="checkbox"/>
4. Please indicate what area you work in:

Clerical/administration	<input type="checkbox"/>
Porterage/cleaners	<input type="checkbox"/>
Laundry	<input type="checkbox"/>
Kitchen	<input type="checkbox"/>
Allied health	<input type="checkbox"/>
Pathology laboratory	<input type="checkbox"/>
Nursing	<input type="checkbox"/>
Medical doctor	<input type="checkbox"/>
Medical imaging	<input type="checkbox"/>
Pharmacy	<input type="checkbox"/>
5. If you are a doctor please indicate your level:

Intern/RMO	<input type="checkbox"/>
Registrar	<input type="checkbox"/>
Consultant/SMO	<input type="checkbox"/>
6. Please indicate how long you have worked in health care: ___ years and ___ months
7. Do you have any dependants?
Y N
8. Is there a pregnancy in the family?
Y N
9. Does your day-to-day work require you to be in the ED at any time?
Y N
10. Does your work require you to be in an area where *acute medical* (i.e. non-surgical) patients are cared for? (i.e. medical wards)
Y N

PART B

For the purposes of this section, the term ‘preventative measures’ refers to masks, clothing, antiviral medications and immunizations that might protect a person from being infected by the influenza virus.

1. If there was a patient with a confirmed case of avian influenza admitted to this hospital tomorrow, would you continue to work?

Y If you answered 'Yes' please continue to the question 2.

N If you answered 'No' please go to question 5.

2. Please indicate reason(s) why you would work:

Financial reasons

Lack of leave availability

Moral or ethical reasons

There is no reason not to

Other (please specify) _____

3. If you were immediately provided with all reasonable preventative measures, would you still live with your family for the duration of the avian influenza outbreak?

Y N

4. If basic preventative measures (masks and protective clothing) were immediately available, but there was a delay in the availability of antiviral medications or immunizations, would you continue to work in the meantime?

Y N

Now please go to question 7

5. Please indicate the reason(s) why you would not work:

Concerns regarding my health and safety

Concerns regarding the health and safety of my family or dependants

Other reasons why you would not work (please specify below)

6. For those who answered 'No' in question 1 and would not work, which of the following options would you take:

Take sick/family leave

Take long service leave

Take leave without pay

Resign

Other (please specify)

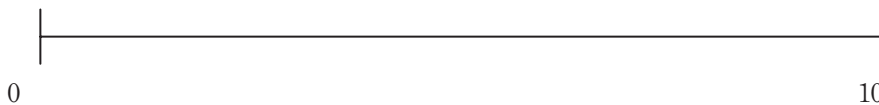
7. If there was a patient admitted to the hospital with a confirmed case of avian influenza, how important would the following incentives be in encouraging you to work?

Please rate the importance of every incentive by placing an 'X' between 0 and 10 (0 being unimportant and 10 being extremely important).

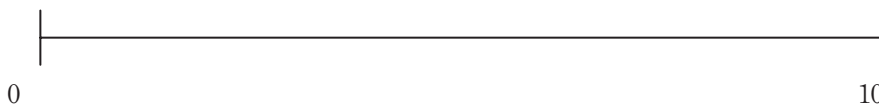
Financial incentive:



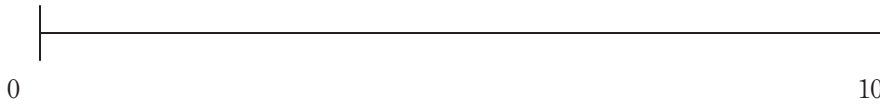
Additional leave entitlement:



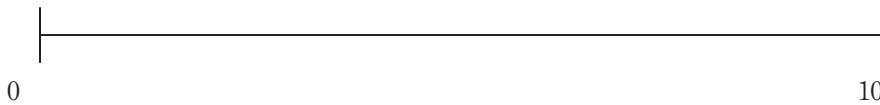
Provision of preventative measures for yourself:



Provision of preventative measures for your family:

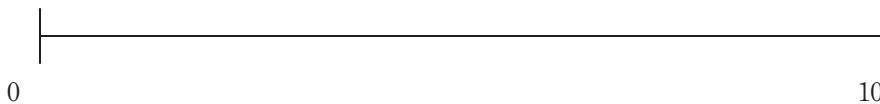


Provision of alternative accommodation for yourself – while you work (in order to protect your family):



8. Please indicate your overall level of concern regarding avian influenza:

Please mark line with an 'X'



(No concern at all)

(Extremely concerned)

PART C

For the purposes of this section, the term 'preventative measures' refers to masks, clothing, antiviral medications and immunizations that might protect a person from being infected by the influenza virus.

