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Vulnerable and Hard-to-reach Populations COVID-19 Immunization Coverage Survey (VHCICS)

Methodological Report

Prepared for the Public Health Agency of Canada

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This report presents the methodological details for the *Vulnerable and Hard-to-reach Populations COVID-19 Immunization Coverage Survey* (VHCICS) conducted by Advanis Inc. on behalf of the Public Health Agency of Canada (PHAC). The survey was administered among 5,703 members of the adult Canadian general public, between January 9 and February 23, 2023.

Ce rapport est aussi disponible en français sous le titre: Enquête sur la couverture vaccinale contre la COVID-19 auprès des populations vulnérables et difficiles à atteindre

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1. Executive Summary

1.1 Background

Surveillance data suggests that vaccine coverage is uneven across Canada. Furthermore, results from existing surveillance tools suggest that some population subgroups are under-surveyed, which results in insufficient data regarding immunization status, knowledge, attitudes, and behaviours towards vaccination within these specific groups. In turn, this hinders core immunization functions including COVID-19 vaccine surveillance, vaccine confidence, available data, policy, public health guidance, and knowledge mobilization activities.

In the effort of addressing COVID-19 coverage gaps relating to vulnerable and hard-to-reach populations, the Public Health Agency of Canada (PHAC) developed this new surveillance tool, the *Vulnerable and Hard-to-reach Populations COVID-19 Immunization Coverage Survey* (VHCICS).

The purpose of the VHCICS is to provide information that is currently unavailable regarding COVID-19 immunization coverage and uptake in select vulnerable and hard-to-reach populations.

New surveillance tools are needed to address data coverage gaps identified for these sub-populations and to inform public health vaccination programs and initiatives. It will also inform decisions on prioritizing investments and crucial information funneled through PHAC, as well as federal, provincial, territorial and private partners.

1.2 Objectives

The primary objective of this surveillance project was to establish a surveillance tool to gain a better understanding of COVID-19 coverage-related information in select vulnerable and hard-to-reach populations.

Specifically, this survey aimed to collect information on:

- COVID-19 Immunization Status
- Intent to get vaccinated for those not yet vaccinated
- Reasons for non-vaccination (including barriers) for COVID-19
- Knowledge, attitudes and beliefs toward COVID-19 vaccines
- Sources of information on COVID-19 vaccines accessed by respondents
- Inequalities in vaccination uptake by socio-demographic characteristics

The second survey objective was to document the socioeconomic, cognitive, and motivational factors associated with low uptake of the COVID-19 vaccine in eleven (11) vulnerable and hard-to-reach populations in relation to a general population benchmark sample.

1.3 Methodology

Data collection started on January 9, 2023, and ended on February 23, 2023, and was conducted by Advanis.

Advanis first focused on a benchmark survey that was a probability-based survey of 1,005 Canadians aged 18 or older using Advanis' General Population Representative Sample (GPRS) sample in a multi-phase sampling approach. This approach involves collecting data from randomly selected sample units (GPRS), and then collecting more data from a randomly selected subsample¹.

Advanis then used the same core questions in the questionnaire administered to the general population to survey 11 specialized, vulnerable and hard-to-reach populations, each with a couple of variations according to the target population. Overall, a sample of 5,703 Canadians aged 18 or older was reached using Advanis' GPRS sample. For the specialized groups, recruitment was completed using targeting information Advanis had on profile within the GPRS database to ensure quota minimums were met. Targeting was possible for those in groups A and B, but group C was based on natural fallout of the sample. The results can be extrapolated to general population and to the targeted A and B subpopulations.

The 11 specialized vulnerable and hard-to-reach populations included:

- **Group A:** Specialized populations aged 18 years and older
 - a) people with lower income (less than \$60k per year, per household);
 - b) people with lower education (high school or less); and
 - c) younger adults (aged 18-29 years).

- **Group B:** Specialized populations aged 18 years and older
 - a) urban Indigenous people;
 - b) visible minorities (including Indigenous);
 - c) recent immigrants (adults who have lived in Canada for less than 10 years); and
 - d) people living in rural or remote locations.

- **Group C:** Specialized populations aged 18 years and older
 - a) people who use drugs (i.e., illegal substances excluding alcohol, cannabis or tobacco);
 - b) health care workers (e.g., nurses, doctors, long-term care workers, volunteers);
 - c) industry workers in factory settings (e.g., manufacturing; agriculture, forestry, fishing, food processing; transportation and warehousing); and
 - d) transportation workers, specifically truck drivers.

Participants pulled from Advanis' GPRS sample were recruited by cell phone and were invited to participate in a Web survey. Those who agreed to participate received an email or SMS inviting them to take part in the survey.

Survey results were weighted by nested data obtained from Statistics Canada from the 2021 census. The weighting variables included status on gender, education, income, age, population center, visible minority,

¹ Statistics Canada (2021). Statistics: Power from Data! – Probability Sampling – Multi-Phase Sampling Approach. <https://www150.statcan.gc.ca/n1/edu/power-pouvoir/ch13/prob/5214899-eng.htm#a7>

recent immigrant and Indigenous. The results for 2023 are based on responses from 5,703 Canadians across all provinces and territories. Recruitment ensured quotas were reached for key sub-populations to ensure statistical relevance and representativeness.

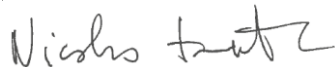
1.4 Contract Value

The contract value for this survey was \$296,072.43 (including HST).

1.5 Political Neutrality Requirement

I hereby certify as a Senior Officer of Advanis that the deliverables fully comply with the Government of Canada political neutrality requirements outlined in the Communications Policy of the Government of Canada and Procedures for Planning and Contracting Public Opinion Research.

Specifically, the deliverables do not contain any reference to electoral voting intentions, political party preferences, standings with the electorate, or ratings of the performance of a political party or its leader.



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2. Methodology

The Public Health Agency of Canada (PHAC) sought to address deficiencies in data coverage gaps relating to vulnerable and hard-to-reach populations and COVID-19 Immunization coverage. PHAC contracted Advanis to conduct the *Vulnerable and Hard-to-reach Populations COVID-19 Immunization Coverage Survey* (VHCICS), a 10-minute online survey of Canadians 18 years and older. The study used Advanis' proprietary, probability-based General Population Representative Sample (GPRS). The probability-based study was conducted using a two-step approach where respondents were recruited by cell phone to participate in an online web survey. Respondents were invited to participate in the online survey by either email or SMS (text message), based on their preference at the time of recruitment. After the initial invitation, if respondents had not yet completed the survey, they were sent up to two (2) reminder messages. Reminder messages were sent 3 and 6 days after the initial recruitment.

