National cross-sectional survey of health workers perceptions of COVID-19 vaccine effectiveness, acceptance, and drivers of vaccine decision-making

Executive Summary

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Canada

Executive summary

Background and objectives

Mass vaccination campaigns have significantly reduced the Coronavirus Disease 2019 (COVID-19) burden across the world. Although vaccines are considered the most effective tools for consistently preventing severe COVID-19 diseases, there are many barriers to vaccine uptake that threaten the health of Canadians and people across the world. Worldwide vaccine hesitancy (VH) has posed significant global concerns and become a widespread public health issue for successful immunization. VH and acceptance among the general population and health workers (HWs) play an important role in successfully controlling the COVID-19 pandemic.

Vaccinating HWs against COVID-19 has been a public health priority since rollout began in late 2020. Health care workers (HCWs) in contact with COVID-19 patients are at a higher risk of infection than the general population. Mitigating and reducing this risk is essential to protecting HWs' well-being and reducing the spread of COVID-19.

Limited information is available about SARS-CoV-2 infection rates, COVID-19 vaccines uptake, perceptions of COVID-19 vaccine effectiveness (VE), acceptance, and drivers of vaccine decision-making among different categories of HWs, such as health care professionals (HCPs), allied health workers (ALHWs) and auxiliary health workers (AUHWs) in Canada. Evaluating the real-world COVID-19 vaccine uptake and performance is critical for understanding the characteristics that influence these behavioural and attitudinal decisions among these different HW categories in Canada.

Overall objectives of the quantitative and the qualitative survey were to:

- Measure self-reported SARS-CoV-2 infections and COVID-19 vaccination status among HCPs, ALHWs and AUHWs in Canada;
- Understand HWs' perceptions of COVID-19 vaccines effectiveness;
- Identify factors influencing HWs' decisions about COVID-19 vaccination, including drivers of hesitancy and acceptability;
- Assess HWs' attitudes toward COVID-19 vaccination mandates and other public health measures; and
- Identify HWs' COVID-19 information sources for future communications.

Methodology

To address the research objectives, a multi-mode research design was undertaken that included a quantitative and a qualitative component. Both components took place concurrently between May 8 and August 14, 2023, and were delivered in both official languages. Participants were HWs ≥18 years of age residing in Canada who were eligible for COVID-19 vaccination and exposed directly or indirectly to COVID-19 patients during our study period, from 2020 to 2023. This includes those who have stopped working for various reasons linked or not to public health measures related to mandatory vaccination in Canada.

The quantitative survey was disseminated using different approaches to reach the targeted HWs and collect the perspectives of as many HWs as possible: an open-link survey to HCPs', ALHWs', and AUHWs' organizations (regulatory bodies and professional associations); a unique link survey via panel sources (including general population panels and professions-based panels); and a snowballing method to share the survey with eligible peers and colleagues.

A total of 5,425 HWs (unweighted) participated in the quantitative online survey, of which respondents were excluded as they did not report their age or province of residence (n = 53). The remaining N= 5,372 eligible HWs (unweighted) were categorized into three main groups (unweighted): 2,278 HCPs; 2,278 ALHWs; and 807 AUHWs.

While this multi-frame approach reached a wide cross-section of the target population, the samples are based on self-selection and not a probability sample. The Standards for the Conduct of Government of Canada Public Opinion Research—Online Surveys state that results of non-probability online surveys should not be generalized to the overall target population. Therefore, the results cannot be extrapolated to the actual Canadian HWs' population, and no margin of sampling error can be calculated.

The qualitative research design was national in scope and delivered in both official languages. Additional effort was made to include equity-seeking groups. The qualitative findings are directional in nature and may not be extrapolated to a broader audience. A total of 33 HWs participated in the qualitative component conducted between May 2 and June 5, 2023, which consisted of eighteen (n = 18) in-depth interviews and four (n = 4) online focus groups with four to eight participants depending on the session.
Data were analyzed using a framework approach. Key behavioural determinants of COVID-19 vaccination decision-making were identified among the different categories of HWs by using the World Health Organization (WHO) Behavioural and Social Drivers of COVID-19 vaccination framework to inform the online quantitative and quantitative survey design and to frame the results.[1, 2]

Incentives

For the quantitative component, only respondents recruited through research panels (<15%) were incentivized to complete the survey.
For the qualitative component, Ipsos provided an honorarium to participants to attend in-depth interviews or focus groups to encourage full attendance and engagement.
Further details on incentives provided to quantitative and qualitative participants can be found in the Appendix.

Interpretation of Report Findings

For the purposes of analysis, the data for HCPs and ALHWs has been statistically weighted by profession/role and region to match proportions published by the Canadian Institute of Health Information (CIHI). The data for AUHWs has been weighted by region based on general population Census data. Unless otherwise stated, all data and proportions presented in this report are weighted data.

Contract value

The total contract value for the project was $295,579.75 including applicable taxes.

Key findings

The following section presents the main findings of the quantitative and qualitative research components. First, HWs' self-reported SARS-CoV-2 infection and vaccination history are described. This is followed by a discussion of their perceptions about the safety and effectiveness of COVID-19 vaccines, the factors that influenced their decisions about vaccination uptake, and lastly their attitudes toward COVID-19 vaccines and public health measures.

For the weighted results, a total of 5,372 respondents divided into three HWs categories was analyzed: n = 3,134 HCPs; n = 1,431 ALHWs; and n = 807 AUHWs. In each HW category, the majority of respondents were identified as female and approximately half of respondents were 40-59 years old. The proportion of HWs identified as Black, Indigenous, or other people of colour (BIPOC) were 34%, 32% and 43% respectively among HCPs, ALHWs and AUHWs. Most respondents reported residing in Ontario or Quebec, followed by Alberta and Northwest Territories, British Columbia, and Yukon. Fewer respondents reported residing in Atlantic provinces.

Self-reported SARS-CoV-2 infections and COVID-19 vaccination history

- The proportion of self-reported SARS-CoV-2 infections varied among HW categories and were highest among HCPs, followed by ALHWs and AUHWs. The proportion was higher among those working in hospital settings than non-hospital settings, and the first SARS-CoV-2 infection was more serious than subsequent infections, regardless of the workplace setting. Younger HWs reported a higher number of SARS-CoV-2 infections than older workers.
- Most respondents in each HW category (87-89%) reported being vaccinated against COVID-19 between 2020 and 2023. There was a notable variation in COVID-19 vaccination history between respondents employed in different workplace settings.

Perceptions of COVID-19 vaccine safety and effectiveness

- HWs generally expressed strong support for vaccination in general.
- However, when it came to COVID-19 vaccines specifically, perceptions of safety and effectiveness were lower, particularly among nurses and ALHWs.
- Concerns about the safety and effectiveness of COVID-19 vaccines were among the largest factors contributing to VH.

COVID-19 vaccine decision-making

Degree of COVID-19 vaccine acceptance and hesitancy

- Physicians were more accepting of COVID-19 vaccines than other HW categories, whereas AUHWs reported higher levels of hesitancy.
- COVID-19 VH was expressed to varying degrees among respondents who decided to get vaccinated, with 49-59% of HWs reporting some degree of hesitancy in their decision to get vaccinated.
- Survey respondents who hesitated getting vaccinated also reported receiving their first vaccination later on in the pandemic than respondents who did not report any hesitancy.
- HCPs and ALHWs who remained unvaccinated were very hesitant about their decision to get vaccinated and none of the unvaccinated HCPs planned to get vaccinated in the future.

Drivers of acceptance and hesitancy

There were several factors that influenced HWs' decisions to get vaccinated or not.

- **COVID-19 vaccine safety:** Most HWs based their vaccination decisions on how safe they thought the vaccines were. Their perception of COVID-19 vaccine safety was influenced by their perception of the risk of long-term side effects of vaccination and their willingness to trust expert sources and federal government recommendations. HWs who were more accepting of the COVID-19 vaccines were more likely to agree that they were safe and to trust the information provided by the federal government. Those who hesitated getting vaccinated or were unvaccinated thought the COVID-19 vaccines were not safe, believing COVID-19 vaccination would pose a risk to their health.

- **COVID-19 vaccine effectiveness:** HWs who were more accepting of the COVID-19 vaccines believed that getting vaccinated would better protect their patients, families, and communities, and reduce the burden on the health care system. Those who hesitated getting vaccinated or were unvaccinated believed that COVID-19 vaccines were not effective and would not provide any additional benefit to the immunity they would gain from SARS-CoV-2 infection.

- **COVID-19 vaccine mandates:** Vaccine mandates were one of most commonly reported reasons for getting vaccinated among respondents, with a high proportion of nurses indicating it as the sole reason for vaccination. Many HWs wanted to adhere to recommendations from public health officials. The majority (>70%) of unvaccinated respondents reported that they did not get vaccinated in part because they rejected being mandated to get vaccinated. Moreover, those who remained unvaccinated were the least likely to adhere to public health measures.

- **Level of confidence in regulatory systems:** HWs who were more accepting of the COVID-19 vaccines tended to have more confidence in Canada's regulatory informational systems for immunization, whereas many unvaccinated HCPs reported that their lack of confidence in these systems influenced their decision to not get vaccinated.

Attitudes toward COVID-19 vaccination

HWs were categorized into five distinct attitudinal groups based on key behavioural determinants and social factors in COVID-19 vaccination decision-making. Their COVID-19 vaccination status, degree of COVID-19 VH, and the role that vaccine mandates played in their decision to get COVID-19 vaccine were used to name and describe the following attitudinal groups as follows with their weighted proportions:

- **Vaccine Confidents (44.4%)**: This group was defined as those who received their COVID-19 vaccine primary series and answered "not at all hesitant" on the COVID-19 VH Likert scale. They were likely to receive their vaccine primary series without hesitation and were motivated primarily by the novelty of COVID-19, lack of available treatment options, and the desire to protect themselves and their family.

- **Vaccine Supporters (15.8%)**: This group was defined as those who received a COVID-19 vaccine primary series and reported being "not very hesitant" on the COVID-19 VH Likert scale. They shared similar motivations and attitudes toward a COVID-19 vaccine primary series as the Vaccine Confidents but have since become complacent and have a reduced sense of urgency toward receiving the COVID-19 booster doses.

- **Vaccine Hesitants (7.4%)**: This group tended to receive the COVID-19 vaccine primary series despite their initial hesitancy. They were identified based on having been "very hesitant" or "somewhat hesitant" in receiving a COVID-19 vaccine primary series and answering that they "somewhat disagree" or "strongly disagree" that the prospect of losing their employment played a role in their decision to get vaccinated or not. They expressed initial concern toward the COVID-19 vaccine primary series, related to the speed of the COVID-19 vaccine development and the potential for side effects.

- **Mandate-Driven Vaccinees (21.1%)**: This group only received COVID-19 vaccines to comply with the vaccine mandate for HWs. They were defined as respondents who reported being "very hesitant" or "somewhat hesitant" in receiving their COVID-19 vaccine primary series and answering that they "strongly agree" or "somewhat agree" that the prospect of losing their employment played a role in their decision to get vaccinated or not. They expressed significant hesitation towards COVID-19 vaccines, due to the speed of the COVID-19 vaccine development and their perception of the potential for side effects.

- **Unvaccinated respondents (8.0%)**: This group chose to either leave their profession or to remain working in their position within the private health care sector where the COVID-19 vaccine mandate did not apply. They had similar concerns as those identified among Mandate-Driven Vaccinees but decided not to receive a COVID-19 vaccine.

The qualitative analysis of the attitudinal groupings was further supported by the VH Matrix created by the Strategic Advisory Group of Experts on Immunization (SAGE) of the World Health Organization (WHO).[1] [2] The Matrix groups determinants of VH are based on three spheres of influence: individual and group influences, contextual influences, and vaccine-specific influences.

Attitudes toward public health measures

Participants' attitudes toward public health measures, specifically mask mandates and other public measures taken during the pandemic (e.g., social distancing, quarantine protocols), tended to align with their levels of hesitation toward the COVID-19 vaccines. For example, Vaccine Confidents and Vaccine Supporters were more likely to be supportive of vaccine mandates than participants who were considered Mandate-Driven Vaccinees. In terms of other public health measures, there was slightly more variation in participants, with some contention around the pandemic lockdowns, and largely positive reactions toward other public health measures such as masking and social distancing.

Sources of COVID-19 related information

Participants got their information about COVID-19 vaccines from different sources, and the types of sources they consulted differed depending on their level of aversion or hesitancy toward the COVID-19 vaccines.

- All participants leveraged trusted networks in some form; however, those with more positive attitudes toward COVID-19 vaccines tended to consult professional networks (i.e., working physician groups, medical experts, and colleagues), while those with more hesitancy toward the COVID-19 vaccines tended to consult informal networks for information (e.g., Facebook groups).

- Vaccine Confidents and Vaccine Supporters were most likely to actively engage with and express high levels of trust in workplace-provided information, government sources (including various public health officers), and statistics provided by traditional media sources.
- Vaccine Hesitant participants tended to consult their personal physician to ease their concerns about COVID-19 vaccines.
- For Mandate-Driven Vaccinees, information provided by their personal physician tended to contribute to their hesitation, as they saw the information their physicians provided as supporting the broader pro-vaccine narrative that they tended to be opposed to.

Conclusions

Throughout this research there were some common conclusions and implications that emerged, in both qualitative and quantitative components. The majority of HWs reported having received at least the COVID-19 primary series between 2020 and 2023. The most common reason for vaccination was to protect themselves, their families, or individuals living in their household from COVID-19. Vaccine mandates were another commonly reported reason for getting vaccinated, indicating that maintaining their job was one of the reasons they decided to get vaccinated, and 11% of HWs indicating it was the only reason.

The qualitative findings on drivers of VH aligned with the quantitative finding. HWs had strong support for vaccines in general. However, Vaccine Hesitants, Mandate-Driven Vaccinees and Unvaccinated respondents tended to mention concerns around the safety and effectiveness of COVID-19 vaccines, particularly among nurses and ALHWs. These may act as areas for further research or analysis, or simply considerations moving forward when looking at larger scale public health responses.

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Mike Colledge, President
Ipsos Public Affairs
Signed on 9.25.23