It is theoretically possible for the avian influenza virus to 'merge' some of its genes with the human influenza virus, thereby creating a new strain of human influenza. This new strain of human influenza would be transmissible from human to human and might lead to an influenza pandemic.

1. If there were many patients admitted to the hospital with this new strain of human influenza that had 'merged' with the avian influenza virus, would you continue to work?

Y If you answered 'Yes' please continue to the question 2.

N If you answered 'No' please go to question 5.

2. Please indicate reason(s) why you would work:

Financial reasons

Lack of leave availability

Moral or ethical reasons

There is no reason not to

Other (please specify) _____

3. If you were immediately provided with all reasonable preventative measures, would you still live with your family for the duration of the new strain human influenza outbreak?

Y N

4. If basic preventative measures (masks and protective clothing) were immediately available, but there was a delay in the availability of antiviral medications or immunizations, would you continue to work in the meantime?

Y N

Now please go to question 7.

5. Please indicate the reason(s) why you would not work:

Concerns regarding my health and safety

Concerns regarding the health and safety of my family or dependants

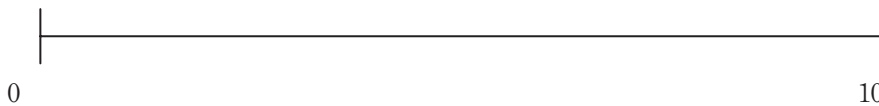
Other concerns (please specify below)

6. For those who answered 'No' and would not work, would you:

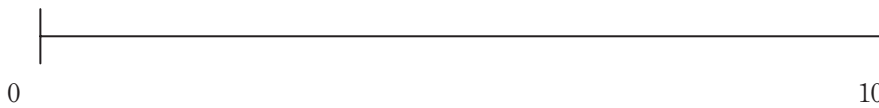
- Take sick leave
- Take long service leave
- Take leave without pay
- Resign
- Other (please specify)

7. If there were many patients admitted to the hospital with a new strain of human influenza that had merged with the avian influenza virus, how important would the following incentives be in encouraging you to work? Please rate the importance of every incentive by placing an 'X' between 0 and 10 (0 being unimportant and 10 being extremely important).

Financial incentive:



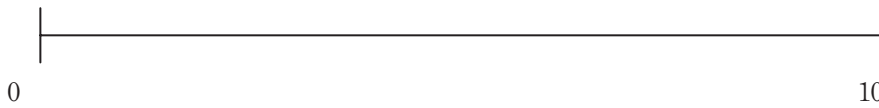
Additional leave entitlement:



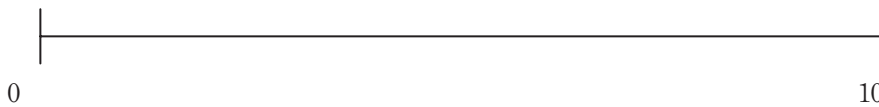
Provision of preventative measures for yourself:



Provision of preventative measures for your family:



Provision of alternative accommodation for yourself – while you work (in order to protect your family):



9. Please indicate your overall level of concern regarding avian influenza:

Please mark line with an 'X'



PART D

1. If there was a local outbreak of either avian influenza or a new strain of human influenza, which source(s) would you use to seek further information?

Please indicate all sources you would most likely use:

- Television
- Radio
- Internet
- QHEPS home page
- Gold Coast Hospital notices
- Friends/social
- Newspaper
- Medical journals
- Other (please specify)

2. In the Asian Flu (1957) and Hong Kong Flu (1968) pandemics what was the death rate?

Please tick one answer only:

- 1 in 2 or more (i.e. 50% or more died)
- 1 in 10 (i.e. 10%)
- 1 in 100 (i.e. 1%)
- 1 in 1000 (i.e. 0.1%)
- Less than 1 in every 1000 (i.e. <0.1%)

3. Please feel free to list any other constructive comments:
