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# Evaluation of BC's Influenza Prevention Policy:

## Results of a survey of healthcare workers' knowledge, attitudes and practices

### 2017

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## Background

The National Advisory Committee on Immunization (NACI) recommends that healthcare workers (HCWs) be immunized against influenza because they can transmit the infection to individuals at high risk for complications.<sup>1</sup> Despite this recommendation, coverage across healthcare organizations has been sub-optimal in British Columbia (BC).

### INFLUENZA PREVENTION POLICY

In 2012/13, British Columbia (BC) implemented the BC Influenza Prevention Policy which requires HCWs to be vaccinated against influenza or wear a mask in patient care areas during the influenza season. This was the first province-wide condition-of-service, vaccinate-or-mask (VOM) policy of its kind in Canada. The BC Influenza Prevention Policy has three goals:

- To increase influenza immunization rates in healthcare workers employed in BC health authorities
- To prevent transmission of influenza from healthcare workers to patients/residents and to other healthcare workers in healthcare facilities in BC
- To reduce influenza-related absenteeism in healthcare workers employed by health authorities in BC

#### POLICY STATEMENT

*All individuals covered by this Policy must be vaccinated annually against influenza or wear a surgical/procedure mask during influenza season when in a patient care area in accordance with this Policy. During an influenza outbreak, this Policy is suspended at the outbreak location and the Health Authority's outbreak policies will apply.*

### HEALTHCARE WORKER INFLUENZA IMMUNIZATION COVERAGE

Prior to the policy, influenza immunization coverage among acute care facility HCWs in BC ranged from 40 to 46% from the 2004/05 to 2011/12 influenza seasons, excluding the 2009/10 H1N1 pandemic year when coverage with seasonal vaccine was 35%.<sup>2</sup> Over the same time period, coverage among residential care facility HCWs ranged from 56 to 68%, excluding the 2009/10 H1N1 pandemic year when coverage with seasonal vaccine was 49%.<sup>3</sup>

Following the implementation of the BC Influenza Prevention Policy, influenza immunization coverage increased significantly for healthcare acute care facility HCWs from 40% for the 2011/12 season to 74% for the 2012/13 season, and increased for residential care facility HCWs from 57% to 75%.<sup>2,3</sup> In subsequent years, coverage has remained at a similar level but has not continued to increase.<sup>4,5</sup>

**Figure 1. Influenza immunization coverage for BC acute and residential care healthcare workers, 2006/07-2015/16**

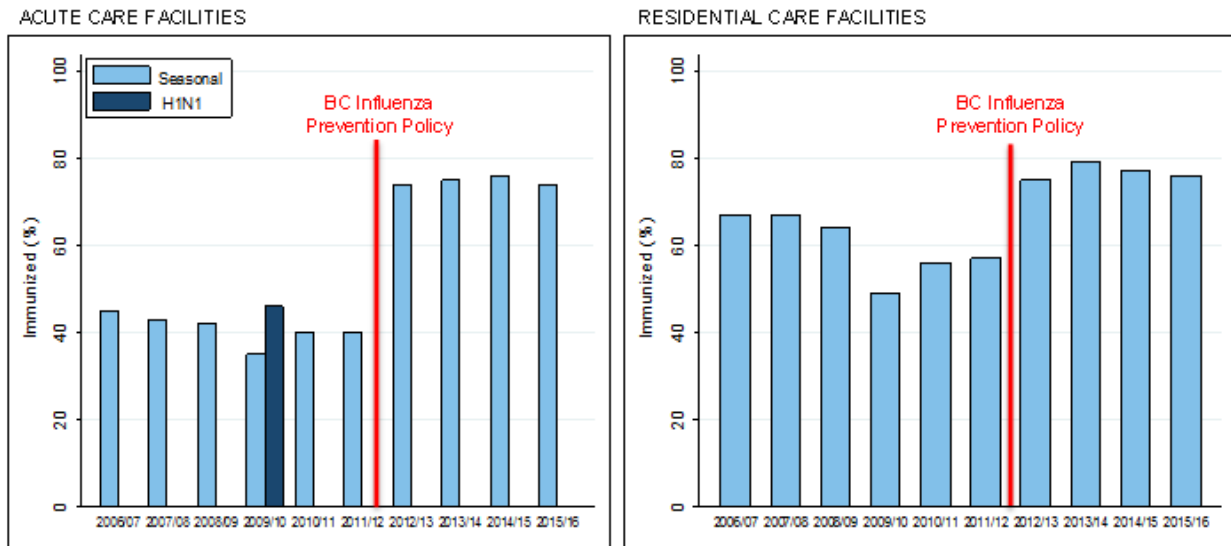


Figure adapted from 2015/16 influenza vaccination coverage for BC health care facilities reports.<sup>4,5</sup>

## POLICY EVALUATION ACTIVITIES

Prior to introduction of the policy, a national study team funded by the Canadian Immunization Research Network (CIRN) devised a policy evaluation plan to assess the outcome of the policy over several years, using mixed methods. A survey of healthcare workers was proposed as the third phase, following focus groups with implementation leaders and a survey of healthcare facility managers and directors (see Appendix A) which were completed from 2012 to 2014.

This study was the first survey of healthcare workers covered by the BC Influenza Prevention Policy. It was designed to investigate HCWs' experiences of the policy and how their experiences affected their decision to get vaccinated against influenza, to wear a mask in patient care areas during the influenza season, or to not comply with the policy. Further, questions targeted specifically to managers were intended to provide policy makers in BC with an understanding of the logistics, supports and challenges associated with implementation of the policy at the healthcare facility level.

Across Canada, numerous health care organizations and facilities have adopted similar vaccinate or mask policies, but BC remains the only province with a VOM policy that has provincial scope. The results may be of interest to policy makers in other provinces and territories across Canada.

## STUDY OBJECTIVES

- To describe HCWs' **knowledge, attitudes and practices** regarding influenza infection, influenza immunization, and the BC Influenza Prevention Policy.
- Identify **factors related to vaccination or mask wearing decisions** during the 2015/16 influenza season.
- To describe the **planning and implementation activities** for the 2015/16 provincial HCW influenza immunization campaign in BC.
- To identify **supports** of successful implementation of the policy.
- To identify **challenges and barriers** associated with implementing the policy.

## ABOUT THE 2015/16 INFLUENZA SEASON

The survey data were collected after the end of the fourth influenza season since the policy was introduced, and the third season in which disciplinary measures were enforced. The 2015/16 policy application period was the first one in which employees of all regional health authorities self-reported their influenza immunization status *or their choice to decline vaccination* via a self-reporting website. In the 2014/15 influenza season, the influenza vaccine strain composition was mismatched to the circulating strain resulting in unusually low vaccine effectiveness, the interim estimate of 2014/15 vaccine effectiveness was estimated at -8% overall (95% confidence interval -50 to 23%).<sup>6</sup> It is important to interpret the results of this survey which took place the following season, especially the qualitative results, with this in context. The 2015/16 interim influenza vaccine effectiveness estimate in Canada was 64% overall (95% confidence interval 44 to 77%).<sup>7</sup> This 2015/16 interim estimate was published on March 17, 2016 and therefore is unlikely to have affected intention to vaccinate for the majority of healthcare workers, but may have influenced the survey results conducted in April-May 2016.



# Methods

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## **ETHICS APPROVAL**

This study received approval by the University of British Columbia Behavioral Research Ethics Board.

## **SURVEY DEVELOPMENT**

The survey instrument was developed in collaboration with the BCCDC study team and representatives from health authorities. The survey was piloted by healthcare workers in August 2015 and revised based on feedback from pilot testers. The final survey is included as Appendix B. Respondents were directed to sections depending on responses to prior branching questions. Respondents identifying as managers or supervisors responsible for monitoring policy compliance were directed to an additional set of questions related to policy planning, implementation, enforcement and compliance.

## **DATA COLLECTION AND STORAGE**

The survey instrument was developed in FluidSurveys, a web-based survey software service provided by SurveyMonkey, with all data maintained in Canada.

Once the survey was closed, data were stored on local secure servers at the BCCDC that are password protected and regularly backed-up. Data were subsequently deleted from the FluidSurveys platform.

## **CONFIDENTIALITY AND CONSENT**

The survey did not ask for personally identifiable information and responses provided were not used to identify participants. No information that could be used to identify individual facilities or individual HCWs has been made publicly available. Participant's IP addresses were not recorded by FluidSurveys.

Although the survey did not ask for personally identifiable information, the employment information provided in this questionnaire could theoretically be used to identify respondents who have a unique role at their facility. The survey preamble clearly stated that the study would maintain participants' confidentiality. Results are presented aggregate, without naming individual facilities, organizations or job titles.

Invitations to participate explaining the purpose of the survey were circulated with the link to the survey. The invitations explained that participation in the survey was voluntary and respondents could answer all, some, or none of the questions. The invitations explained that clicking on the survey link and completing the survey implied consent to participate.

## RECRUITMENT AND PROMOTION

Invitations containing a link to the online survey were sent to all-staff email distribution lists at all regional health authorities, as well as staff of Providence Health Care, the Provincial Health Services Authority, and the First Nations Health Authority in April-May of 2016. Three reminder emails were circulated during the survey period.

Participants who completed the survey were offered the chance to enter a draw for a \$500 pre-paid Visa gift card.

## ADDITIONAL DATA SOURCE

A de-identified extract from the Workplace Health Indicator Tracking and Evaluation (WHITE) database was obtained to describe the BC healthcare worker population eligible to complete the survey. This database contains information about vaccine receipt and/or immunity testing relevant to health care employment, and is used annually for production of reports about influenza vaccine coverage in BC healthcare workers. Information on staff of First Nations Health Authority was not available in this database.

## PROJECT TIMELINE

May – July 2015	Design of survey instrument
July 2015	Applied and received ethics approval
August 2015	Piloted survey with volunteer HCWs
February – March 2016	Updated survey instrument for 2015/16 season
March 2016	Received ethics amendment approval
April 2016 – May 2016	Data collection
May 2016 – September 2016	Data analysis
September 2016	Presented results to policy planning and implementation committee
December 2016	Presented results at Canadian Immunization Conference
August 2017	Regional results circulated to policy and implementation committee
September 2017	Dissemination of results as a report

## ELIGIBILITY CRITERIA

After clicking the survey link to participate, participants proceeded to the survey questions if they identified as an employee of a BC health authority and that they had worked at least one shift during the 2015/16 influenza season (i.e., from December 2015 to March 2016).

# Analysis

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Survey responses were screened for eligibility and completeness by study team members. Of the 21,346 responses, 18,579 were retained based on eligibility and completeness criteria. Responses that violated the questionnaire skip patterns were cleaned. Representativeness of the survey sample was assessed by a comparison of the distribution of demographic variables and influenza vaccination status among respondents to the corresponding information for the BC HCW population eligible to complete the survey.

## QUANTITATIVE ANALYSIS

Descriptive figures were produced in Tableau 9. Likert scale questions were dichotomized (e.g., strongly agree and agree vs. neutral, disagree, strongly disagree, and don't know) for univariate and multivariable analysis. Univariate comparisons were assessed by chi-square test. A multivariable logistic regression model for influenza vaccine receipt was built using backwards elimination following single predictor screening. Factors predicting vaccine receipt with  $p < 0.1$  in univariate regression were included in the full model along with demographics, occupation, and facility type. Then, predictors with large  $p$ -values ( $p > 0.05$ ) were sequentially dropped from the model. Demographics, occupation, and facility type were retained in the model regardless of the  $p$ -values. All data management and analyses were performed in StataSE 14.

## QUALITATIVE ANALYSIS

Free-text responses to open-ended survey questions were analyzed using qualitative description. The analysts followed a data-driven approach to developing codes to categorize the data based on its informational content.<sup>8</sup> Four analysts worked together to develop a coding framework, which was continuously modified based on new findings. To improve inter-rater reliability, the analysts regularly met to ensure that the same references were being coded similarly by all analysts. Single responses were coded to multiple themes if they contained distinct ideas. Coding was stopped once new themes were no longer emerging from the data. Frequently occurring themes were summarized. The themes summarized in the results were selected because they contained a relatively high frequency of responses. Representative quotes of the themes are presented verbatim without correction of typographical errors. QSR NVivo 9 software was used for qualitative data management and coding.

## Results

### SURVEY RESPONDENTS

A total of 18,579 healthcare worker responses which met the eligibility and completeness criteria were analysed. This is an estimated 18% of BC healthcare workers in WHITE and 10% of addresses in the email distribution lists used to send the survey invitations. Using the email distribution list denominators, the response rates among individual health authorities ranged from 6 to 36%. Managers accounted for 1,700 (9%) of total responses. Survey respondents' demographic and professional characteristics are summarized in Table 1. Respondent characteristics are compared to the characteristics of BC healthcare workers captured in WHITE in Figures 2-5.

**Table 1. Demographic and professional characteristics of respondents**

Characteristic	n	%
<b>Gender</b> (n=16,871)		
Female	14,288	84.7
<b>Age group</b> (n=17,075)		
<30 years	2,239	13.1
30 to 39 years	4,253	24.9
40 to 49 years	4,341	25.4
50 to 59 years	4,781	28.0
60+ years	1,461	8.6
<b>Facility or setting most frequently worked in</b> (n=18,579)		
Acute care facility	10,160	54.7
Office	1,717	9.2
Home and community	1,563	8.4
Public health	1,455	7.8
Residential care facility	1,441	7.8
Mental health and addiction services	1,408	7.6
Other	835	4.5
<b>Number of years worked in health care</b> (n=18,349)		
<5 years	3,365	18.3
5 to <15 years	6,413	35.0
15 to <25 years	3,928	21.4
25+ years	4,643	25.3
<b>Work in patient care area*</b> (n=18,539)		
Yes	16,406	88.5

\*As defined in the policy

Figure 2. Distribution of HCWs by health authority

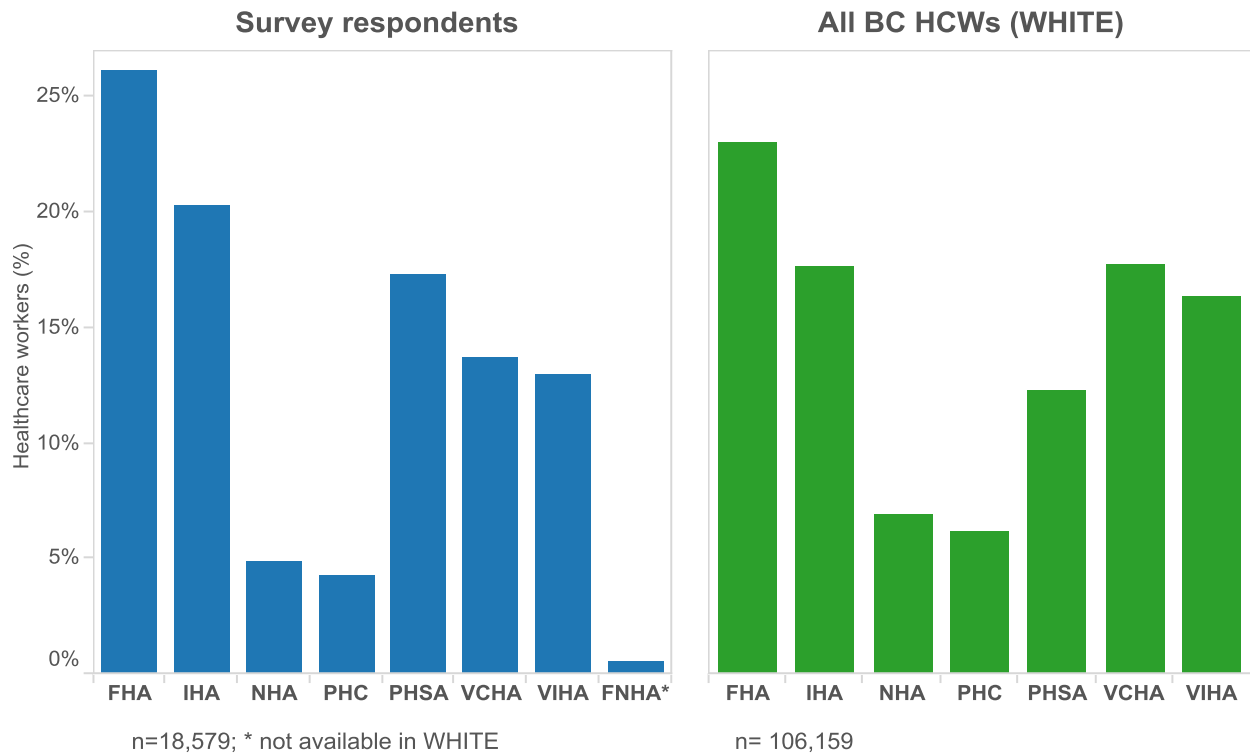


Figure 3. Distribution of HCWs by occupational group

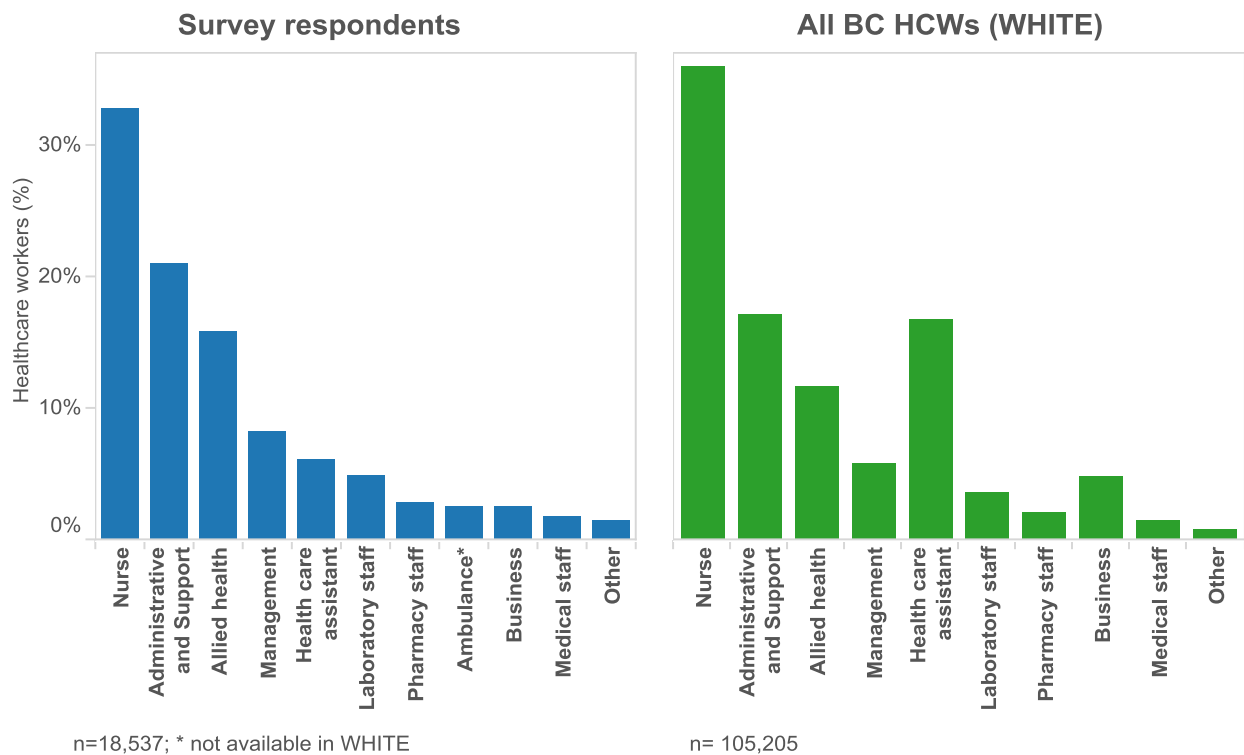


Figure 4. Distribution of HCWs by job type

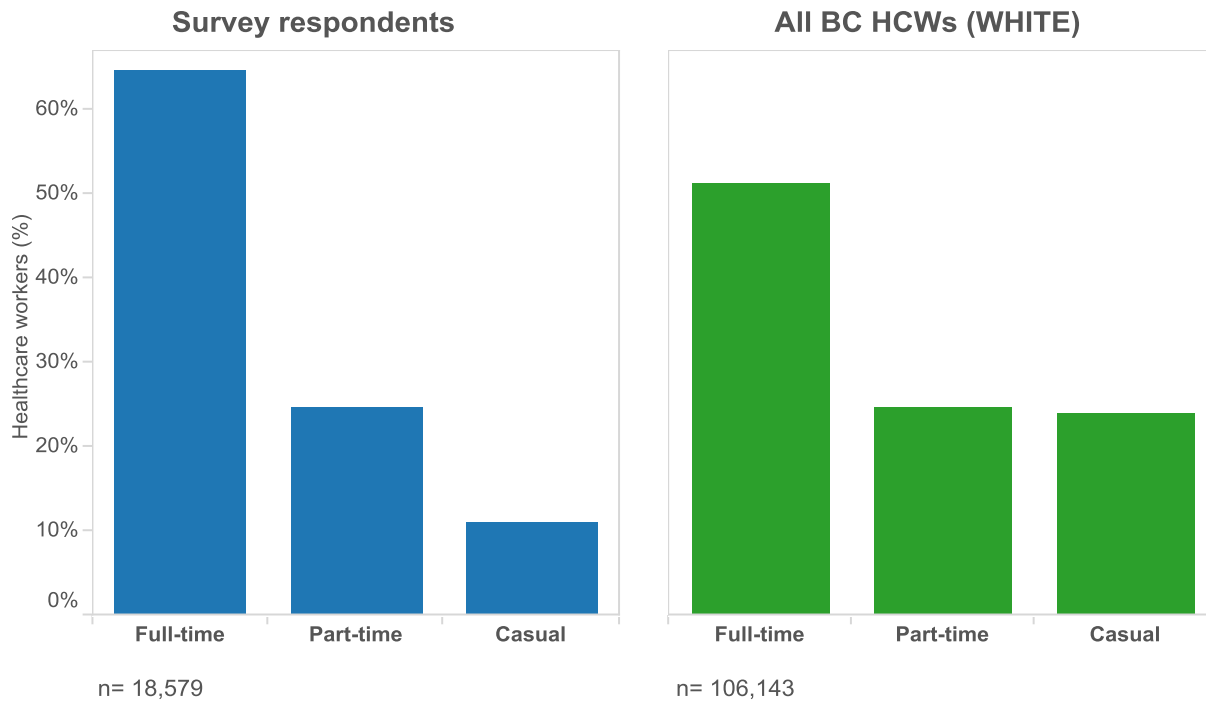
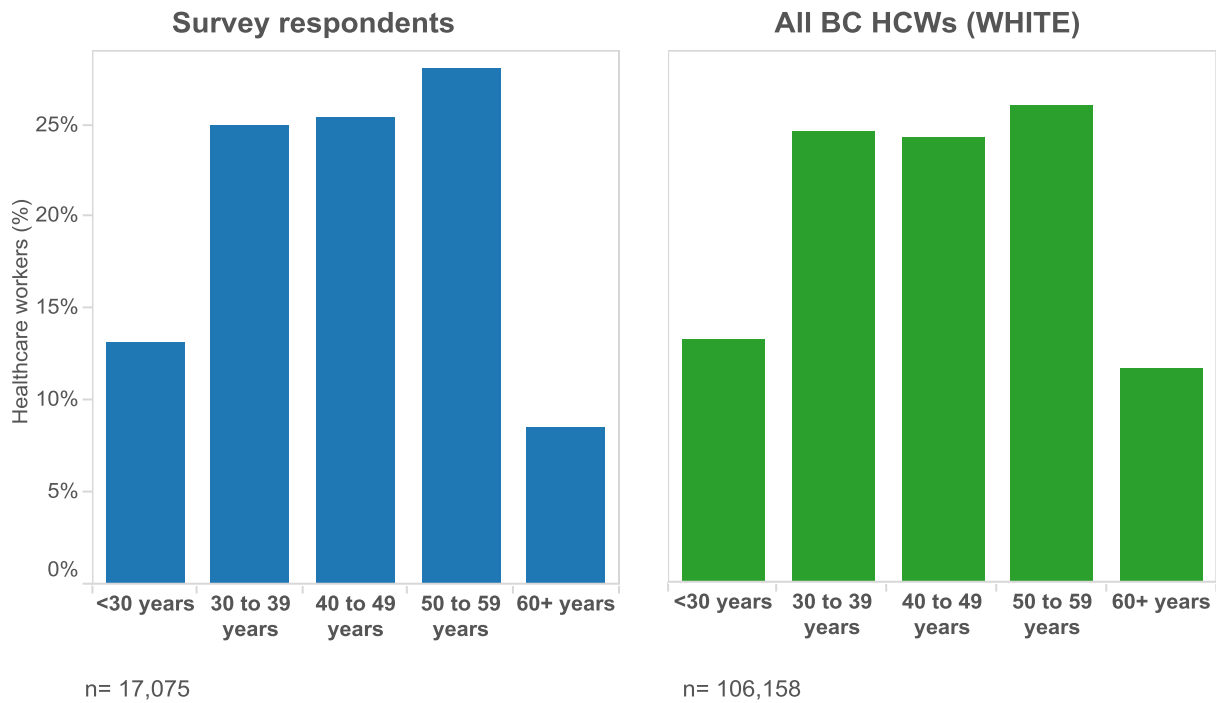


Figure 5. Age distribution of HCWs



## VACCINATION STATUS AND SELF-REPORTING

- 84% (n=15,697) of survey respondents self-reported as being vaccinated against influenza during the 2015/16 influenza season, with 16% reporting they were unvaccinated.
- 73% (n=77,531) of BC HCWs self-reported receiving the influenza vaccine in WHITE, 8% self-reported declination of the influenza vaccine, and 19% did not self-report either vaccination or declination in WHITE.
- Survey respondents were asked whether they self-reported their vaccination or declination status to their employer in WHITE. Of those with information on self-reporting to their employer available, 83% (n=14,581/17,579) reported receiving the influenza vaccine, 10% reported declination of the influenza vaccine, and 7% did not self-report either vaccination or declination to their employer (Table 2).

**Table 2. Respondents' influenza vaccination status and self-reporting of status to employer**

2015/16 vaccination status	Self-reported vaccination or declination to employer in WHITE		
	Yes	No	Unknown*
Immunized	14,581	575	541
Unimmunized	1,752	671	459

\*Respondents who did not indicate their self-reporting status or selected "Don't know"

## REPRESENTATIVENESS OF RESPONDENTS

The distribution of demographic and professional characteristics among survey respondents was largely comparable to the overall BC HCW population in the WHITE database. However, vaccinated HCWs were over-represented in the survey respondent group. The survey may also underrepresent those who did not self-report their status in WHITE. Additional unmeasured factors may have influenced whether HCWs eligible to complete the survey choose to participate. Differences between survey respondents and non-respondents reduce the generalizability of the survey responses to all healthcare workers in British Columbia.

# BC Healthcare Workers' Knowledge, Attitudes, and Practices

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Influenza Infection, Vaccine, and BC Influenza Prevention Policy

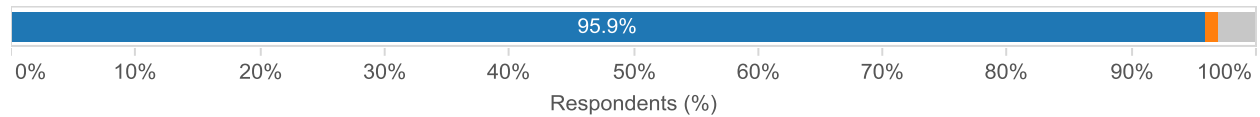


## KNOWLEDGE AND ATTITUDES – INFLUENZA AND IMMUNIZATION

**Figure 6. Influenza infection knowledge (True or False)**

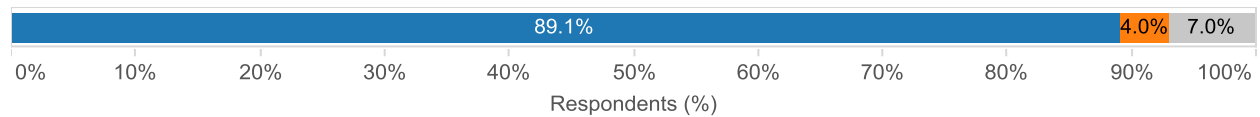
True False Don't know

### An infected person can spread the influenza virus before they start feeling sick



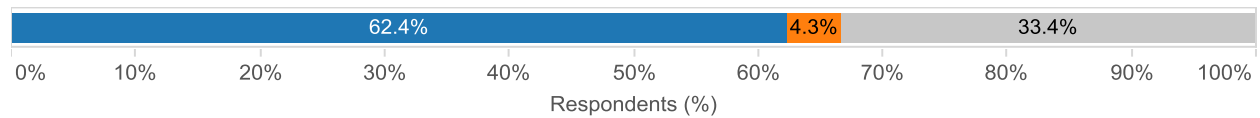
n = 17,945

### Compared to the general population, hospitalized patients are more likely to become seriously ill or die if infected with influenza



n = 17,912

### In Canada, influenza causes more deaths than any other vaccine preventable disease

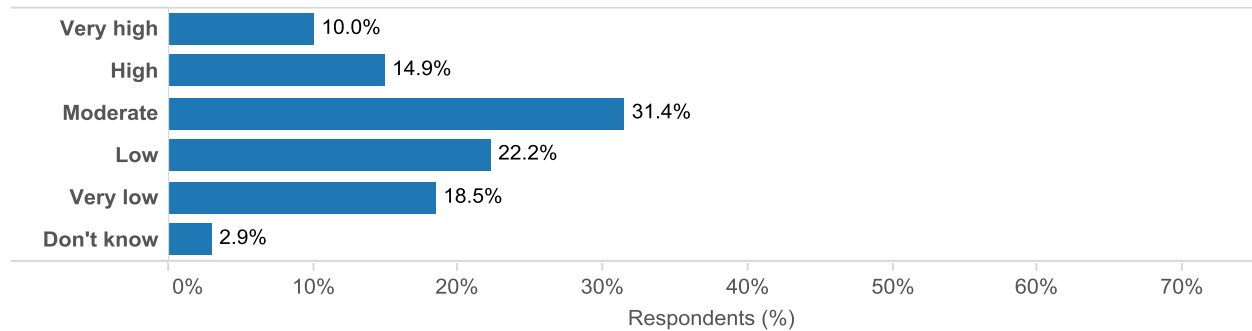


n = 17,897

Most HCW respondents knew that influenza virus can be transmitted before an individual feels sick and nearly 90% of respondents recognized that hospitalized patients are at increased risk for serious outcomes from influenza infection. One-third of respondents indicated they did not know whether influenza causes more deaths than any other vaccine preventable disease in Canada.

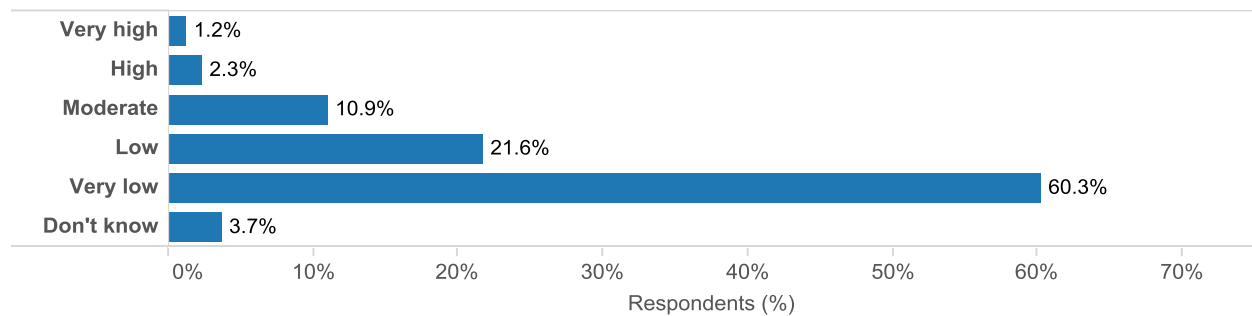
**Figure 7. In a typical year, how would you rank your likelihood of getting infected with influenza?**

**Vaccinated respondents**



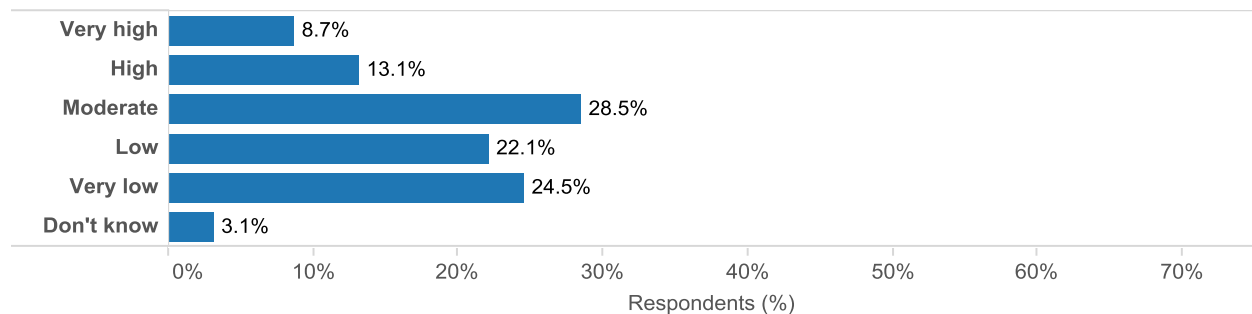
n = 15,380 vaccinated respondents

**Unvaccinated respondents**



n = 2,601 unvaccinated respondents

**All respondents**



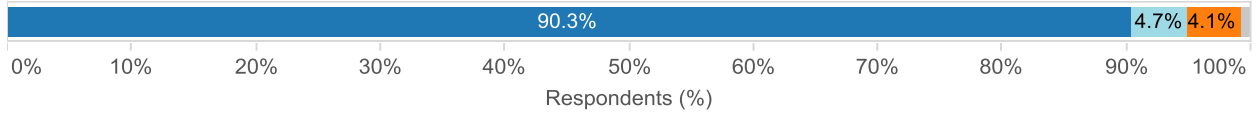
n = 17,981 respondents

Twenty-five percent of vaccinated respondents ranked their likelihood of influenza infection as very high or high, compared to 3.4% of unvaccinated respondents ( $\chi^2$  603.8,  $p < 0.001$ ).

**Figure 8. How do you perceive influenza infection and vaccination?**

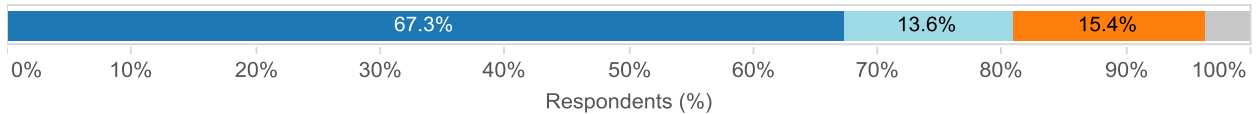
■ Agree/somewhat agree    
 ■ Neutral    
 ■ Disagree/somewhat disagree    
 ■ Don't know

**Influenza infection can cause serious illness**



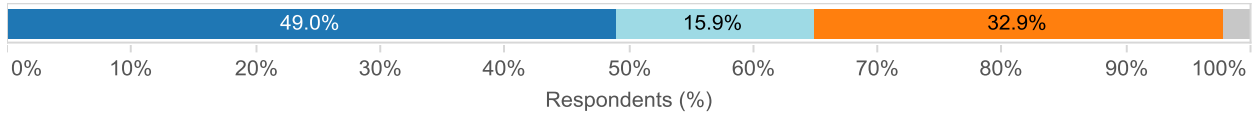
n = 17,716

**Influenza vaccine is safe**



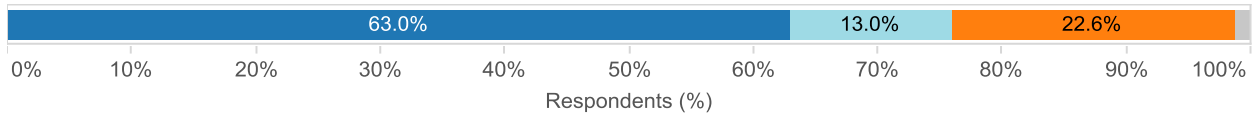
n = 17,674

**Influenza vaccine is effective**



n = 17,624

**Getting vaccinated against influenza is part of my duty of care to patients**

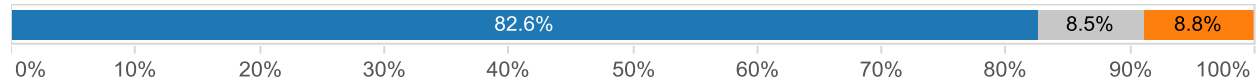


n = 17,682

**Figure 9. How do your peers, colleagues and patients perceive influenza vaccination?**

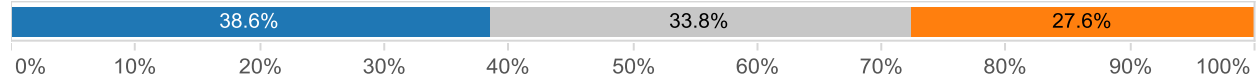
■ Yes      ■ Don't know      ■ No

**My manager, supervisor, or employer expects me to get vaccinated against influenza.**



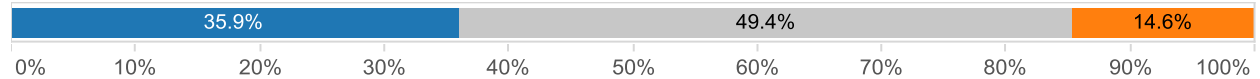
n = 17,454

**My doctor recommends I get vaccinated against influenza.**



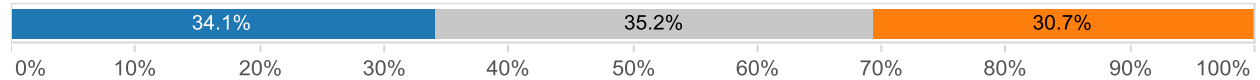
n = 16,470

**Patients expect me to get vaccinated against influenza.**



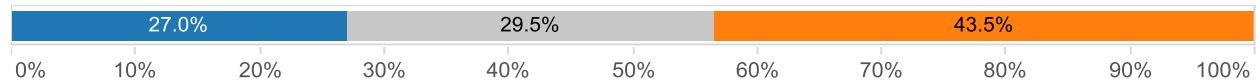
n = 16,085

**My colleagues expect me to get vaccinated against influenza.**



n = 17,278

**My family and friends think I should get vaccinated against influenza.**



n = 16,891

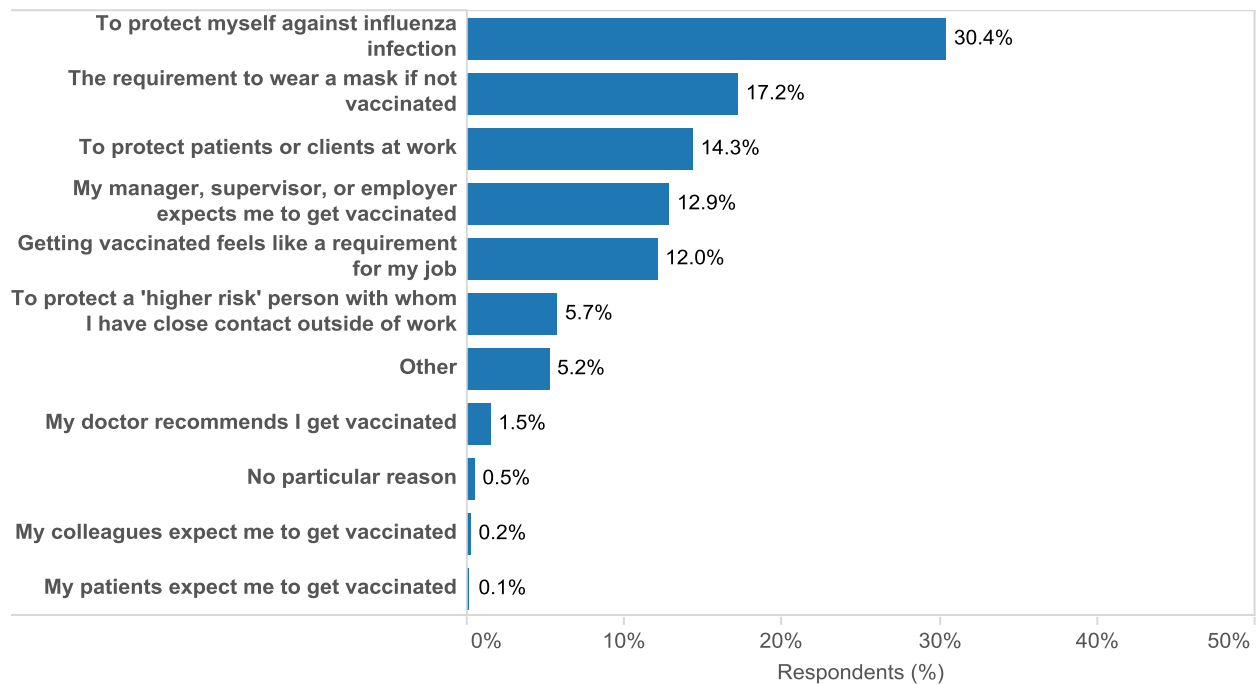
## INFLUENZA IMMUNIZATION BEHAVIOURS

Over 84% of healthcare workers completing the survey were vaccinated against influenza during the 2015/16 influenza season. The majority (70.2%) of respondents report getting the influenza vaccine every year, while 9.5% are never immunized against influenza.

**Table 3. Vaccination status**

	n	%
<b>2015/16 influenza vaccination status</b> (n=18,579)		
Vaccinated	15,697	84.5
<b>Frequency of influenza vaccination</b> (n=18,562)		
Every year	13,031	70.2
Most years	1,543	8.3
Some years	1,720	9.3
Never	1,759	9.5
Prefer not to say	509	2.7

**Figure 10. What was the main reason you got vaccinated against influenza during the 2015/16 influenza season?**



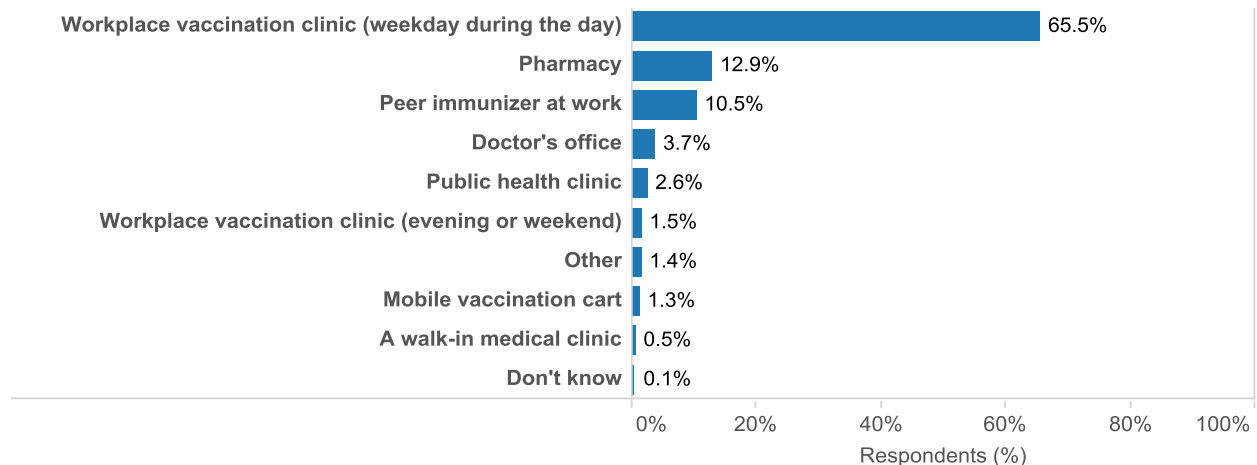
n = 15,617 vaccinated respondents

The most frequently selected reason vaccinated HCWs indicated for being immunized was to protect themselves against influenza infection. Overall, 42% of respondents stated their main reason for being vaccinated was related to the policy (“the requirement to wear a mask if not vaccinated” and “Getting vaccinated feels like a requirement for my job”) or to meet employer expectations (“My manager, supervisor, or employer expects me to get vaccinated”).

Respondents choosing “Other, specify” as the reason for receiving influenza vaccine frequently identified multiple reasons including:

- Both to protect themselves and others
- Feeling forced to be vaccinated
- Personal decision to be vaccinated
- Acting as a role model for colleagues
- Not wanting to be excluded from work during an influenza outbreak
- Personal medical and health reasons

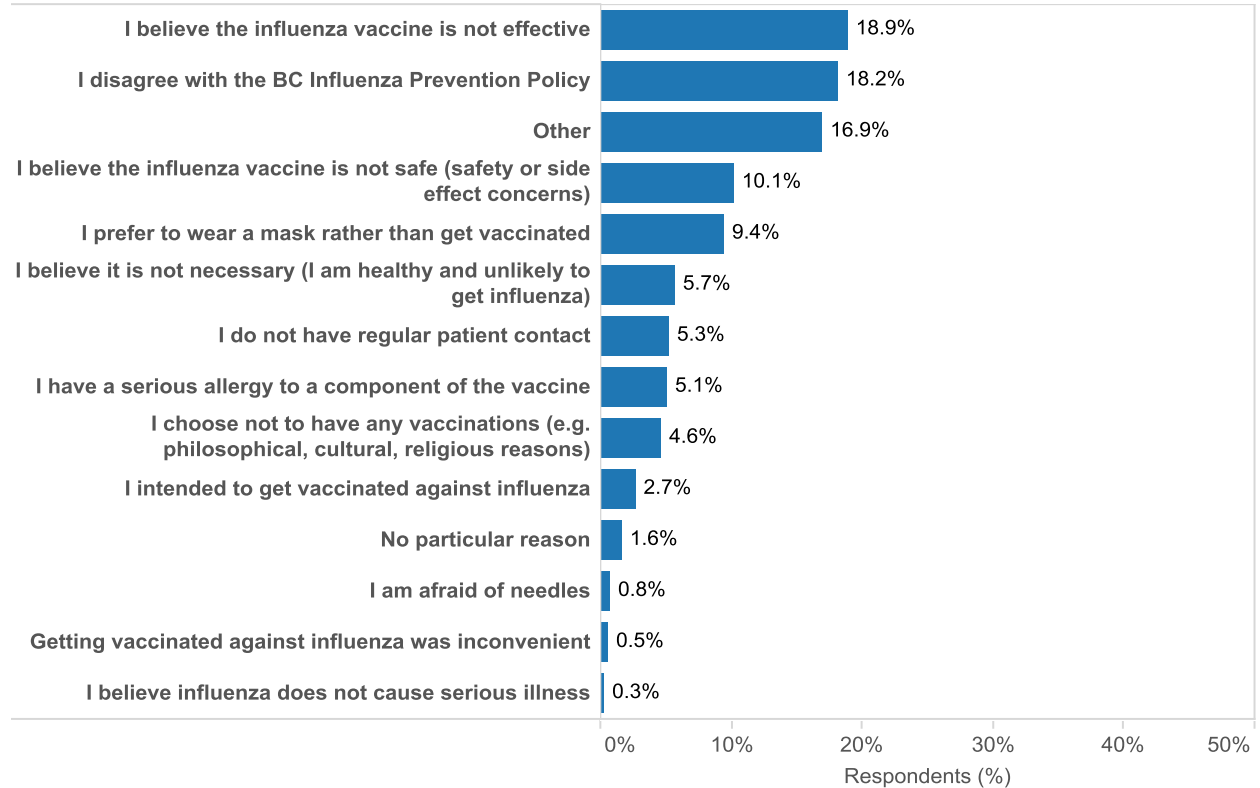
**Figure 11. Where did you receive your influenza vaccination?**



n = 15,608 vaccinated respondents

Over three-quarters of respondents vaccinated against influenza during the 2015/16 season were immunized in the workplace.

**Figure 12. What was the main reason you did not get vaccinated against influenza during the 2015/16 influenza season?**

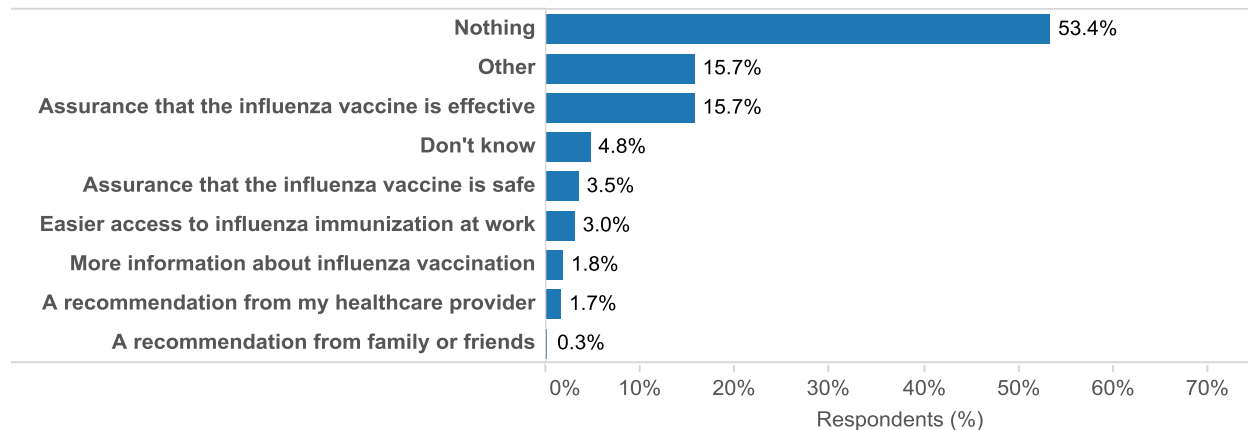


n = 2,838 unvaccinated respondents

Nearly 17% of respondents to this question selected ‘Other’ as the main reason for not being immunized. Free-text responses provided by those selecting other identified multiple reasons or provided additional context to the reason(s) cited. The effectiveness of the vaccine was the most frequently provided reason for not being immunized, followed by vaccination as a personal choice, and citing negative experiences or adverse reactions when immunized against influenza during previous years. Other reasons described included:

- Safety concerns about the vaccine
- Disagreement with the policy
- Medical reasons
- No or minimal exposure to patients during work
- On leave or did not work during the influenza season or immunization campaign

**Figure 13. What would be most likely to encourage you to get vaccinated against influenza? (Single response)**



n = 2,830 unvaccinated respondents

Just over half of HCW respondents not vaccinated against influenza during the 2015/16 season stated that nothing would encourage them to be vaccinated in the future. Other factors that would encourage future vaccine receipt provided as free text responses included more evidence on influenza vaccine safety and effectiveness and evidence to support the policy. A subset of respondents selecting 'other' described policy changes and not feeling forced to vaccinate, as factors which would encourage future vaccine receipt. Conversely, some respondents indicated that only making influenza vaccination a condition of employment would encourage vaccination. Other reasons provided included:

- If they were at greater risk of influenza infection
- If they had more contact with patients
- Change in medical status

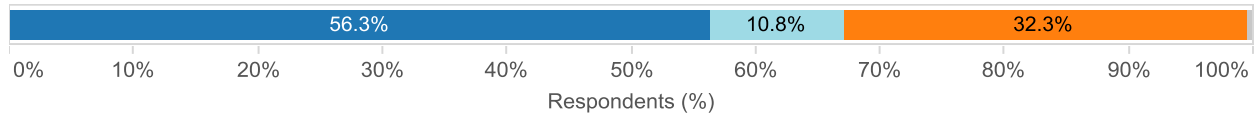


## KNOWLEDGE AND ATTITUDES – INFLUENZA PREVENTION POLICY

Figure 14. Describe your perception of the BC Influenza Prevention Policy

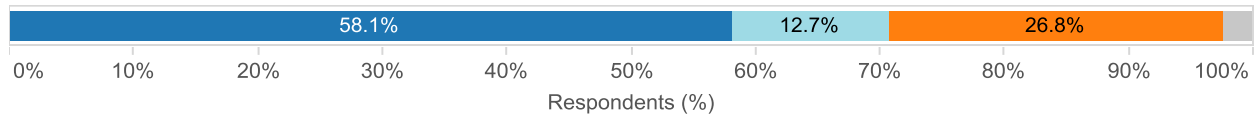
■ Agree/somewhat agree    
 ■ Neutral    
 ■ Disagree/somewhat disagree    
 ■ Don't know

### I support the policy



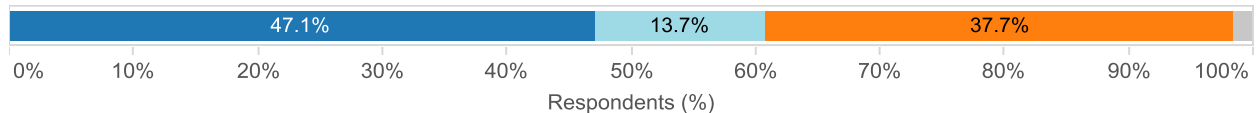
n = 17,560

### The policy protects patients from getting influenza



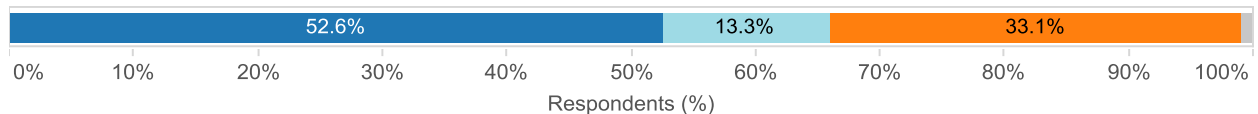
n = 17,502

### The policy protects me from getting influenza



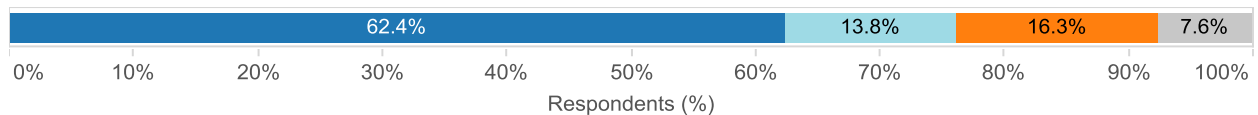
n = 17,527

### Requiring unvaccinated staff to wear masks is fair



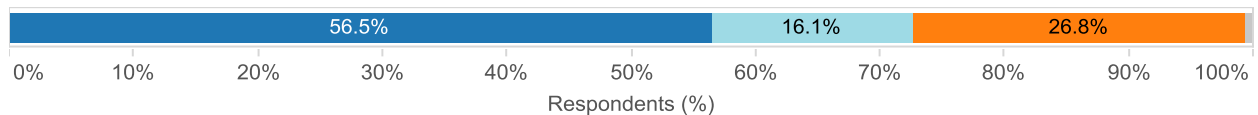
n = 17,550

### There is stigma associated with wearing a mask for unvaccinated staff



n = 17,556

### The policy puts too much pressure on me to get vaccinated



n = 17,548

## FACTORS ASSOCIATED WITH VACCINE RECEIPT

**Table 4. Factors associated with 2015/16 influenza vaccine receipt among HCW survey respondents; multivariable logistic regression**

	Adjusted OR* (95% CI)	P-value
<b>Facility type in which most frequently employed</b>		
Acute care facility	Reference	
Office	0.56 (0.42-0.75)	<b>&lt;0.001</b>
Home and community	1.04 (0.83-1.31)	<b>0.706</b>
Mental health and addiction services	1.22 (0.97-1.55)	<b>0.093</b>
Public health	1.29 (0.94-1.76)	<b>0.111</b>
Residential care facility	0.82 (0.64-1.04)	<b>0.100</b>
Other	0.69 (0.46-1.05)	<b>0.084</b>
<b>Job type</b>		
Full time	Reference	
Part-time	0.78 (0.67-0.89)	<b>&lt;0.001</b>
Casual	0.79 (0.65-0.96)	<b>0.020</b>
<b>Work in patient care area</b>		
No	Reference	
Yes	1.87 (1.48-2.36)	<b>&lt;0.001</b>
<b>Influenza vaccine was accessible at work</b>		
No/ Don't know	Reference	
Yes	1.63 (1.38-1.92)	<b>&lt;0.001</b>
<b>Influenza infection knowledge and attitudes</b>		
Compared to the general population, hospitalized patients are more likely to become seriously ill or die if infected with influenza <sup>†</sup>	0.77 (0.64-0.93)	<b>0.006</b>
Influenza causes more deaths than any other vaccine preventable disease in Canada <sup>†</sup>	1.22 (1.07-1.38)	<b>0.002</b>
I have a high or very high likelihood of getting infected with influenza in a typical year <sup>‡</sup>	4.67 (3.58-6.09)	<b>&lt;0.001</b>
<b>Influenza vaccine attitudes<sup>§</sup></b>		
The influenza vaccine is safe	2.16 (1.85-2.52)	<b>&lt;0.001</b>
The influenza vaccine is effective	1.85 (1.50-2.29)	<b>&lt;0.001</b>
Getting vaccinated against influenza is part of my duty of care to patients	6.01 (5.00-7.23)	<b>&lt;0.001</b>
My manager, supervisor, or employer expects me to get vaccinated against influenza	4.36 (3.82-4.96)	<b>&lt;0.001</b>
My doctor recommends I get vaccinated against influenza	1.56 (1.30-1.87)	<b>&lt;0.001</b>
My friends and family think I should get vaccinated against influenza	2.17 (1.60-2.93)	<b>&lt;0.001</b>
<b>Policy attitudes<sup>§</sup></b>		
I support the policy	1.23 (1.01-1.49)	<b>0.041</b>
Requiring unvaccinated staff to wear masks is fair	0.70 (0.60-0.82)	<b>&lt;0.001</b>
There is stigma associated with wearing a mask	0.82 (0.72-0.94)	<b>0.005</b>

\*Adjusted for age, gender, health authority, occupational classification, and all other factors in table 4

<sup>†</sup> False or don't know is the reference category

<sup>‡</sup> Very low, low, moderate, or don't know is the reference category

<sup>§</sup> Do not agree (neutral, don't know, disagree, or strongly disagree) is the reference category for each attitudinal factor

Healthcare workers' knowledge and attitudes towards influenza infection and vaccine were associated with vaccine receipt. Vaccine receipt was correlated with HCWs' perceptions of the severity of influenza, their own risk of contracting influenza, and their duty of care to patients. Vaccine receipt was also correlated with expectations and recommendations to be vaccinated from employers, health care providers and personal

contacts, in addition to perceptions that influenza vaccine is safe and effective. Support for the policy was positively correlated with vaccine receipt, while HCWs who agreed that requiring unvaccinated staff to mask was fair, and those who felt there was a stigma associated with wearing a mask were less likely to be vaccinated.

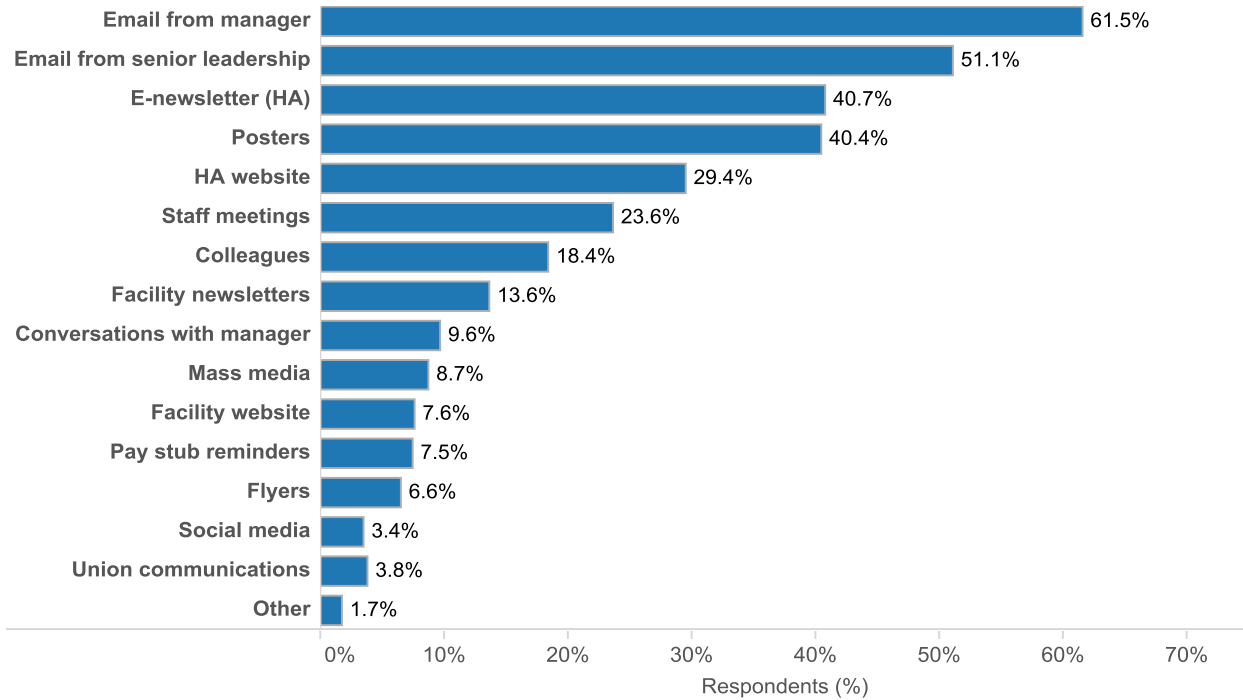
# BC Influenza Prevention Policy Planning and Implementation

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## EXPERIENCE OF THE INFLUENZA PREVENTION POLICY

### COMMUNICATION ABOUT THE POLICY

Figure 15. Indicate the most useful ways the policy was communicated to you.



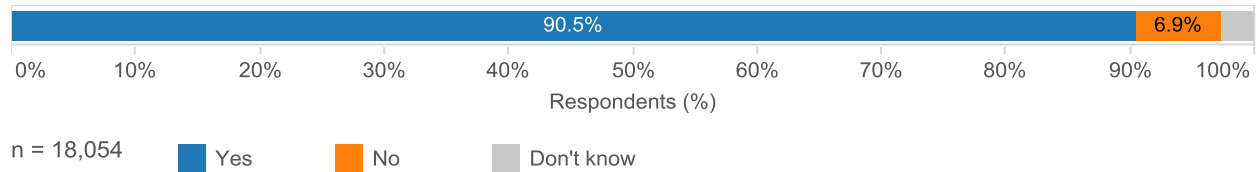
n = 18,579

*Note: Respondents could select more than one method of policy communication.*

## SELF-REPORTING POLICY COMPLIANCE

In previous policy years HCWs were asked to self-report influenza vaccine receipt. During the 2015/16 influenza season, HCWs were instructed to self-report their policy compliance status (i.e., vaccine receipt or decision to mask in patient care areas).

**Figure 16. Did you use the online self-reporting system to record your decision to be vaccinated or wear a mask?**

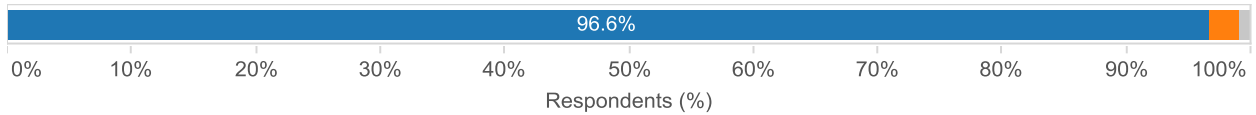


- 90.5% of respondents self-reported their policy compliance status
  - 97% of those found the reporting system easy
- 6.9% of respondents did not self-report their policy compliance status, of those
  - 36% did not know about the self-reporting system, and
  - 13.7% did not know to self-report the decision to wear a mask

**Figure 17. What was your experience with the self-reporting system?  
(Respondents who used the self-reporting system)**

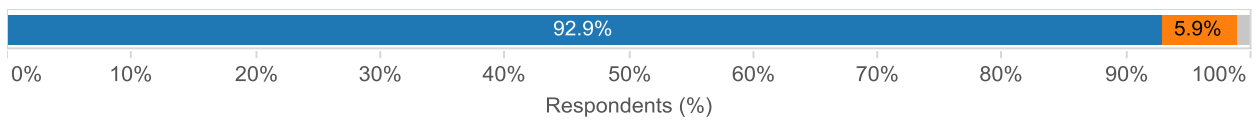
True False Don't know

**It was easy to use**



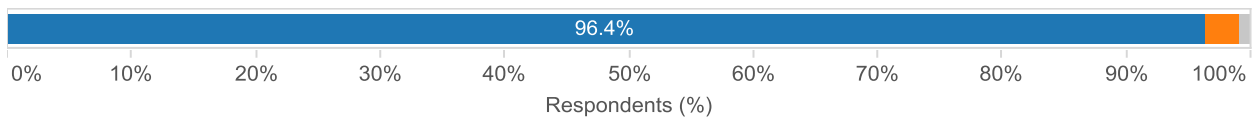
n = 16,254

**It was convenient**



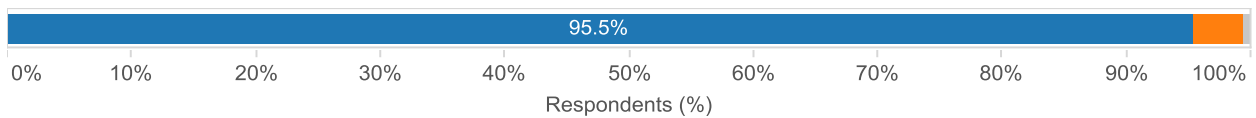
n = 15,936

**It was quick**



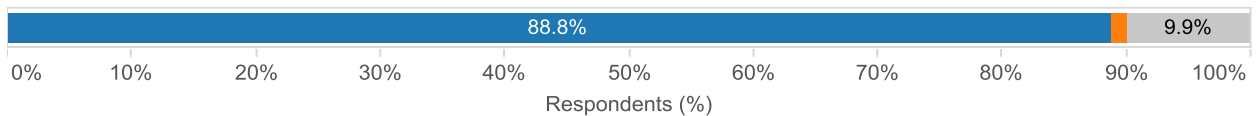
n = 15,917

**Accessing a computer was easy**



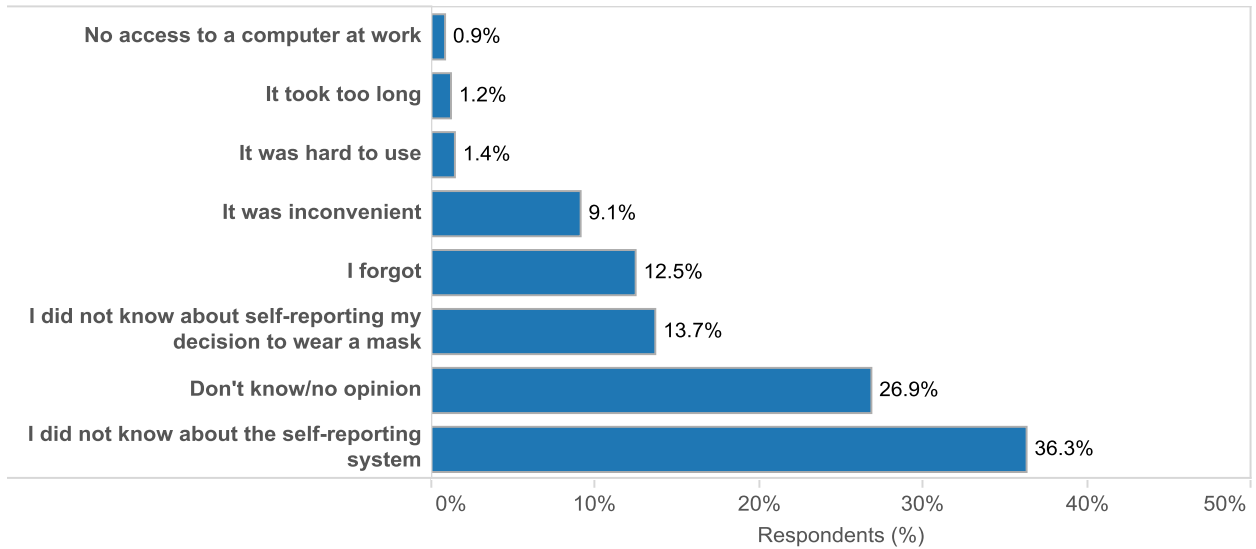
n = 15,909

**My information was recorded correctly**



n = 15,915

**Figure 18. Why didn't you use the self-reporting system?  
(Respondents who did not self-report)**

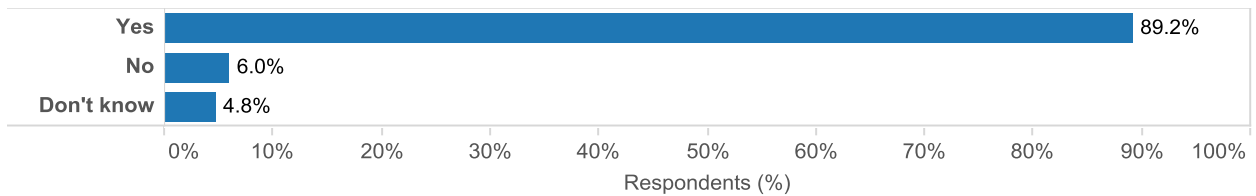


n = 1,246

*Note: Respondents could select more than one reason.*

## ACCESS TO VACCINE AT WORK

**Figure 19. Was access to influenza vaccination at your workplace convenient during the 2015/2016 influenza season?**



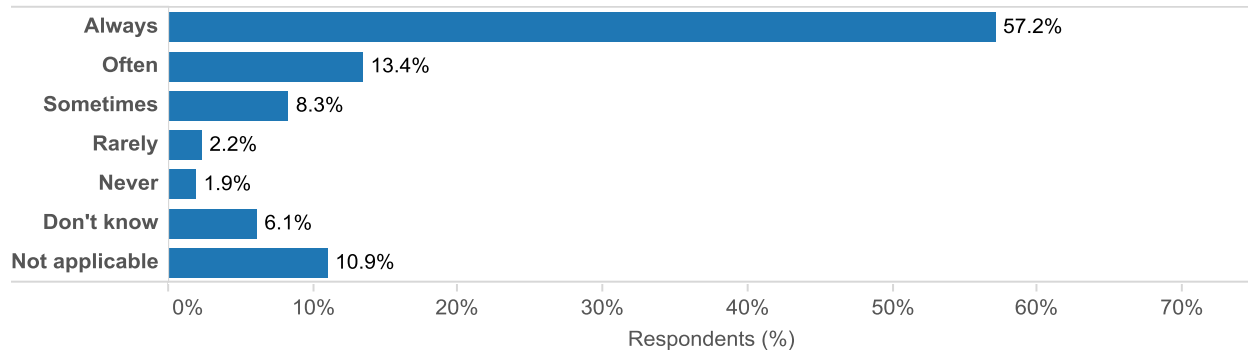
n = 18,549



## ACCESS TO MASKS AT WORK

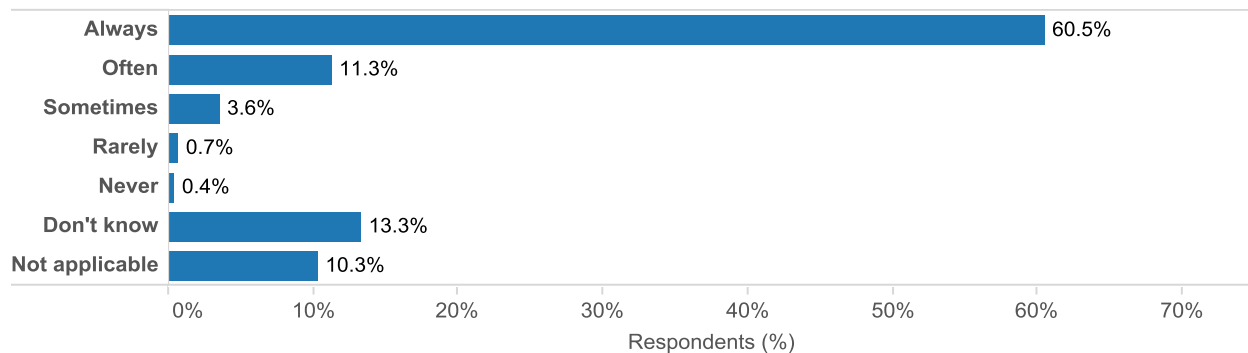
**Figure 20. Masks were available in patient care areas**

### Unvaccinated respondents



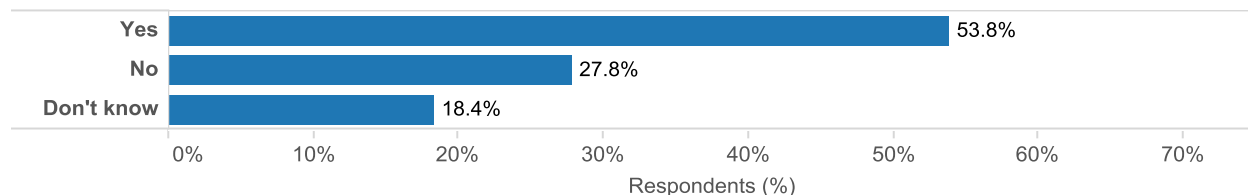
n = 2,677 unvaccinated respondents

### Vaccinated respondents



n = 15,199 vaccinated respondents

**Figure 21. Were patient care areas clearly marked in your facility?**



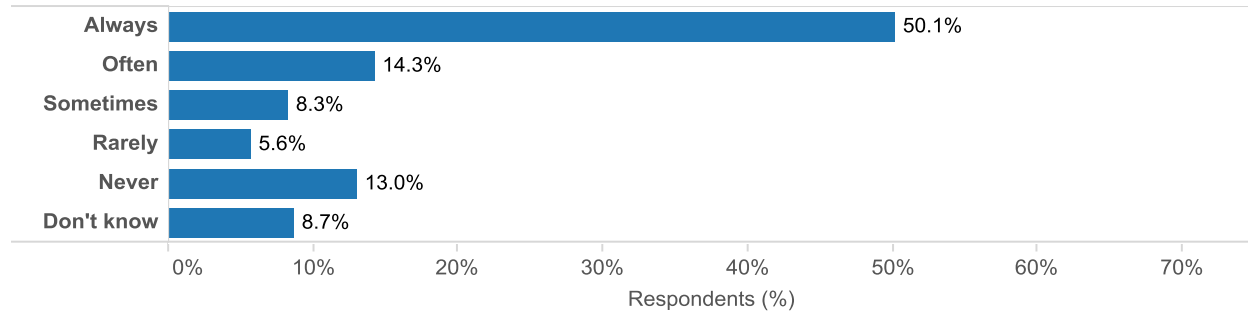
n = 2,717 unvaccinated respondents

Nearly 90% of respondents reported that influenza vaccination was accessible at work. Unvaccinated HCWs are expected to always mask while in patient care areas; however, masks were not always available in patient care areas. Only half of unvaccinated respondents reported that patient care areas were clearly marked in their workplace.

## MASK WEARING IN PATIENT CARE AREAS

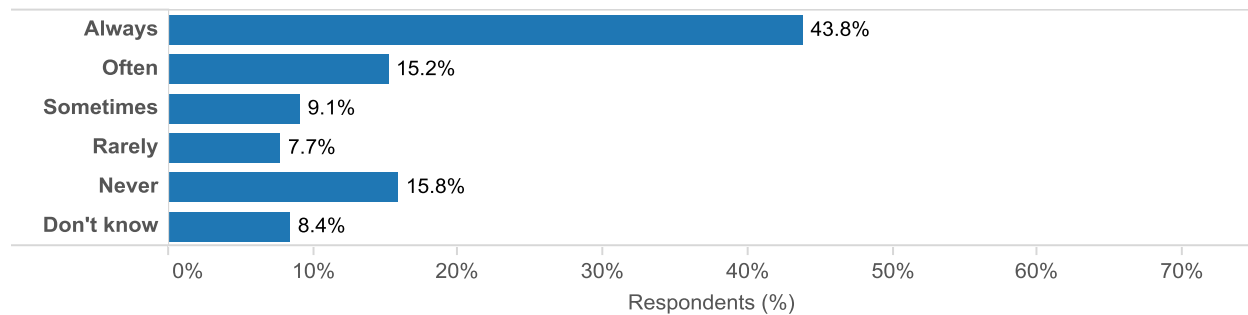
Figure 22. How often did you wear a mask while working in patient care areas?

### Early in the influenza season



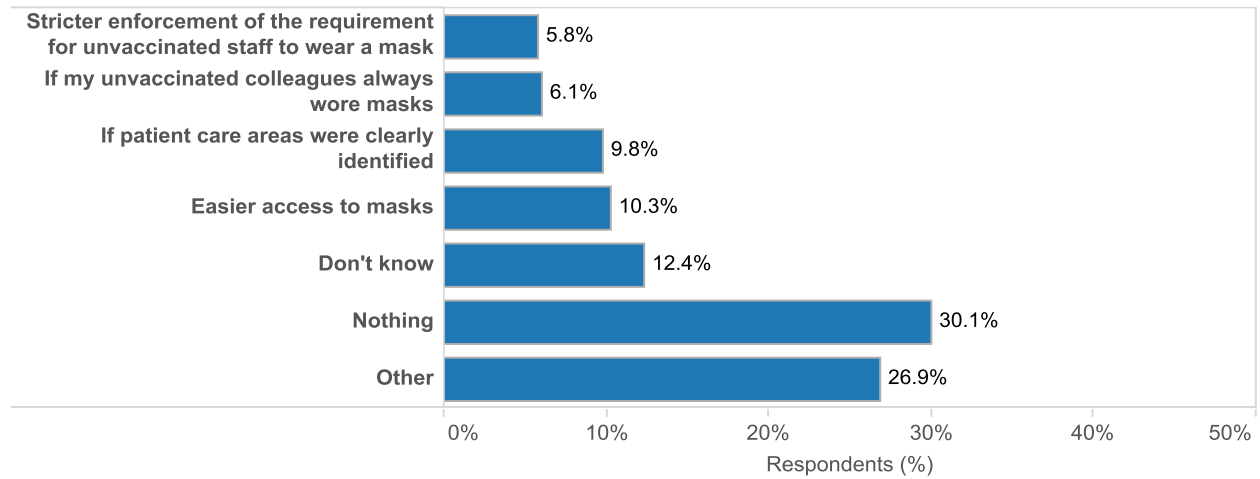
n = 2,642 unvaccinated respondents

### Late in the influenza season



n = 2,549 unvaccinated respondents

**Figure 23. What would make you more likely to always wear a mask in patient care areas during the influenza season?**



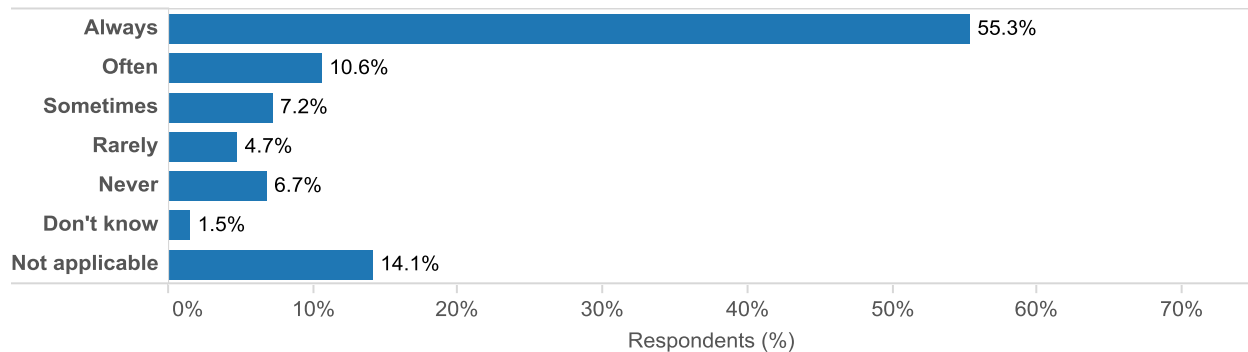
n = 2,882 unvaccinated respondents

*Note: Respondents could select more than one reason.*

The majority of responses to the 'Other, specify' option indicated the question was not applicable to them because the respondent either always masked in patient care areas or did not work in patient care areas. Other supports to encourage masking listed by respondents included:

- More evidence of the effectiveness of masking
- Requiring all staff/patients/visitors to mask or mask when sick
- Improved mask comfort
- Equal enforcement of masking component of the policy among staff and non-staff
- Changes to how patient care areas are defined
- Mask accessibility

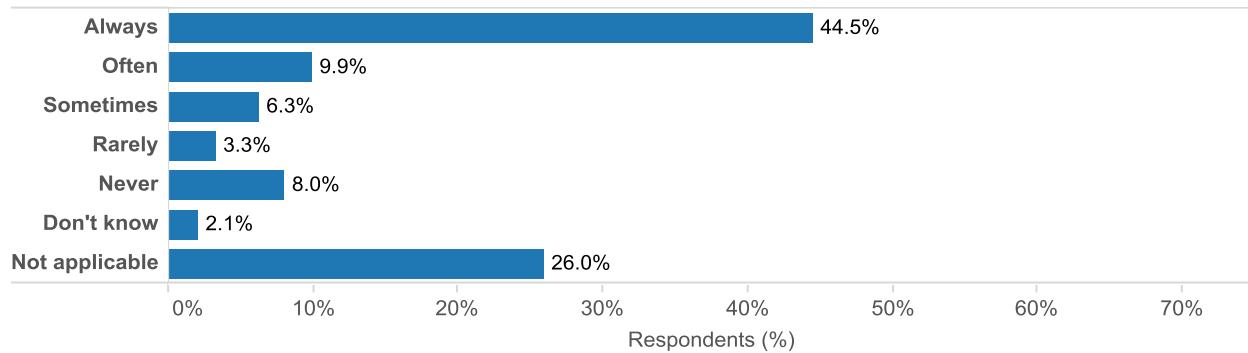
**Figure 24. I wore masks over my mouth and nose**



n = 2,661 unvaccinated respondents

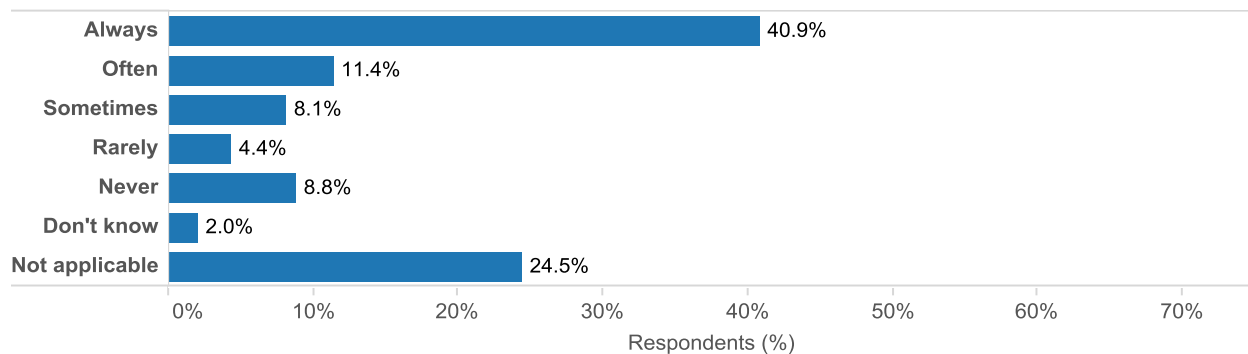
**Figure 25. Mask wearing in patient care areas during the 2015/2016 influenza season, unvaccinated respondents**

**I wore a mask when my manager was present**



n = 2,608 unvaccinated respondents

**I wore a mask when my manager was absent**

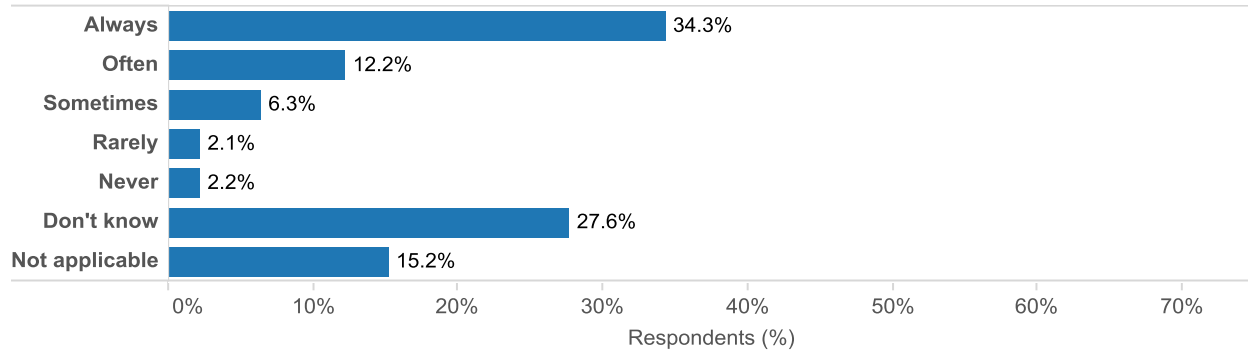


n = 2,616 unvaccinated respondents

Self-reported masking behavior of unvaccinated staff was similar whether or not their manager was present.

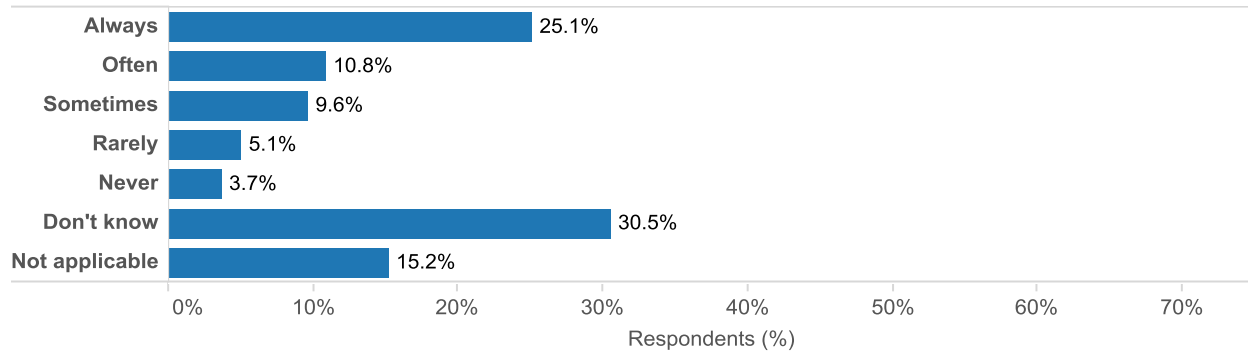
**Figure 26. Mask wearing for unvaccinated staff in patient care areas during the 2015/2016 influenza season, vaccinated respondents**

**My unvaccinated colleagues wore masks when their manager was present**



n = 15,108 vaccinated respondents

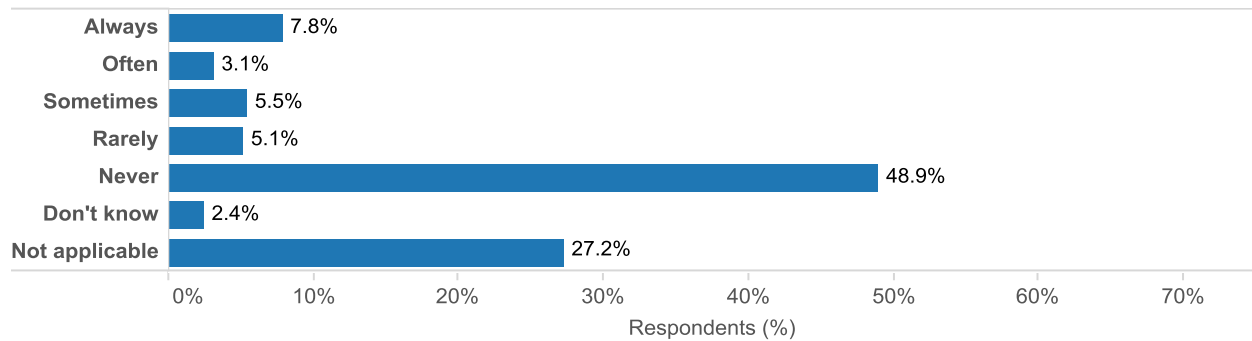
**My unvaccinated colleagues wore masks when their manager was absent**



n = 15,124 vaccinated respondents

Nearly a third of vaccinated respondents indicated they did not know whether their unvaccinated colleagues wore masks while working in patient care areas during the influenza season.

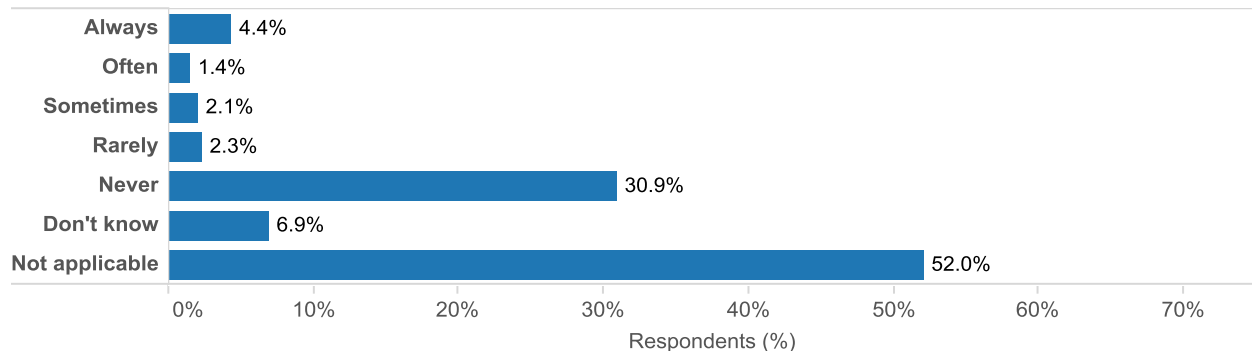
**Figure 27. I reminded unvaccinated colleagues to wear a mask**



n = 2,613 unvaccinated respondents

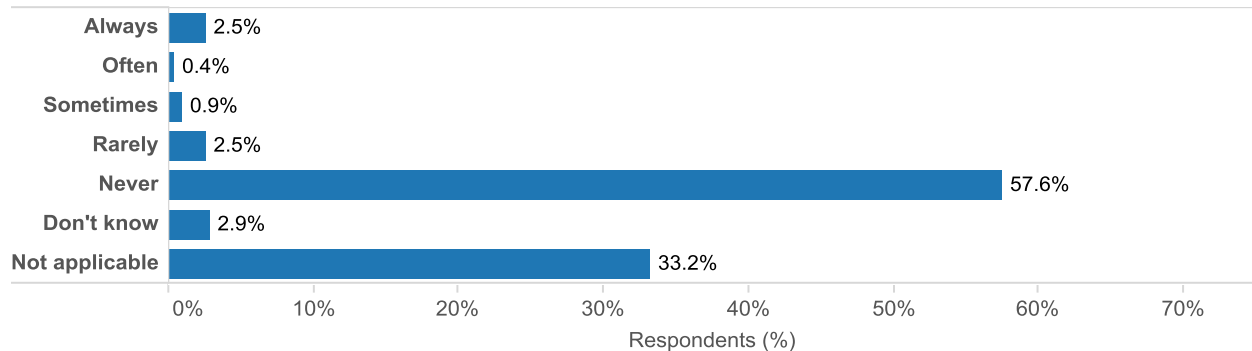
**Figure 28. Reporting policy non-compliance to managers**

**I reported to my manager when unvaccinated colleagues did not wear a mask, vaccinated respondents**



n = 15,062 vaccinated respondents

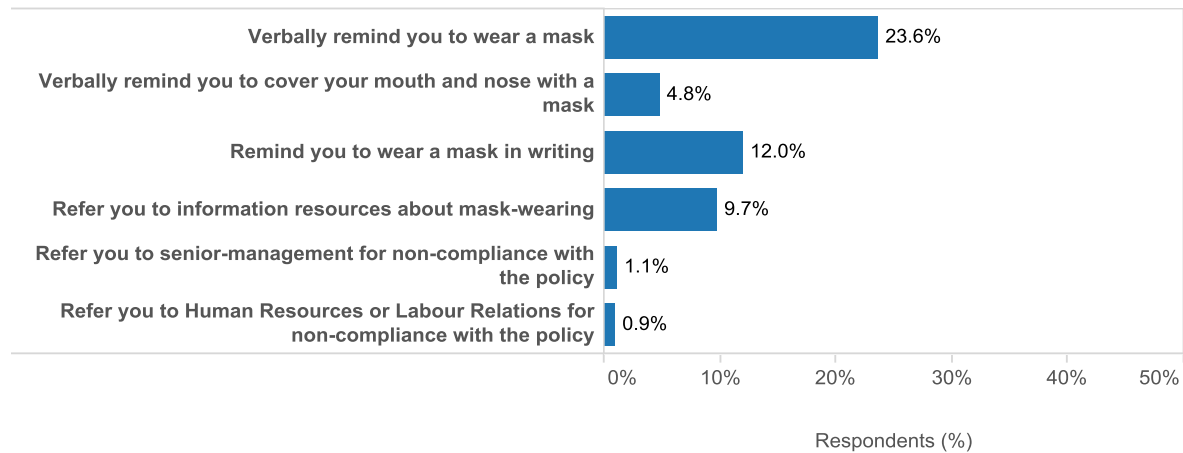
**I reported to a manager when unvaccinated colleagues did not comply with the policy, unvaccinated respondents**



n = 2,609 unvaccinated respondents

The majority of survey respondents indicated they did not report policy non-compliance among colleagues to their managers, with 82.9% of vaccinated respondents and 90.8% of unvaccinated respondents selecting not applicable or never.

**Figure 29. Did you manager ever:**



n = 2,882 unvaccinated respondents

*Note: Respondents could select more than one.*

## COMMENTS ABOUT THE SURVEY OR POLICY

All healthcare workers were invited to respond to one open-ended question at the end of the survey:

Please enter any additional comments you have about this survey or the BC Influenza Prevention Policy into the text box below (optional):

Of the 18,579 health authority employees, 4,491 (24%) provided a free-text response to this question. Of these responses, 2,259 (50%) were coded by four analysts. Coding was stopped when the analysts came to consensus that new themes were no longer emerging from the data.

Respondents who answered this question were comparable to non-responders by health authority and occupational group. HCWs who do not support the policy are over-represented in the qualitative responses. Respondents to this question were less supportive of the policy compared to survey respondents who did not answer this question: among those who responded to the final question, 36% (1,597/4,477) indicated earlier that they agreed or strongly agreed with the statement “I support the policy”; whereas 63% (8,294/13,083) of respondents who did not respond to the final question agreed or strongly agreed that they the support the policy ( $X^2$ : 1000, p-value <0.001).

**Table 5. Summary of themes from respondents' comments about the policy**

QUALITATIVE ANALYSIS THEMES	
1	Policy interpreted as 'forced' influenza vaccination
2	Impacts of masking on patients and staff
3	Limits of policy impact
4	Show me the evidence
5	Alternative prevention activities
6	Support for the policy

### **THEME 1: Policy interpreted as 'forced' influenza vaccination**

Many respondents conceptualized the policy as a **mandatory vaccination policy**, particularly because the option to mask was not seen as a suitable alternative choice for many healthcare workers.

*"I believe all health care professionals should be vaccinated against influenza every year but I do not agree that it should be mandatory, not influenza vaccine. This is because it is hit or miss...may be effective or may not. And even the years that it shows pretty good coverage, it still is only 60% effective. How can you make this mandatory?"*

*"I fell pressure to get vaccinated by my Health Authority and am very unhappy that the choice to do so is basically taken away from me as the alternate is to wear a mask, which really is NOT a suitable alternate choice. I don't want to put the influenza vaccine in my body and resent having to do so."*

Feeling pressure to be vaccinated was interpreted as an **infringement upon employees' rights** to make personal health care decisions.

*"I believe the BC influenza prevention policy is unjust and oppressive, because it forces staff to "choose" between false options, including either getting vaccinated or having to wear a mask, even when interacting with clients in non-hospital settings (which in reality is untenable), or losing their job. I believe that through this authoritarian policy the employer has secured control over what I put inside my body, which is dehumanizing."*



## THEME 2: Impacts of masking on patients and staff

Mask-wearing was reported to have **negative impacts on patient care**. Wearing a mask interfered with communicating with patients, especially when working with clients who rely on lip reading and facial expressions. Mask wearing was seen as a hindrance to building relationships and trust with clients and the public. Respondents reported that mask wearing among HCWs scared patients and led to confusion and anxiety.

*“I believe that wearing a mask causes makes patient care much worse. Can't even smile at the clients. I've drawn smiles on the masks to try to help, but it is really quite bad for the clients, especially in Psychiatry.”*

The requirement to mask was interpreted as an intimidation tactic to pressure staff into vaccination, or as a punishment for choosing not to vaccinate.

*“I am not aware of any research or evidence that wearing a mask in the absence is effective in reducing the risk of influenza, especially when required to wear it for the duration of a shift. This to me feels like a method of intimidation to staff to promote vaccination.”*

*“I feel like the mask is less about preventing others from getting my “flu symptoms” and more about labelling me a rule breaker.”*

Mask-wearing was considered stigmatizing. Unequal enforcement between professional groups further contributed to the stigma of masking.

*“Every single person I've met wearing a mask has felt the need to explain, without provocation, why they are wearing a mask i.e. allergy, severe reaction to vaccine, etc. I believe people feel stigmatized by the mask. It identifies them as being “outside the norm.” ”*

*“Nurses are then singled out and forced to wear a mask which makes them a target for public ridicule. Physicians and the public are not treated to this standard.”*

## THEME 3: Limits of policy impact

The policy was interpreted as being unfair or pointless given that **visitors present risk of disease transmission** to patients and are not monitored for compliance.

*“Forcing staff to get the vaccine seems pointless in the effort to curb the spread of illness while not screening inpatients and*

*visitors. I feel very strongly that if my health authority or the BC gov't truly want to prevent the spread of influenza then they would spend their time and energy screening ALL visitors and current patients in hospitals rather than monitoring staff for wearing masks."*

Respondents commonly suggested that if the policy intends to protect patients against flu, **all HCWs should wear a mask** given that vaccine effectiveness is variable.

*"I would like to know why, in last year's influenza season (2014/15) when it was known by January 2015 that the flu vaccine was not affective against the flu strain that was prevalent during that season, why did the health authorities not insist that all employees wear a mask in patient contact areas? Patient care is supposedly their priority yet when their vaccine strategy is known not to be working, why did they not implement across the board, the other strategy that supposedly reduces flu transmission? ie: mask wearing My guess is that they didn't want to cause distrust in the vaccine for the next year but this was done at the risk of transmitting more flu. This makes me very suspicious of the real intent of everyone being asked to get the flu vaccine and therefore I do not trust it nor the people asking me to get it."*

#### **THEME 4: Show me the evidence**

Frequently, respondents asked for evidence to support that the policy is meeting its goal of reducing transmission of influenza from healthcare workers to patients.

*"I would like to see concrete numbers that show that this policy is actually working. Patients are moving around, they are outside, they are in doctor's offices, they are out in public. They are only protected by hospital staff's immunity when they are in the hospital. SHOW ME THE NUMBERS THAT SUPPORT THIS POLICY. SHOW ME THAT LESS PEOPLE ARE DYING FROM INFLUENZA."*

The costs and benefits of the policy were questioned.

*"The people making decisions about these policies and mandates needs to be accountable for outcomes, Any one following money has to ask if this is a good use of our healthcare dollars, as both a tax payer and a healthcare worker I do not think the evidence for*

*our vaccine policy is empirically based and reliable, and this affects trust.”*

## **THEME 5: Alternative prevention activities**

Respondents suggested that this **policy distracts from other infection prevention and control measures**, such as hand washing, staying home when ill, frequent disinfecting of workstations and wearing clean uniforms and personal protective equipment.

*“My feeling is that SOME people may feel an improved sense of security due to the vaccination & may not be quite as diligent in other areas of preventing germ spreading.”*

A more supportive sick leave culture was a common solution or supplement proposed by respondents.

*“I think it's important to supplement the vaccine policy with a sick leave policy that does not force managers to intervene and pressure staff to report to work while they are ill, which can infect other staff and then increase the chance of patient exposure. During flu season, especially those of us with children under 5 should be supported by official policy from the top to stay home when we are sick and contagious.”*

## **THEME 6: Support for the policy**

Respondents indicated that they felt the policy protected them and that the policy is in keeping with protecting patients.

*“I strongly support this policy and believe it is in the best interest of our patients, even though the flu vaccine sometimes is not as effective as we would like. There is still much education to be done amongst employees. I hope that in time, employee resistance to this preventative measure will decrease, as it becomes a normalized, yearly routine.”*

There was some appreciation of the masking option as an alternative choice to being vaccinated.

*“I respect the fact that I do have a choice and I can wear a mask instead if/when I decide not to get the flu shot.”*

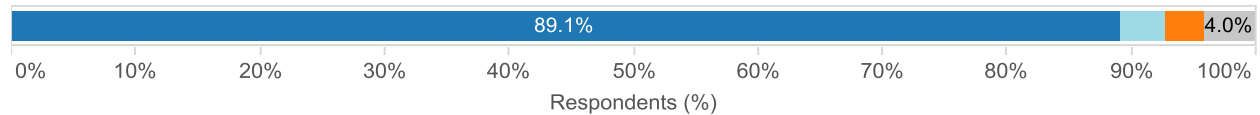
## **MANAGERS' PERSPECTIVES OF MONITORING AND ENFORCING POLICY COMPLIANCE**

Managers and supervisors who previously indicated they were responsible for monitoring vaccination status and masking wearing during the 2015/16 influenza season were invited to respond to further questions, including a series of open-ended comment boxes. The comments received are summarized below corresponding survey questions.

**Figure 30. Managers: What are your perspectives on the implementation of the policy during the 2015/2016 influenza season?**

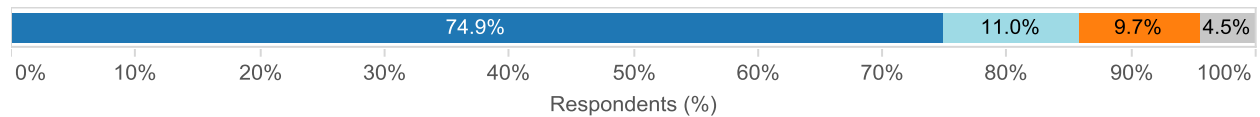
■ Agree/somewhat agree    
 ■ Neutral    
 ■ Disagree/somewhat disagree    
 ■ Don't know

**Our facility successfully implemented the policy**



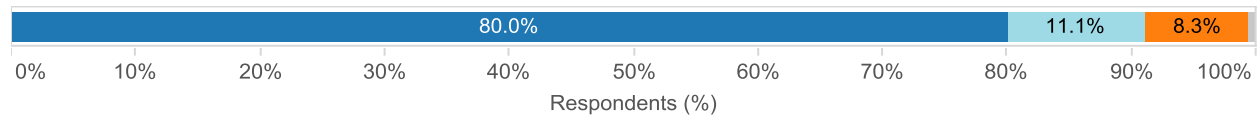
n = 1,583

**It is becoming easier to implement the policy with each season**



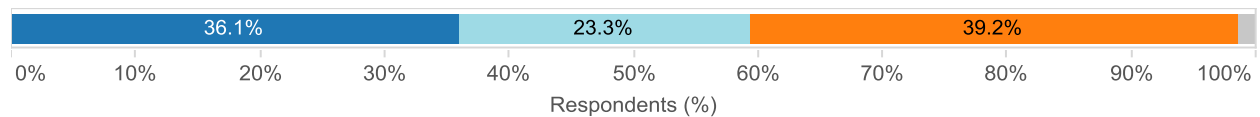
n = 1,584

**Ensuring my staff comply with the policy is an important part of my job**



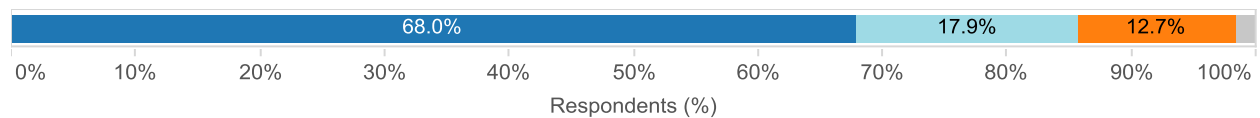
n = 1,583

**The policy adds excessive workload to my role as a manager**



n = 1,577

**I received adequate support to implement the policy among my staff**

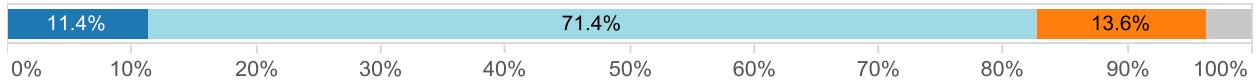


n = 1,579

**Figure 31. Managers: How did the policy affect your working relationships?**

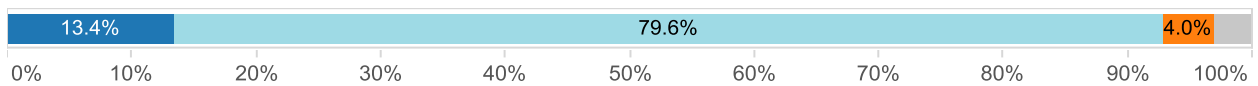
■ Positively    ■ No effect    ■ Negatively    ■ Don't know

**With the staff you manage**



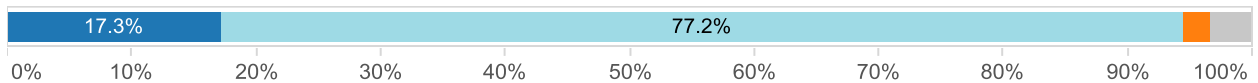
n = 1,575

**With your peers**



n = 1,576

**With your supervisor or director**

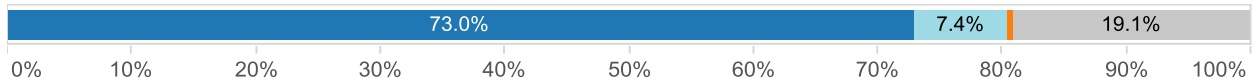


n = 1,575

**Figure 32. Managers: How supportive of the Influenza Prevention Policy were the following groups or individuals during the 2015/2016 influenza season?**

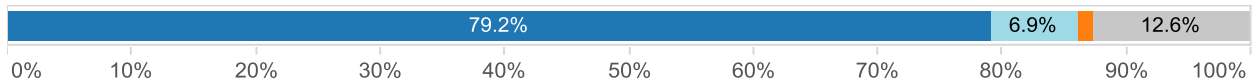
- Somewhat Supportive & Supportive
- Neutral
- Somewhat Unsupportive & Unsupportive
- Don't know/NA

**CEO of your Health Authority**



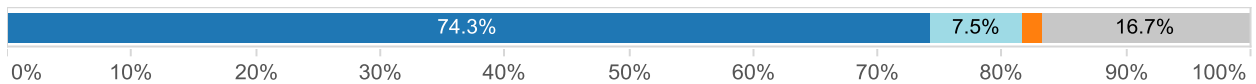
n = 1,572

**Senior management of your facility**



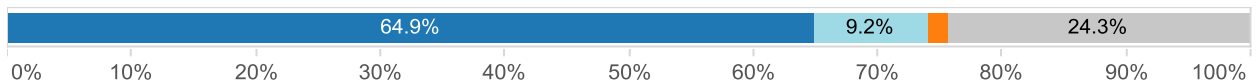
n = 1,572

**Infection Prevention and Control**



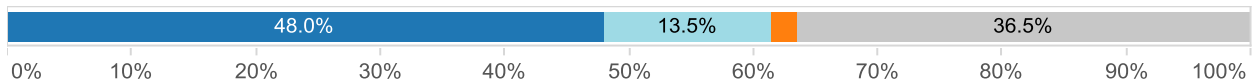
n = 1,567

**Occupational Health and Safety**



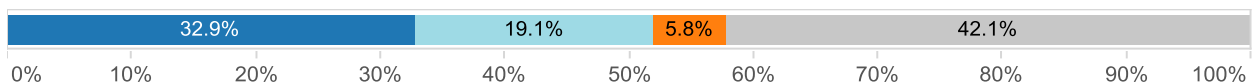
n = 1,565

**Human Resources**



n = 1,557

**Physician leaders**

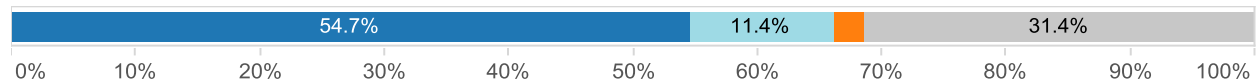


n = 1,557

**Figure 33. Managers: How supportive of the Influenza Prevention Policy were the following groups or individuals during the 2015/2016 influenza season? (continued)**

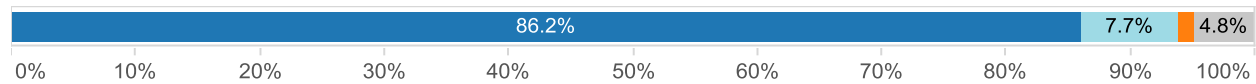
- Somewhat Supportive & Supportive
- Neutral
- Somewhat Unsupportive & Unsupportive
- Don't know/NA

**Nursing leaders**



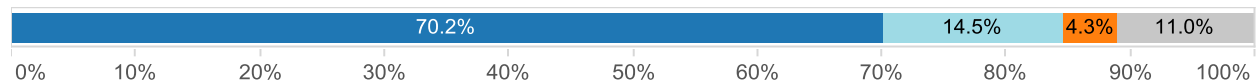
n = 1,553

**My manager or supervisor**



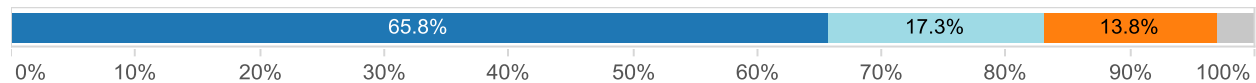
n = 1,577

**My peers (other managers)**



n = 1,567

**My staff**



n = 1,564

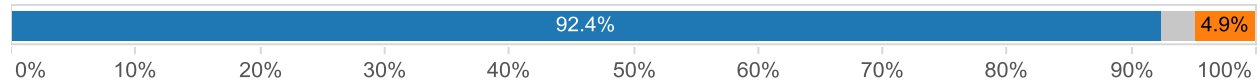
Many managers commented that their team members were unsupportive of the policy. Lack of union support for the policy was reported as a barrier to successful implementation. Some managers indicated that leadership support for the policy was not consistent, and that reservations about the policy from senior leadership had an impact on staff. Finally, managers reported that lack of support from human resources led to challenges in enacting disciplinary measures for staff who were repeatedly non-compliant.



**Figure 34. Managers: Were you provided sufficient information during the 2015/16 influenza season about the following topics?**

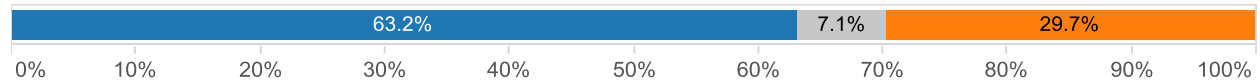
Yes Don't know No

**The goals of the Policy**



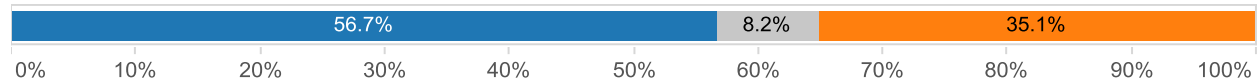
n = 1,530

**Evidence to support the immunization component of the Policy**



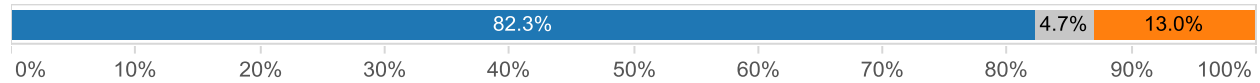
n = 1,529

**Evidence to support the masking component of the Policy**



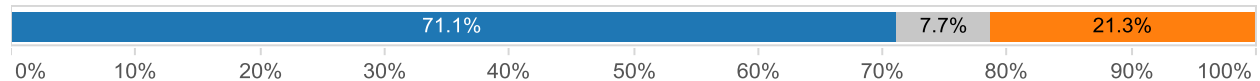
n = 1,527

**My responsibility as a manager to enforce Policy compliance**



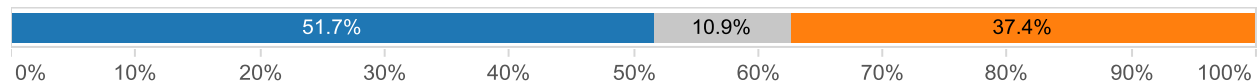
n = 1,521

**How to access reports of my staff's vaccination status or intention to wear a mask**



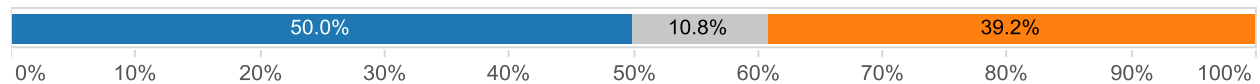
n = 1,524

**How to monitor mask-wearing for unvaccinated staff**



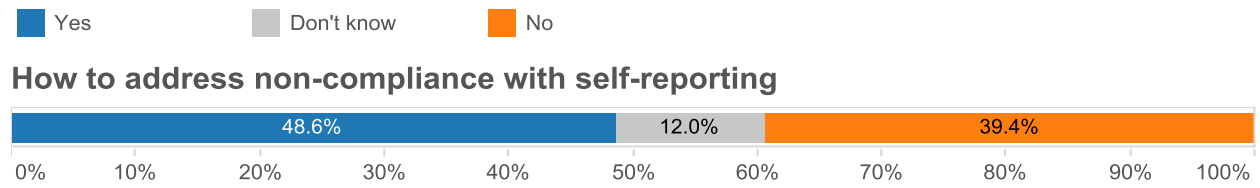
n = 1,518

**How to address non-compliance with mask wearing**

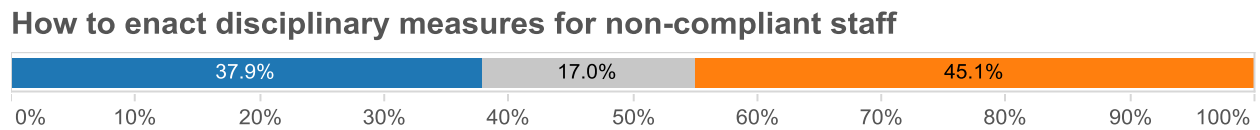


n = 1,519

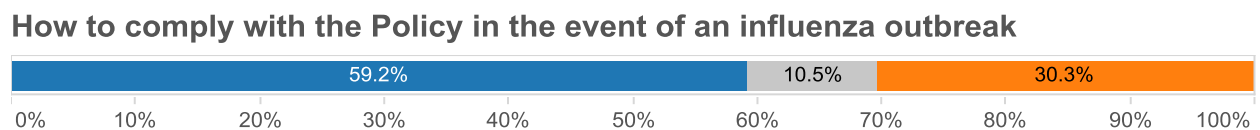
**Figure 35. Managers: Were you provided sufficient information during the 2015/16 influenza season about the following topics? (continued)**



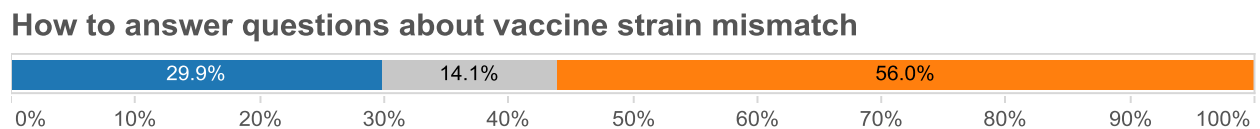
n = 1,515



n = 1,510

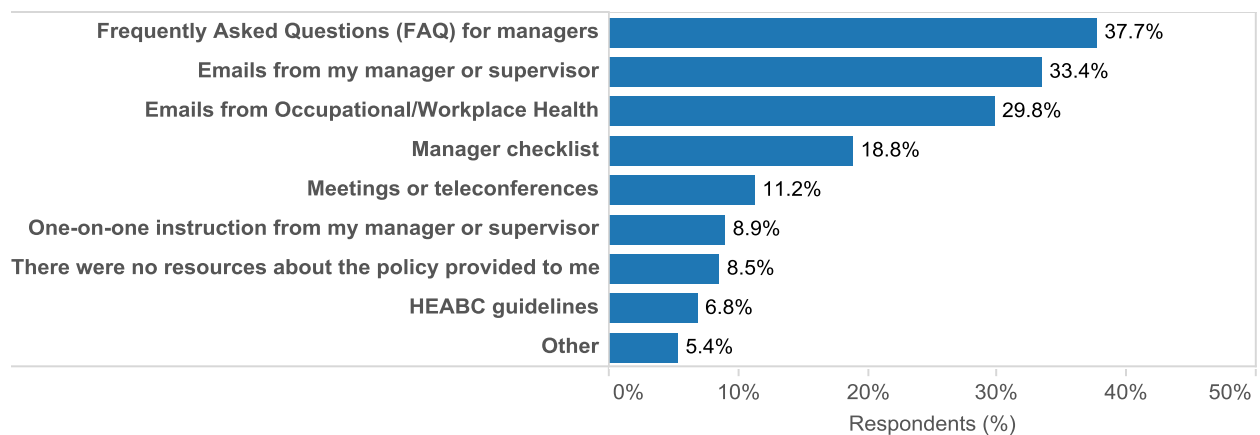


n = 1,517



n = 1,513

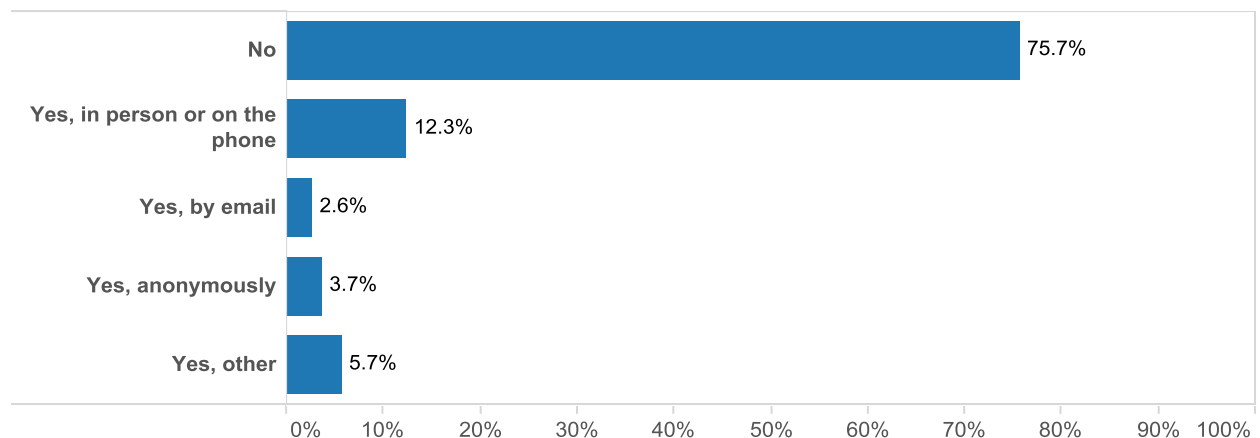
**Figure 36. Managers: Please indicate the most useful manager support tools provided to you.**



n = 1,700 manager respondents

Managers commented that the most useful manager support tools were emails that provided reports of unvaccinated staff and of staff who had not self-reported. Supervisors responsible for monitoring policy compliance indicated that they did not have access to the same reports and support tools as managers which limited their ability to monitor and enforce the policy. Links to policy resources on staff intranet were noted to be useful. Some managers commented that they did not receive communication about the extension of the policy application period with enough time to communicate it to their staff.

**Figure 37. Did your staff report to you when their unvaccinated colleagues did not wear masks in patient care areas?**



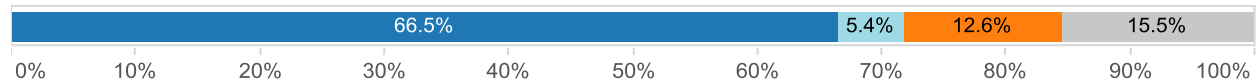
n = 1,026 managers with unvaccinated staff reporting to them

The majority of managers indicated that staff did not report unvaccinated colleagues for not wearing masks. Managers selecting the 'yes, other' option used the comment box to specify that this question was not applicable to them as staff were compliant. Managers also commented that they did not work in the same facilities as all of their staff, so some reports came to them indirectly such as from front line staff or supervisors working in other facilities.

**Figure 38. Managers' perspectives on reporting of staff influenza immunization or decision to wear a mask during the 2015/16 influenza season.**

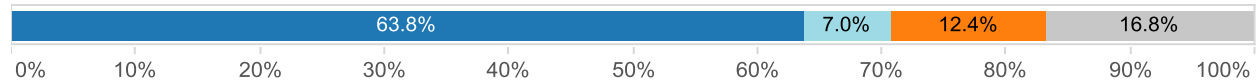
- Agree & Somewhat agree
- Neutral
- Disagree & Somewhat disagree
- Don't know

**Reports contained an accurate list of staff working under my management.**



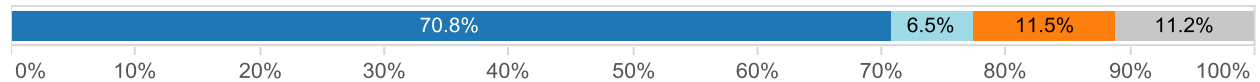
n = 1,481

**Reports of staff vaccination status or mask-wearing were up to date.**



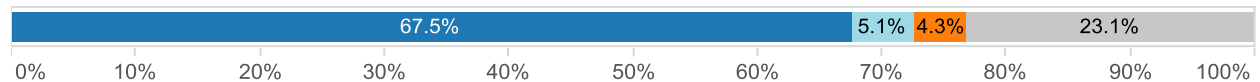
n = 1,480

**I could easily identify which of my staff were required to wear a mask.**



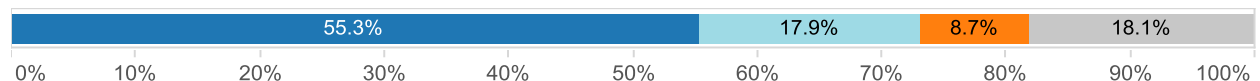
n = 1,478

**My staff honestly self-reported their immunization status.**



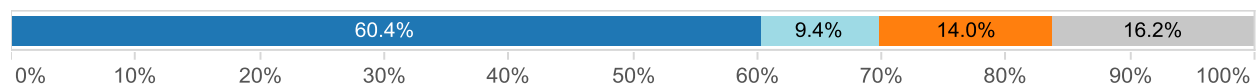
n = 1,482

**Reports of staff intending to wear a mask improved my ability to enforce mask-wearing this season.**



n = 1,475

**I could easily identify which of my staff had not self-reported their decision to be vaccinated or wear a mask.**



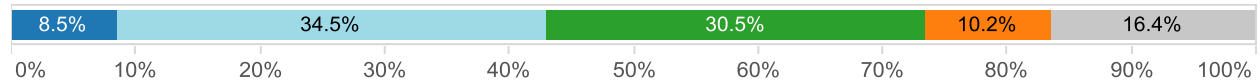
n = 1,475

In addition to those in manager roles, supervisors were frequently responsible for monitoring policy compliance; however, supervisors and others responsible for monitoring compliance did not have direct access to the reports of which staff were immunized or chose to wear a mask. The supervisors had to rely on communication from the managers identify staff requiring follow-up. Many managers commented that the reports they received were inaccurate, which limited the value of the reports for monitoring the policy. The issues around inaccurate reports included casual staff not on the lists, inclusion of staff on leave, non-inclusion of staff recently returned from leave, and the reports not updating to reflect status changes. Managers responsible for monitoring policy compliance among volunteers noted that the current system does not capture volunteers so they had to track compliance separately, adding to their workload.

**Figure 39. Managers: How often did you use the following strategies to enforce policy compliance among staff?**

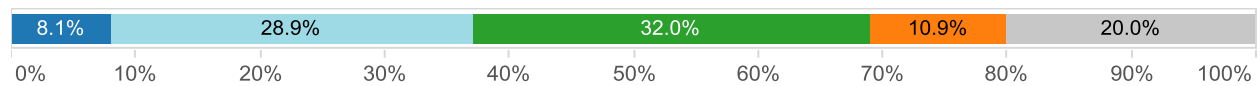
■ Daily     
 ■ Weekly     
 ■ At least once     
 ■ Never     
 ■ Don't know/NA

**Checked reports to know which of my staff had not yet reported**



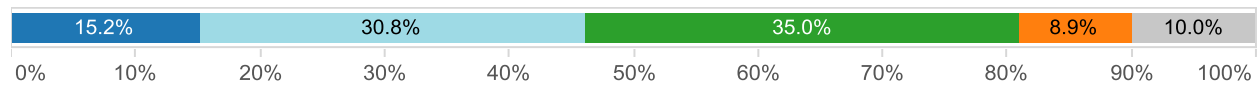
n = 1,435

**Checked reports to know which of my staff should be wearing a mask**



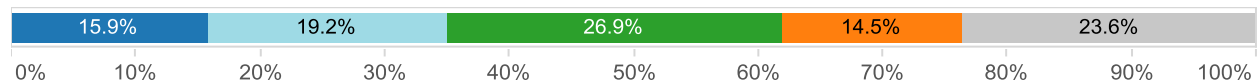
n = 1,427

**Verbally reminded staff to self-report**



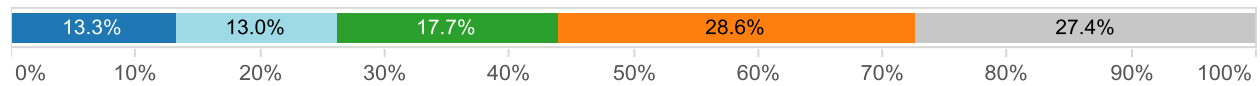
n = 1,430

**Verbally reminded staff to wear a mask**



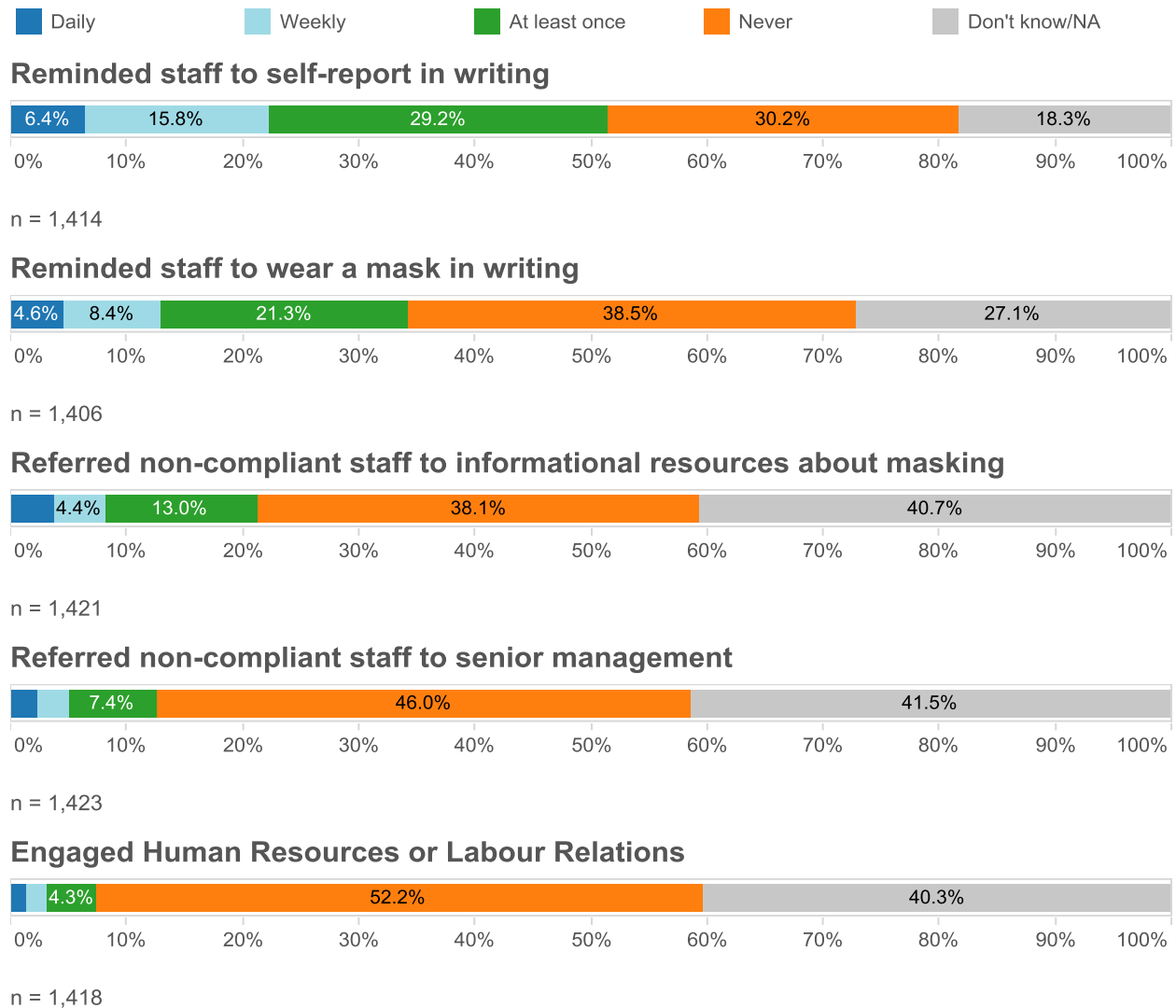
n = 1,424

**Verbally reminded staff to have their nose and mouth covered by a mask**



n = 1,412

**Figure 40. Managers: How often did you use the following strategies to enforce policy compliance among staff? (continued)**



Many managers commented that enforcing policy compliance was not necessary as their staff were compliant with the policy. Managers commented that they checked reports and reminded staff to report and mask more frequently at the beginning of the influenza season, once all staff had reported some managers stopped checking the reports. Managers working at separate sites or times found it difficult to enforce policy compliance among staff. Some managers responsible for monitoring policy compliance among volunteers commented that some volunteers chose not to attend during the influenza season.

## MANAGERS' PERSPECTIVES – FREE TEXT RESPONSES

Managers were invited to respond to two free-text questions at the end of the manager component of the survey:

Were there any specific factors in your facility that supported Policy implementation during the 2015/16 influenza season? (optional)

Were there any specific factors in your facility that made the Policy challenging to implement during the 2015/16 influenza season? (optional)

**Table 6. Summary of themes from managers' free text responses**

QUALITATIVE ANALYSIS THEMES	
1	Accessibility of vaccine at work
2	Limited capacity to monitor compliance with masking
3	Privacy and confidentiality concerns with masking
4	Information gaps for managers

### THEME 1: ACCESSIBILITY OF ONSITE IMMUNIZATION SERVICES

Accessibility of vaccine at work was commonly reported as a contributor to successful policy implementation. Influenza vaccine was most easily accessible at workplaces when clinics or immunization service was offered at a variety of times and locations. Peer nurse immunizers and roving clinics increased opportunities to be immunized by offering convenience and providing vaccination services outside of scheduled clinics.

*“Access to the vaccine was exceptional. Flu champions came to my department when I phoned and said that a casual was working that day who didn't work on flu clinic days.”*

*“Having clinics offered on site at various times which made it convenient for staff to get immunized”*

*“Peer immunization increased the number of staff who obtained the immunization.”*

Insufficient access to onsite immunization services was also cited a challenge to successful implementation, though less commonly. It was challenging to coordinate immunization opportunities for distributed staff, and to ensure efficiency when there were large volumes of staff attending clinics.



*“200 Community Health Workers who work in the community rather than in a facility made it more challenging to arrange easily accessible flu clinics. Opted to arrange for a private pharmacist to provide vaccinations on site - avoiding parking challenges at local hospital site. Also, sending 200 staff to acute site for vaccinations was problematic (long line ups causing workers to be late for work).”*

## **THEME 2: LIMITED CAPACITY TO MONITOR COMPLIANCE WITH MASKING**

Difficulty was raised regarding monitoring and enforcing compliance for staff who worked in different facilities than their managers, or in the community. Similarly, outside of managers' work hours, managers were unaware of compliance.

*“Staff not wearing their masks properly or not wearing them at all. They removed the mask when managers out of sight or off shift. Was reported to management but the same staff continued to not wear their masks when management not around.”*

*“After hours compliance was difficult and managing an inpatient unit with multiple disciplines I do not manage was difficult for continuity in practice and management of mask wearing.”*

*“Not working directly with my staff all the time made it challenging because I wasn't always around to see if masks were being worn. Those who didn't receive an immunization are only in patient care areas occasionally and so they weren't in a habit of wearing a mask. This made it difficult as well because I would have to 'catch' them in a patient care area and then remind them, but then the next time they'd forget again. Our office also doesn't really have a lot of clients coming in, so those who declined immunization didn't think it was necessary that they wear masks all the time. A client or member of the public could come in at any time, but their perspective was 'I'll just put a mask on when someone comes in' but that rarely happened.”*

## **THEME 3: PRIVACY AND CONFIDENTIALITY CONCERNS WITH MASKING**

Privacy and confidentiality concerns arose around mask-wearing because staff who wore masks were repeatedly questioned, and some staff felt pressured to disclose their vaccination status or that this was interpreted by staff as discrimination.

*“Some of the staff that did not get immunized were repeatedly asked by staff not in our department (in front of patients) why they were wearing a mask. I needed to have a conversation with [staff] about confidentiality issues in relation to staff & that the conversations especially in front of Patients was inappropriate.”*

#### **THEME 4: INFORMATION GAPS FOR MANAGERS**

Responses indicated that questions brought up by staff regarding concerns with the policy were difficult to answer and that there was minimal guidance on how to answer these questions or engage in dialogue with staff.

*“I am not always with [my staff]. How do I know if they are wearing a mask? How do we know which visitors have had flu shots? Is there any evidence that this policy has reduced flu rates among staff or patients? These are questions people bring to me and I have no answers for.”*

*“Inability to answer valid concerns with the policy. Such as why do those who are immunized not have to wear masks when the strains in the immunization are not found to be effective.”*

*“All queries regarding the policy were sent to a central contact, who was a solid apologist for the policy. Additional information provided to our contact only resulted in a reiteration of the policy and an ultimate referral to labour relations. There was no helpful or meaningful dialogue regarding concerns about the policy available.”*

## Discussion

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### LIMITATIONS

Despite reminders and a prize draw to incentivize participation, the response rate to the survey was low; therefore, the results presented may not be representative of all HCWs in BC. Notably, unvaccinated HCWs and those who did not self-report either vaccination or declination status in WHITE were underrepresented in the survey. The generalizability of the qualitative findings is further limited because the subset of survey respondents who answered the final free-text question were not representative of all survey respondents.

### OPPORTUNITIES

As the first survey of British Columbia healthcare care workers covered by the BC Influenza Prevention Policy, the results provide insight into HCW and manager perspectives of the policy. Despite the low response rate, survey respondents were largely similar to BC healthcare workers in terms of health authority employer, occupational group, job type, and age distributions.

The survey findings from HCWs and managers identified opportunities for future policy implementation and communication materials.

- **Strategies to address the stigma associated with masking** should be considered. Stigma against masking was reported by 62% of respondents and was a recurring theme in the qualitative findings. The requirement to mask is viewed by some HCWs as a punishment for not being vaccinated more so than as an infection prevention measure.
- **Continue to offer influenza vaccination in the workplace**, with consideration of staff working off-site or outside of office hours. Nearly 90% of respondents reported access to influenza vaccine was convenient at work. Qualitative findings noted that challenges remain for staff working offsite or in distributed workplaces.
- Consider **strategies to ensure masks are always available** in patient care areas and to clearly mark patient care areas.
- Develop policy resources for all HCWs and manager **support tools to address vaccine strain mismatch** and seasons with low vaccine effectiveness. Fifty-six percent of managers did not have sufficient information to answer questions about the vaccine strain mismatch.

- Facilitate **dissemination of manager support tools to those who need them.** Respondents indicated that non-manager HCWs support policy enforcement on the front-line/ day-to-day, but did not always have access to the support tools.
- Resources that **communicate the evidence for influenza vaccine and policy effectiveness** should be considered. A desire for evidence supporting the policy was a frequent theme in the qualitative findings. Among unvaccinated respondents, 18.9% report the main reason for not being vaccinated is due to the vaccine effectiveness.
- **Determine who is responsible for enforcing compliance among visitors** and how it can be improved. A theme of the qualitative findings was the lack of enforcement of visitor compliance undermines HCWs' confidence in the policy's ability to protect patients from influenza in health care settings.
- Consider **strategies to address the unintended negative impacts of masking on patient care** for certain patient/client/provider populations (e.g. dementia, mental health, counselling, speech language, pediatrics).
- **Consider augmenting the emphasis on staying home when ill** – vaccinated or not. Emphasis on enforcing the policy was noted to distract from other important infection prevention practices such as hand hygiene and staying home when ill.

## ABBREVIATIONS

HCW = health care worker

VOM = vaccinate or mask

FHA = Fraser Health Authority

IHA = Interior Health Authority

NHA = Northern Health Authority

PHC = Providence Health Care

PHSA = Provincial Services Health Authority

VCHA = Vancouver Coastal Health Authority

VIHA = Vancouver Island Health Authority

FNHA = First Nations Health Authority

## ACKNOWLEDGEMENTS

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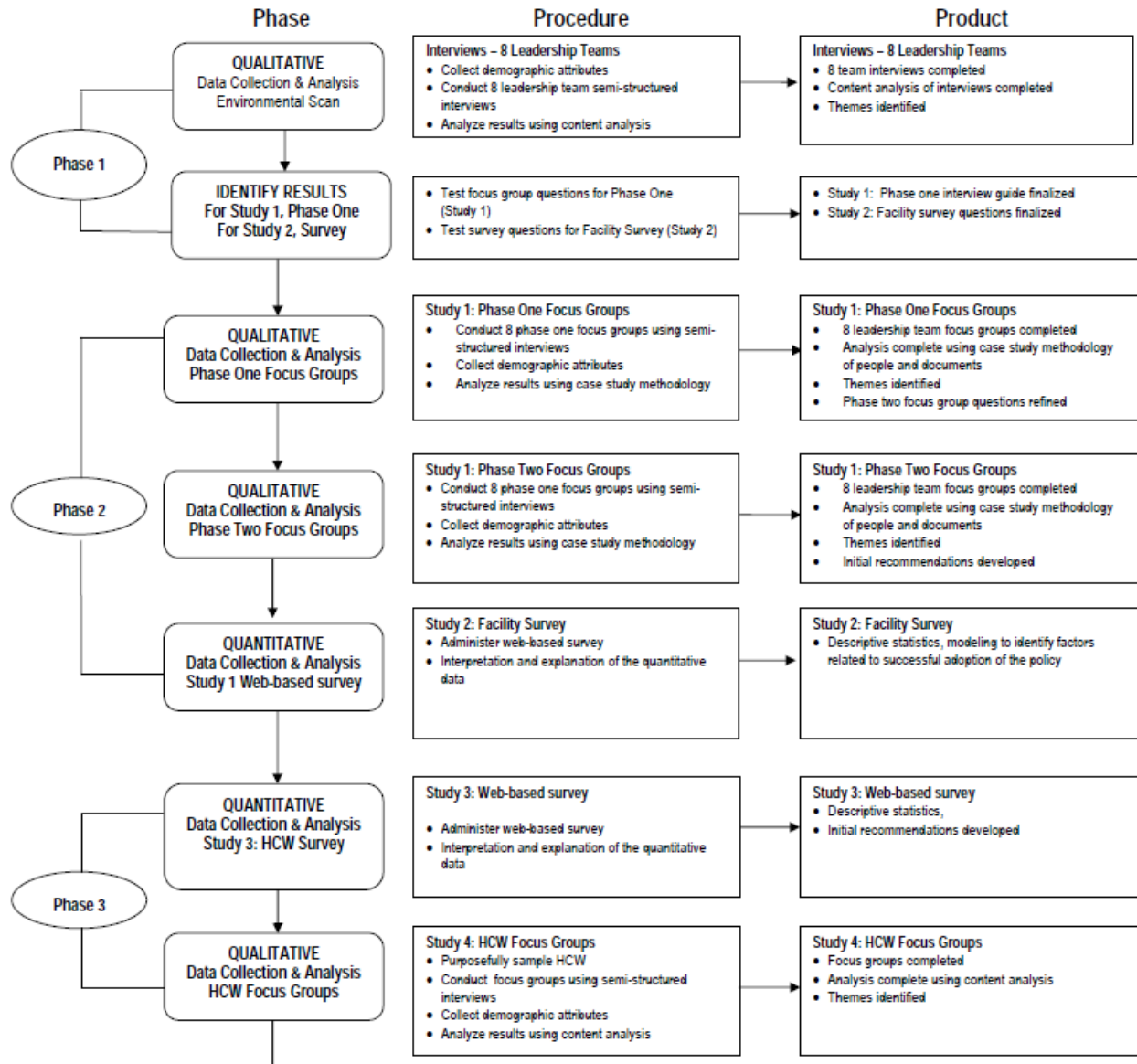
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# Appendix A

## Sequential explanatory methodology of the mixed-methods evaluation of BC's Influenza Prevention Policy, 2012



## Appendix B

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See separate document.