2.1 Survey Design

The questions for this survey were designed by the Public Health Agency of Canada and supplied to Advanis. Advanis was responsible for the French survey translation. The questionnaire contained core questions about COVID-19, including vaccination status, barriers to vaccination, knowledge attitudes and beliefs related to vaccination, and questions specific to each targeted population group, demographics, and questions about general health.

The Government of Canada's standards for pre-testing were adhered to. The pretest was conducted in both English and French. The pretest was conducted on January 9-10, 2023. The pre-testing targeted those with lower education as this population shares similar characteristics with other select specialized groups and has a greater incidence rate than other specialized populations from this survey, thereby permitting for a more meaningful pretest. During this pretest, 213 people were recruited by cell phone in English and French. This led to 53 completed online surveys (20 French, and 33 English). After the pretest, it was determined that respondents may not be reading the disclaimer that taking drugs should exclude cannabis and alcohol and only include prescription medications that were being taken more frequently than prescribed by a doctor. Given this, a level of "I do not use illegal drugs / abuse prescription medications" was added to the survey before full launch of the data collection to mitigate the number of respondents incorrectly answering the drug-related questions in the survey. In addition, results from the pre-testing indicated that only very minor changes were required. Given these minor and non-significant changes, data gathered from pre-testing completions was retained in the final dataset (n=53) and included as part of the total sample size.

Among those completing the survey online, the average survey length was 10.7 minutes.

2.2 Sampling and Administration

The target audience for this project included specialized population groups, as well as general population group that serves as benchmark. Respondents needed to be 18 years of age or older and living in Canada in order to be eligible for the survey.

The targeted number of completed surveys was 5,700 Canadian adults. A total of 5,703 responses were obtained (4,827 in English and 876 in French) to reach quotas, where possible (Table 1).

Table 1: Geographic sample and completes

Population Groups by Province	Total Completes	Group A Specialized Populations			Group B Specialized Populations				Group C Specialized Populations			
		Low education	Low income	Younger adults	Urban Indigenous	Visible minority (incl. Indigenous)	Recent immigrants	Rural or Remote	Truck Drivers	Drug users	Healthcare workers	Industry workers
Alberta	674	264	218	111	74	222	47	71	31	63	49	61
British Columbia	814	249	326	136	78	314	78	128	25	92	80	50
Manitoba	213	60	68	53	31	99	36	42	9	22	24	20
Saskatchewan	190	63	70	35	32	64	13	55	4	22	20	17
Ontario	2185	533	789	573	155	892	183	383	54	268	188	164
Quebec	1189	219	537	346	38	460	200	223	35	123	122	115
Atlantic	397	119	212	121	28	104	29	152	4	35	49	17
Territories	41	8	14	7	9	20	6	16	1	8	3	0
Total	5703	1515	2234	1382	445	2175	592	1070	163	633	535	444
Target	5700	900	900	900	400	900	400	400	Natural fallout			

Overall, 17,222 people were recruited to participate in the survey, with 5,703 completing the web survey for a response rate of 33.1%, and a margin of error of +/-1.3% (19 times out of 20 at a 95% confidence interval). The average survey length was 10.7 minutes. Table 2 provides information on the number of completes and target completes by specialized groups A & B, group C could not be targeted.

Table 2: Field details by specialized population group

Population Group Field Details	Total Completes	Group A Specialized Populations			Group B Specialized Populations			
		Low education	Low income	Younger adults	Urban Indigenous	Visible minority (incl. Indigenous)	Recent immigrants	Rural or Remote
Invited	17 222	4048	7762	6397	2357	7147	4208	2848
Completed	5703	1515	2234	1382	445	2175	592	1070
Response rate (completed / invited)	33,1%	37,4%	28,8%	21,6%	18,9%	30,4%	14,1%	37,6%
Margin of error	+/-1.3%	+/-2.5%	+/-2.1%	+/-2.6%	+/-4.6%	+/-2.1%	+/-4.0%	+/-3.0%
Survey length (min)**	10,7	11,3	11,4	8,9	10,6	11,5	14,6	14,2

*Note that specialized groups are not exclusive, respondents can fall into multiple groups.

** It is to be noted that some participants were part of multiple subgroups.

2.3 Weighting and Data Cleaning

The VHCICS data is weighted by nested data obtained from Statistics Canada from the 2021 Census. The weighting variables included status on gender, education, income, age, population center, visible minority, recent immigrant and Indigenous.

The values attributed to the different weight categories can be found in Appendix A.

Data cleaning involved creating variables for each of the specialized populations, so that analysis can be easily performed for each group. Specialized populations were indicated in a sample variable. In addition to this, response levels in some questions were rebased to the entire population rather than just subpopulations (e.g., for levels that were only shown to Indigenous), so that percentages would accurately reflect those of the whole population and not just those of the subpopulation. Other specify comments were reviewed and back coded into existing levels where required. For some questions, when the “Other” level exceeded 10%, verbatim responses were reviewed and additional categories were added to the questions based on the responses (e.g. A6, C14 and C16). Some variables were derived for reporting purposes (e.g. A1, A10).

One major data cleaning element done to validate the data was to review the specified drugs listed in the Other specify responses for C21, as there was a fair number of respondents who entered “None”, “cannabis”, or “alcohol” in the specify box. These respondents should not have selected “Yes” to drug use in S9. As such, these cases were reviewed and back coded out of the drug-related questions, and their S9 response was updated to “No”. After the pretest, an opt-out option was added on C21 for not using drugs. These cases were similarly back coded to “No” in S9, and their data was removed from C21 through C23.

2.4. Quality Control

Advanis employs several quality control measures to ensure success across the entire life cycle of the project. These measures are detailed below.

Survey Programming: Advanis utilizes technology to maximize quality control in survey programming. Having developed a proprietary survey engine tool, Advanis professionals are able to design and program

a survey in a browser-based environment, eliminating the need to involve a programmer who is less familiar with the survey subject matter. The survey was thoroughly pre-tested by Advanis' project team members, as well as by non-team members (non-team members provide "fresh eyes" for catching potential errors).

CATI Methodology: The CATI recruit script was programmed on Advanis' proprietary CATI platform with no unforeseen challenges. Advanis was able to leverage its experience for the survey programming and the reminder process to achieve high quality standards. Advanis implemented the following to ensure the highest quality data collection:

- Trained the interviewers to best understand the survey's objectives and to ensure that they were able to pronounce and understand the survey wording.
- Detailed call records were kept by the automated CATI system, and were monitored for productivity analysis (i.e., not subject to human error).
- The recruit scripts were pre-tested for best possible flow.
- Our average interviewer employment tenure is very high compared to industry standards, resulting in a team of interviewers who are more experienced and knowledgeable regarding the target audience.
- Advanis' Quality Assurance team listened to the actual recordings of ten percent of completed surveys and compared the responses to those entered by the interviewer, to ensure that responses were properly recorded. This is in addition to the live monitoring done by field supervisors.
- Team Supervisors conduct regular, more formal evaluations with each interviewer, in addition to nightly monitoring of each interviewer on their team.

To ensure high interview quality, our interviewers are trained to use various interviewing techniques. As well as maintaining a professional attitude, our interviewers must also be convincing, read word-for-word, take notes, systematically confirm the information given and listen to the respondent. Advanis has also created internal tools within the survey script for interviewers allowing them to use the phonetic alphabet to confirm email address spelling (e.g., a for alpha, b for bravo, etc.) to help reduce the amount of bounced email addresses. However, should bounced emails occur, Advanis has also developed additional tools that allow for someone to re-listen to the recording and easily adjust to correct the email address.

Web Methodology: All Advanis web surveys are hosted internally by Advanis, and employ a rigorous and stringent set of data collection control mechanisms to ensure the highest quality for the data collected, including:

- Respondents have a unique access code to ensure that only that participant can complete the online survey.
- Extensive internal logic checks are programmed directly into the survey to ensure logical responses.
- Web surveys are implemented using Advanis' proprietary software (which is designed to handle complicated survey formats).
- Advanis administered a detailed internal test and an external pretest to ensure that the survey instrument was working as planned.
- Tested the questionnaire in multiple browsers and provided PHAC with a link so they could do internal testing.

Data Handling and Reporting: For the data collected, Advanis develops rules to check the validity of the data. These rules include items such as:

- Time taken to complete the survey.
- Checking for verbatims that are gibberish or don't make sense.
- And, of course, rigorous checks are completed to ensure the data is accurate and error-free according to the questionnaire logic (skip patterns).

All data cleaning performed on projects are outlined and tracked in an internal spec document so they can be QA'd and signed off on. The original raw data file is never overwritten, so that if an error is discovered in our code, we can quickly and easily rerun things to produce a new data file. Individuals developing code incorporate internal checks in their code (e.g., crosstabs) to ensure the adjustment had the desired effect. In addition, all recoding is reviewed by another team member or technical specialist for accuracy.

3. Non-response Bias and Limitations

Non-response bias occurs when non-responders differ in a meaningful way from respondents and this difference impacts the information gathered. It is difficult to assess the presence of non-response bias since information about why non-responders did not participate is usually unavailable. That said, one way to gauge the potential impacts of non-response bias is to evaluate if the sample is representative by comparing the respondents' characteristics and gauge if they reflect known population characteristics. Where possible, we can check the distribution of respondents across various demographics (e.g., age and gender) and geographic categories and compare those distributions against known population characteristics. If the variation is fairly small and we have no reason to believe there are other factors impacting respondents' willingness to participate, we can conclude that the likelihood of non-response bias impacting the information gathered in the survey is minimal. This is the case with the current survey.

Several strategies were employed to increase response rates and reduce the effects of non-response bias. This includes:

- Recruiting respondents by telephone (cellular).
- Outpulsing a local phone number (rather than a toll-free number) which increases pick-up rates (reducing call screening).
- Systematically setting the next call date and time based on the outcome of the current call, which ensures that each respondent is called methodically across days of the week and times of the day. Especially for respondents that are difficult to reach, this maximizes the likelihood of reaching them.
- Sending an SMS text message to recruits, which assures a seamless transition from the telephone survey to the online survey, as receipt can be confirmed in real time and encourages respondents to complete the survey as soon as the call ends.
- Collecting both email address and telephone number for recruitment so that if the email address does bounce, we can contact them via SMS message if they agree.
- Offering the survey in both official languages to maximize ease of completion.

4. Guidelines for Analysis and Release

Any results with an unweighted base size (denominator) of less than 30 should be interpreted with caution.²⁻³ This is due to the increased coefficient of variation and, hence, there are larger confidence intervals around results with smaller bases. Furthermore, for confidentiality purposes, any results with a base of less than 10 should be suppressed.

For all estimates based on a denominator size of 30 or more, the following guidelines for data suppression related to coefficient of variations (CV) should be used when reporting estimates:²

Type of Estimate	CV (in %) ⁴	Guidelines
Acceptable	$CV \leq 15.0$	Estimates can be considered for general unrestricted release. Requires no special notation.
Marginal	$15.0 < CV \leq 35.0$	Estimates can be considered for general unrestricted release but should be accompanied by a warning cautioning users of the high sampling variability associated with the estimate.
Unacceptable	$CV > 35.0$	It is recommended to not release estimates of unacceptable quality.

Examining the confidence interval of the estimate will provide further indication of the quality of the estimate in terms of the variability. Long confidence intervals indicate less precision in the estimate while smaller confidence intervals indicate greater precision. When assessing the trustworthiness of sample proportions, the confidence intervals of estimates should be taken into account.²

4.1 Rounding Guidelines

Users are urged to adhere to the following rounding guidelines for estimates.

- Estimates in the main body of a statistical table are to be rounded to the nearest hundred units using the normal rounding technique. In normal rounding, if the first or only digit to be dropped is 0 to 4, the last digit to be retained is not changed. If the first or only digit to be dropped is 5 to 9, the last digit to be retained is raised by one. For example, in normal rounding to the nearest 100, if the last two digits are between 00 and 49, they are changed to 00 and the preceding digit (the hundreds digits) is left unchanged. If the last digits are between 50 and 99, they are changed to 00 and the preceding digit is increased by 1.
- Marginal sub-totals and totals in statistical tables are to be derived from their corresponding unrounded components and then are to be rounded themselves to the nearest 100 units using normal rounding.
- Averages, rates and percentages are to be computed from un-rounded components (i.e. numerators and/or denominators) and then are to be rounded themselves to one decimal using normal rounding. In normal rounding to a single digit, if the final or only digit to be dropped is 0

² CDC. National Center for Health Statistics Data Presentation Standards for Proportions. 2017. Available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf

³ Statistics Canada. Canadian Community Health Survey User Guide. 2021.

⁴ $CV = (\text{standard error} / \text{coefficient}) * 100$ where the coefficient is either the regression coefficient or the proportion estimate.

to 4, the last digit to be retained is not changed. If the first or only digit to be dropped is 5 to 9, the last digit to be retained is increased by 1.

- Under no circumstances are un-rounded estimates to be published or otherwise released by users. Un-rounded estimates imply greater precision than actually exists.

Appendices

Appendix A: Weights for the direct weighting method

Definition of weighting variables. All the definitions are based on statistic Canada categories.

- 1- Gender: Men+ includes transgender men and half of the non-binaries. Women+ includes transgender women and half of the non-binaries.
- 2- Education: Low education is high school or less. Not low education includes all others.
- 3- Income: Low income is less than \$60,000. Not low income is more than \$60,000.
- 4- Age: We have 4 age categories, 18-29, 30-34, 35-54 and 55+.
- 5- Urban or rural / remote: Rural or remote communities are postal codes with "0" as the second character or self-defined as rural or remote. Else are urban.
- 6- Origin: Visible minority or not a visible minority.
- 7- Indigenous: Is indigenous includes First Nation, Métis and Inuit.
- 8- Recent immigrant: Recent immigrant is defined as a resident for less than 10 years.

Weighting category	Weight
Men +, Not low education, Not low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.452
Men +, Not low education, Not low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.226
Men +, Not low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.733
Men +, Not low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	1.062
Men +, Not low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.750
Men +, Not low education, Not low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.457
Men +, Not low education, Not low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.105
Men +, Not low education, Not low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.234
Men +, Not low education, Not low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.200
Men +, Not low education, Not low income, 18-29, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.438
Men +, Not low education, Not low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.611
Men +, Not low education, Not low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.342
Men +, Not low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.169
Men +, Not low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.953
Men +, Not low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.377
Men +, Not low education, Not low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.292
Men +, Not low education, Not low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.249
Men +, Not low education, Not low income, 30-34, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.296

Men +, Not low education, Not low income, 30-34, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.551
Men +, Not low education, Not low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.931
Men +, Not low education, Not low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.391
Men +, Not low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.818
Men +, Not low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.370
Men +, Not low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.221
Men +, Not low education, Not low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.490
Men +, Not low education, Not low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.432
Men +, Not low education, Not low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.149
Men +, Not low education, Not low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.530
Men +, Not low education, Not low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.585
Men +, Not low education, Not low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.219
Men +, Not low education, Not low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.053
Men +, Not low education, Not low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.639
Men +, Not low education, Not low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.178
Men +, Not low education, Not low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.140
Men +, Not low education, Not low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.083
Men +, Not low education, Not low income, 55+, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.902
Men +, Not low education, Not low income, 55+, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.116
Men +, Not low education, Not low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.183
Men +, Not low education, Low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.188
Men +, Not low education, Low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.246
Men +, Not low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.261
Men +, Not low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.226
Men +, Not low education, Low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.151
Men +, Not low education, Low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.119
Men +, Not low education, Low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.064
Men +, Not low education, Low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.043
Men +, Not low education, Low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.165
Men +, Not low education, Low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.752

Men +, Not low education, Low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.340
Men +, Not low education, Low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.367
Men +, Not low education, Low income, 30-34, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.292
Men +, Not low education, Low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.876
Men +, Not low education, Low income, 30-34, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.094
Men +, Not low education, Low income, 30-34, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.042
Men +, Not low education, Low income, 30-34, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.230
Men +, Not low education, Low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.061
Men +, Not low education, Low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.321
Men +, Not low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.269
Men +, Not low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.173
Men +, Not low education, Low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.254
Men +, Not low education, Low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.887
Men +, Not low education, Low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.069
Men +, Not low education, Low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.578
Men +, Not low education, Low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.282
Men +, Not low education, Low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.203
Men +, Not low education, Low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.500
Men +, Not low education, Low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.170
Men +, Not low education, Low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.160
Men +, Not low education, Low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.987
Men +, Not low education, Low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.109
Men +, Not low education, Low income, 55+, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.241
Men +, Not low education, Low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.338
Men +, Low education, Not low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.621
Men +, Low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	3.284
Men +, Low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	7.085
Men +, Low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	11.524
Men +, Low education, Not low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.896
Men +, Low education, Not low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.453

Men +, Low education, Not low income, 18-29, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	6.282
Men +, Low education, Not low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.231
Men +, Low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	2.576
Men +, Low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	3.939
Men +, Low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.780
Men +, Low education, Not low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.506
Men +, Low education, Not low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.174
Men +, Low education, Not low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	2.356
Men +, Low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	3.643
Men +, Low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	3.297
Men +, Low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	1.227
Men +, Low education, Not low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.116
Men +, Low education, Not low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.477
Men +, Low education, Not low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	1.419
Men +, Low education, Not low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.275
Men +, Low education, Not low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.209
Men +, Low education, Not low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	5.236
Men +, Low education, Not low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.993
Men +, Low education, Not low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.700
Men +, Low education, Not low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	4.699
Men +, Low education, Low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.414
Men +, Low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.612
Men +, Low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.592
Men +, Low education, Low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.724
Men +, Low education, Low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.276
Men +, Low education, Low income, 18-29, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.707
Men +, Low education, Low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.192
Men +, Low education, Low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.953
Men +, Low education, Low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.095
Men +, Low education, Low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.736

Men +, Low education, Low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.692
Men +, Low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.385
Men +, Low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.756
Men +, Low education, Low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.323
Men +, Low education, Low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.527
Men +, Low education, Low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.371
Men +, Low education, Low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.625
Men +, Low education, Low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.252
Men +, Low education, Low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.265
Men +, Low education, Low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.863
Men +, Low education, Low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.214
Men +, Low education, Low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.369
Men +, Low education, Low income, 55+, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.451
Men +, Low education, Low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	1.306
Women +, Not low education, Not low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.521
Women +, Not low education, Not low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.294
Women +, Not low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.735
Women +, Not low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	2.949
Women +, Not low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	1.997
Women +, Not low education, Not low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.499
Women +, Not low education, Not low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.422
Women +, Not low education, Not low income, 18-29, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.421
Women +, Not low education, Not low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.611
Women +, Not low education, Not low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	1.112
Women +, Not low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	2.083
Women +, Not low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	1.106
Women +, Not low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.560
Women +, Not low education, Not low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.065
Women +, Not low education, Not low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.145
Women +, Not low education, Not low income, 30-34, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.651

Women +, Not low education, Not low income, 30-34, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	1.463
Women +, Not low education, Not low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.176
Women +, Not low education, Not low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.459
Women +, Not low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.275
Women +, Not low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	1.212
Women +, Not low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.211
Women +, Not low education, Not low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.399
Women +, Not low education, Not low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.423
Women +, Not low education, Not low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.541
Women +, Not low education, Not low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.266
Women +, Not low education, Not low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.272
Women +, Not low education, Not low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.663
Women +, Not low education, Not low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.421
Women +, Not low education, Not low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.986
Women +, Not low education, Not low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.967
Women +, Not low education, Not low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.143
Women +, Not low education, Not low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.230
Women +, Not low education, Not low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.218
Women +, Not low education, Not low income, 55+, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.565
Women +, Not low education, Not low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.223
Women +, Not low education, Low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.167
Women +, Not low education, Low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.229
Women +, Not low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.245
Women +, Not low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.430
Women +, Not low education, Low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.202
Women +, Not low education, Low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.093
Women +, Not low education, Low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.151
Women +, Not low education, Low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.040
Women +, Not low education, Low income, 18-29, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.450
Women +, Not low education, Low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.733

Women +, Not low education, Low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.915
Women +, Not low education, Low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.737
Women +, Not low education, Low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.470
Women +, Not low education, Low income, 30-34, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.285
Women +, Not low education, Low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.531
Women +, Not low education, Low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.053
Women +, Not low education, Low income, 30-34, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.093
Women +, Not low education, Low income, 30-34, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.054
Women +, Not low education, Low income, 30-34, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.355
Women +, Not low education, Low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.891
Women +, Not low education, Low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.660
Women +, Not low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.475
Women +, Not low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.289
Women +, Not low education, Low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.147
Women +, Not low education, Low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.447
Women +, Not low education, Low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.140
Women +, Not low education, Low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.091
Women +, Not low education, Low income, 35-54, Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.048
Women +, Not low education, Low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.108
Women +, Not low education, Low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.189
Women +, Not low education, Low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.598
Women +, Not low education, Low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	1.121
Women +, Not low education, Low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.099
Women +, Not low education, Low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.949
Women +, Not low education, Low income, 55+, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.495
Women +, Not low education, Low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.215
Women +, Low education, Not low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.263
Women +, Low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	5.197
Women +, Low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	6.197
Women +, Low education, Not low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	3.176

Women +, Low education, Not low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	3.830
Women +, Low education, Not low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Recent immigrants	0.246
Women +, Low education, Not low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.113
Women +, Low education, Not low income, 18-29, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	5.115
Women +, Low education, Not low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.146
Women +, Low education, Not low income, 30-34, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	6.478
Women +, Low education, Not low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.012
Women +, Low education, Not low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.205
Women +, Low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	8.816
Women +, Low education, Not low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.957
Women +, Low education, Not low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.283
Women +, Low education, Not low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	1.247
Women +, Low education, Not low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.088
Women +, Low education, Not low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	60.309
Women +, Low education, Not low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.851
Women +, Low education, Not low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	2.587
Women +, Low education, Not low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	2.269
Women +, Low education, Low income, 18-29, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.442
Women +, Low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.640
Women +, Low education, Low income, 18-29, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	0.532
Women +, Low education, Low income, 18-29, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	2.532
Women +, Low education, Low income, 18-29, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.356
Women +, Low education, Low income, 18-29, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.163
Women +, Low education, Low income, 30-34, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.735
Women +, Low education, Low income, 30-34, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	1.465
Women +, Low education, Low income, 30-34, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.804
Women +, Low education, Low income, 35-54, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.746
Women +, Low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	1.588
Women +, Low education, Low income, 35-54, Not Rural or Remote, Visible minority, Not Indigenous, Recent immigrants	2.171
Women +, Low education, Low income, 35-54, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.230

Women +, Low education, Low income, 35-54, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	0.502
Women +, Low education, Low income, 35-54, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.366
Women +, Low education, Low income, 55+, Not Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.509
Women +, Low education, Low income, 55+, Not Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	3.645
Women +, Low education, Low income, 55+, Not Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.373
Women +, Low education, Low income, 55+, Rural or Remote, Not Visible minority, Not Indigenous, Not Recent immigrants	1.214
Women +, Low education, Low income, 55+, Rural or Remote, Visible minority, Not Indigenous, Not Recent immigrants	0.262
Women +, Low education, Low income, 55+, Rural or Remote, Visible minority, Indigenous, Not Recent immigrants	0.498

Appendix B: Questionnaire

PHAC VHCICS

Government of Canada



Languages: English, French

Consent

[Si vous préférez répondre au sondage en français, veuillez cliquer sur français.](#)

You have been invited to participate in a public health, knowledge, attitudes and experiences survey which is being conducted among key Canadian populations. The Public Health Agency of Canada has contracted an independent public opinion research company, [Advanis \(http://advanis.net\)](http://advanis.net) (TellCityHall is one of Advanis' data collection methods), to conduct the research on the Public Health Agency of Canada's behalf.

The online survey is voluntary and will take approximately 10 minutes to complete. This research has been approved by the Public Health Agency of Canada Research Ethics Board.

If you agree to participate in this survey, please click on the following button to continue:

Participation in this study is voluntary and you can withdraw at any time. There will be no consequences if you decide not to participate. Your decision to participate does not waive your right to legal recourse in the event of research-related harm. You may skip questions that you do not feel comfortable answering by clicking "Prefer not to answer", where applicable. You may also complete the survey in several sessions and from different devices. If you get interrupted while doing the survey, you can click on the same link to pick up right where you left off. Once data has been collected, please note that researchers have no way of knowing which data belongs to which participant. The results from partially completed or abandoned surveys will be deleted.

What You Will Be Asked to Do

You will be asked to complete a survey to answer some demographic questions and questions related to the COVID-19 vaccines. Please note that certain questions will be asked at the start of the survey to determine if you are eligible to participate. If you are not eligible to participate, your data will be removed and destroyed.

Why are we collecting your information?

The aim of this survey is to gain knowledge about knowledge, attitudes, and experiences related to public health topics in Canada.

You will be asked questions, such as age, gender, and ethnicity in order to better understand knowledge, attitudes, and experiences across different key populations. You will also be asked about the first three characters of your postal code to help determine your geographic area for sampling purposes. Your home address cannot be identified with this information. We will not ask you to provide us with any information that could directly identify you, such as name(s), or full date of birth and data will be stored on password-protected computers. However, in exceptional circumstances, individual responses in combination with other available information could lead to identifying you. The protection of your personal information is very

important to us and we will make every effort to safeguard it and reduce the risk that you are identified.

It is possible that some questions may be triggering to some people. Risks to participants will be minimized by providing a note before these questions appear. You have the right to skip any questions you are not comfortable answering.

What is the Authority to Collect the Information?

The information you provide to the Public Health Agency of Canada is collected by the Centre for Immunization Surveillance under the authority of section 4 of the *Department of Health Act* and Section 3 of the *Public Health Agency of Canada Act* and handled in accordance with the *Privacy Act*.

Will we use or share your personal information for any other reason?

The survey firm, Advanis, will be responsible for collecting survey data from all participants. Once data collection is complete, Advanis will provide the Public Health Agency of Canada with a dataset that will not include any individual responses to reduce the risk that you could be identified. All the responses received will be grouped for analysis and presented in grouped form. The dataset will also be available to federal and provincial governments, Indigenous governments and organizations, and researchers across Canada, if requested. Any reports or publications produced based on this research will use grouped data and will not identify you or link you to these survey results.

What are your rights?

You have a right to complain to the Privacy Commissioner of Canada if you feel your personal information has not been handled properly.

If you have any questions or concerns about the survey or the information we are collecting, please e-mail: survey+phachealth@tellcityhall.ca (<mailto:survey+phachealth@tellcityhall.ca>).

For technical support with the survey, accessibility requirements, or to request to complete the survey over the phone you can contact survey+phachealth@tellcityhall.ca (<mailto:survey+phachealth@tellcityhall.ca>).

For more information about COVID-19 vaccination: <https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19/vaccines.html> (<https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19/vaccines.html>).

The Public Health Agency of Canada has contracted an independent public opinion research company, Advanis (<http://advanis.net>), to conduct the research on PHAC's behalf. This project has been registered with CRIC under number: 20221122-AD039. [CRIC website](https://www.canadianresearchinsightscouncil.ca/rvs/home/20221122-AD039)

(<https://www.canadianresearchinsightscouncil.ca/rvs/home/20221122-AD039>).

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(<https://www.canadianresearchinsightscouncil.ca/wp-content/uploads/2020/09/CRIC-Pledge-to-Canadians.pdf>)

C18

In general, how would you describe your **physical health**?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor
- 8 Prefer not to answer
- 9 Don't know

C19

In general, how would you describe your **mental health**?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor
- 8 Prefer not to answer
- 9 Don't know

C13

Have you experienced difficulties accessing any public health care services you need in your area?

- 1 Yes
- 2 No
- 8 Prefer not to answer
- 9 Don't know

C14 *Show if C13 Yes (C13 = 1)*

What type of difficulties have you experienced?

Please select all that apply

- 1 Difficulty getting an appointment/long appointment wait times *
- 2 Service not available in my area *
- 3 Service not available at time required *
- 4 Limited transportation *
- 5 Limited walk-in appointments *
- 6 Did not know where to go *

- 7 Unable to leave house due to general health deterioration *
- 8 Language barriers *
- 9 Other, specify: _____
- 8 Prefer not to answer
- .9 Don't know

*Levels marked with * are randomized*

S1

In what year were you born?

Minimum: 1923, Maximum: 2023

Year of birth _____

- 8 Prefer not to answer

S1a *Show if S1 Prefer not to answer (S1 = Prefer not to answer)*

For our analysis of the data, we need to know at least your age category. Can you tell us if you are aged...

- 1 Under 18
- 2 18 to 24
- 3 25 to 29
- 4 30 to 34
- 5 35 to 44
- 6 45 to 54
- 7 55 to 64
- 8 65 or older
- 8 Prefer not to answer

T2 *Show if Under 18 ((S1 > 2005) OR (S1a = 1))*

Thank you for your interest but for this survey you must be 18 years of age or older.



ADVANIS

(<http://www.advanis.ca>)

and our public policy service



Status Code: 506

T3 *Show if Refused Age (S1a = Prefer not to answer)*

Thank you for your interest but for this survey we need to know your age in order to compile the results for analysis.



and our public policy service



Status Code: 507

S2

What is the highest level of formal education you have completed?

- 1 Less than a high school diploma or equivalent
- 2 High school diploma or equivalent
- 3 Registered apprenticeship or other trade certificate or diploma
- 4 College/CEGEP or other non-university certificate or diploma
- 5 University certificate or diploma below bachelor's level
- 6 University – bachelor's degree or equivalent
- 7 University – post-graduate degree above bachelor's level or equivalent
- 8 Other, please specify _____
- 8 Prefer not to answer

S3

Please indicate your total household income, before taxes and deductions, for the year ending December 31, 2021. Your **total household income** consists of the total amount of money earned by **all household members**.

- 1 Less than \$60,000
- 2 \$60,000 or more

S4int

In order to better understand the diversity of the Canadian population, as well as to help achieve greater equity and diversity in public health, we would like to ask you a few questions about your general background.

Please click the arrow below to continue.

S4

Which of the following best describes the racial or ethnic community that you belong to? We recognize this list of racial or ethnic identifiers may not exactly match how you would describe yourself.

Please select all that apply to you.

- 8 White European (Caucasian)
- 1 Black (African, Afro-Caribbean, African descent)
- 2 East/Southeast Asian (e.g. Chinese, Korean, Japanese, Taiwanese, Filipino, Vietnamese, Cambodian, Thai, Indonesian, other East/Southeast Asian descent)
- 3 Indigenous (First Nations, Métis and/or Inuk/Inuit)
- 4 Indigenous (from another part of the world)
- 5 Latino/Latina (e.g. Latin American, Hispanic descent)
- 6 Middle Eastern and North African (e.g. Arab, Algerian, Egyptian, West Asian descent (e.g. Iranian, Israeli, Lebanese, Turkish, Kurdish, etc.)
- 7 South Asian (e.g., Afghan, Indian, Pakistani, Bangladeshi, Sri Lankan, etc.)
- 9 Other, please specify: _____
- 8 Prefer not to answer
- 9 Don't know

S5 *Show if S4 Indigenous (S4_3 = 1)*

Do you identify as First Nations, Métis and/or Inuk (Inuit)?

Please select all that apply.

- 1 First Nations (includes status and non-status individuals)
- 2 Métis
- 3 Inuk (Inuit)
- 8 Prefer not to answer

S6a

So we can classify responses based on where people live, please enter the first three digits of your postal code.

Note that we cannot identify your address from this information since the first three digits of your postal code are not residence-specific.

- .8 Prefer not to answer
- .9 Don't know

S6

Do you live in an urban or rural or remote area?

An **urban area** is a city, town or village with a population of 1,000 people or more.

A **rural area** is defined as an area with less than 1,000 inhabitants and a population density less than 400 people per square kilometre. Rural areas can include:

- small towns, villages and other populated places with less than 1,000 population according to the current census
- rural areas of census metropolitan areas and census agglomerations that may contain estate lots, as well as agricultural, undeveloped and non-developable lands
- agricultural lands
- remote and wilderness areas.

- 1 Urban
- 2 Rural or remote
- .8 Prefer not to answer
- .9 Don't know

S7a *Show if S4 NOT Indigenous NOT (S4_3 = 1)*

Which group best defines your citizenship status in Canada?

- 1 Canadian citizen - Born in Canada
- 2 Canadian citizen - Born outside of Canada, and became Canadian citizen
- 3 Permanent resident or landed immigrant (including overseas refugees entering Canada)
- 4 Refugee claimant or asylum seeker (entered Canada under this category but do not have permanent residency status)
- 5 Temporary resident in Canada (e.g., international student, visitor, temporary foreign worker, but excluding current refugee claimants/asylum seekers)
- .8 Prefer not to answer
- .9 Don't know

S7b Show if S7a Canadian by naturalization OR Permanent resident (S7a = 2,3)

How many years have you lived in Canada for?

Minimum: 1, Maximum: 100

_____ years

- .8 Prefer not to say
- .9 Don't know

S8

Are you currently employed in any of the following sectors? Include paid and unpaid/volunteer work.

Select all that apply

- 1 Healthcare worker (e.g. physician, nurse, occupational or physical therapist, traditional healer, employees or staff who work, study, or volunteer in hospitals, long-term care, nursing home, and community settings)
- 2 Industry workers in factory settings (e.g., manufacturing; agriculture, forestry, fishing, food processing, warehousing)
- 3 Truck driver / delivery driver
- 4 Laboratory worker (e.g., people who work in a medical, research or industrial laboratory)
- 5 Child care or educational setting (e.g., school teacher, daycare worker)
- 6 Emergency services worker (e.g., police, fire fighter, EMT)
- 7 Worker in an institution (e.g., developmentally challenged or a correctional facility)
- 9 I don't work in any of the above sectors *(Exclusive)*
- .8 Prefer not to answer
- .9 Don't know

C12 Show if S4 Indigenous CDN (S4_3 = 1)

In general, how would you describe the quality of the public health care services available to you?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor

C20 Show if S4 Indigenous CDN (S4_3 = 1)

In general, how would you describe your **spiritual health**?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor
- 8 Prefer not to answer
- 9 Don't know

S9

Since March 2020, have you used any drugs (other than cannabis, tobacco and/or alcohol)?

Please consider any illegal drugs or any drugs that you have taken for reasons other than why they are recommended/prescribed (e.g., for the experience, the feeling they caused, to get high).

- 1 Yes
- 2 No
- 8 Prefer not to answer
- 9 Don't know

Section Section A: COVID-19 Vaccination

A1

How many doses of the Health Canada approved COVID-19 vaccines have you received?

Approved vaccines include: AstraZeneca Vaxzevria, Moderna Spikevax, Pfizer-BioNTech Comirnaty, Johnson & Johnson Janssen, Novavax Nuvaxovid, and Medicigo Covifenz.

- 0 None
- 1 1 dose
- 2 2 doses
- 3 3 doses
- 4 4 or more doses
- 8 Prefer not to answer
- 9 Don't know

A2 Show if A1 1 to 4 doses (A1 = 1,2,3,4)

Which approved COVID-19 vaccine(s) did you receive for...?

1. Dose 1 (Show if A1 1 to 4 doses (A1 = 1,2,3,4))
2. Dose 2 (Show if A1 2 to 4 doses (A1 = 2,3,4))
3. Dose 3 (Show if A1 3 to 4 doses (A1 = 3,4))
4. Dose 4 (Show if A1 4 or more doses (A1 = 4))

- 1 AstraZeneca Vaxzevria
- 2 Moderna Spikevax
- 3 Pfizer-BioNTech Comirnaty
- 4 Johnson & Johnson Janssen
- 5 Novavax Nuvaxovid
- 6 Medicago Covifenz
- 8 Prefer not to answer
- 9 Don't know

A3 Show if A1 1 to 4 doses (A1 = 1,2,3,4)

What were your reasons for receiving an approved COVID-19 vaccine?

Please select all that apply.

- 1 To protect myself or family or household members from infection *
- 2 Based on public health recommendations *
- 3 Because I am directly involved in the pandemic response in a healthcare setting (e.g., working in testing and assessments, emergency departments and delivery room, critical care units) *
- 4 It was required for my occupation *
- 5 To prevent the spread in my community *
- 6 To reduce the stress on the public health care system *
- 7 I am at risk for more severe outcomes from infection because of a health condition and/or disability *
- 8 The vaccine was recommended by a health care professional *
- 9 I was encouraged to get vaccinated by family members, colleagues or friends *
- 10 The vaccine was available and offered *
- 11 For travel purposes *
- 12 To help restore a more normal life (e.g., reduce social isolation, lift public health measures) *
- 13 Other, please specify _____
- 8 Prefer not to answer
- 9 Don't know

*Levels marked with * are randomized*

A4 Show if A1 Zero to 4 doses (A1 = 0,1,2,3,4)

What obstacles, if any, have prevented you from getting vaccinated against COVID-19?

Please select all that apply.

- 1 I have not encountered any obstacles *(Exclusive)*
- 2 Difficulty in booking time off work or school for a vaccine appointment *
- 3 Limited transportation *
- 4 Long distances to vaccination distribution sites * *(Show if S6a OR S6 Rural Remote ((custom: <<is_rural_fsa('S6a')>>) OR (S6 = 2)))*
- 5 Unable to navigate online appointment platform *
- 6 I don't know how or where to get an approved vaccine *
- 7 Limited or unreliable internet access or lack of technology equipment *
- 8 Lack of assistance with understanding information about vaccine safety and effectiveness * *(Show if Lower Education (S2 = 1,2))*
- 9 Information was difficult to understand * *(Show if Lower Education (S2 = 1,2))*
- 10 Language barriers (e.g., information not in my preferred language) *
- 11 Lack of vaccination locations that are welcoming and accessible * *(Show if S4 Indigenous CDN (S4_3 = 1))*
- 12 Limited access to Indigenous organizations that offer information or support * *(Show if S4 Indigenous CDN (S4_3 = 1))*
- 13 Experienced racism or discrimination within the public health care system when trying to acquire an a vaccine *
- 14 Other, please specify: _____
- 8 Prefer not to answer
- 9 Don't know

*Levels marked with * are randomized*

A5 Show if A1 Zero to 4 doses (A1 = 0,1,2,3,4)

(if A1 1 to 4 doses (A1 = 1,2,3,4)) **Were you ever hesitant to get vaccinated against COVID-19?**

Vaccine hesitancy refers to a reluctance or delay in acceptance or refusal of vaccines despite availability.

(if A1 None (A1 = 0)) **Are you or have you been hesitant to get vaccinated against COVID-19?**

Vaccine hesitancy refers to a reluctance or delay in acceptance or refusal of vaccines despite availability.

- 1 Yes, I am or was hesitant to accept an approved COVID-19 vaccine
- 2 No, I accepted the COVID-19 vaccine without any hesitation
- 8 Prefer not to answer
- 9 Don't know

A6 Show if A1 None AND A5 Yes Dont know OR Prefer not to answer ((A1 = 0) AND (A5 = 1, Prefer not to answer, Don't know))

For what reasons have you not received an approved vaccine against COVID-19?

Please select all that apply.

- 1 I recently was infected and believe I am adequately protected by natural immunity *
- 2 I feel/felt that the vaccine does not provide much protection, as you can still get COVID-19 even if vaccinated *
- 3 I don't think I am at risk of severe effects from infection *
- 4 I have concerns about the effectiveness of vaccines *
- 5 I have concerns about the safety of vaccines *
- 6 I have concerns about the possible side effects of vaccines *
- 7 I had a bad experience or reaction to previous vaccination (e.g., severe vaccine adverse effects like an anaphylactic reaction) *
- 8 I heard or read negative media (e.g., on social media, blogs, forums) about vaccines *
- 9 I did not know where to find true or reliable information about vaccines *
- 10 I have concerns about encountering racism or discrimination from the public health care system while acquiring a vaccine *
- 11 I have concerns about the frequency of injections and vaccine schedules *
- 12 Religious or spiritual reasons *
- 13 I am not aware of any Indigenous organizations that may offer more information on vaccinations * (Show if S4 Indigenous CDN (S4_3 = 1))
- 14 Other, please specify: _____
- 8 Prefer not to answer
- .9 Don't know

*Levels marked with * are randomized*

A7a Show if A1 None Dont know or Prefer not to answer (A1 = 0, Prefer not to answer, Don't know)

Do you plan to get vaccinated against COVID-19 in the future?

- 1 Yes
- 2 No
- 8 Prefer not to answer
- .9 Don't know

A7af Show if A7a No vaccination (A7a = 2)

Why do you not plan to get vaccinated in the future?

Please do not enter personally identifying information (e.g., name, email address, phone number, mailing address), as anything you enter may be shared with the sponsor of this research.

- .8 Prefer not to answer
 .9 Don't know

A7b Show if A1 1 dose AND A2 Moderna Pfizer or Astrazeneca ((A1 = 1) AND (A2_a = 1,2,3))

Do you plan to receive a second dose of the COVID-19 vaccine in the future?

- 1 Yes
 2 No
 .8 Prefer not to answer
 .9 Don't know

A7bf Show if A7b No 2nd dose (A7b = 2)

Why do you not plan to receive a 2nd dose in the future?

Please do not enter personally identifying information (e.g., name, email address, phone number, mailing address), as anything you enter may be shared with the sponsor of this research.

- .8 Prefer not to answer
 .9 Don't know

A7c Show if A1 2 or 3 doses OR A1 1 dose AND A2 Dose 1 JnJ ((A1 = 2,3) OR ((A1 = 1) AND (A2_a = 4)))

Do you plan to receive a booster (additional) dose of a COVID-19 vaccine in the future?

- 1 Yes
 2 No

- .8 Prefer not to answer
- .9 Don't know

A7cf Show if A7c No (A7c = 2)

Why do you not plan to receive a booster in the future?

Please do not enter personally identifying information (e.g., name, email address, phone number, mailing address), as anything you enter may be shared with the sponsor of this research.

- .8 Prefer not to answer
- .9 Don't know

A8 Show if A1 None Dont know or Prefer not to answer (A1 = 0, Prefer not to answer, Don't know)

During the **past 12 months**, how has your likelihood of getting vaccinated against COVID-19 changed **compared to the year before**?

- 1 I was **more likely** to get vaccinated against COVID-19
- 2 I was **less likely** to get vaccinated against COVID-19
- 3 There has been **no change** in my likelihood of getting vaccinated against COVID-19
- .8 Prefer not to answer
- .9 Don't know

A9 Show if A1 1 to 4 doses (A1 = 1,2,3,4)

During the **past 12 months**, how has your likelihood of getting vaccinated with additional dose(s) against COVID-19 changed **compared to the year before**?

- 1 I was **more likely** to get additional doses against COVID-19
- 2 I was **less likely** to get additional doses against COVID-19
- 3 There was **no change** in my likelihood of getting additional doses against COVID-19
- .8 Prefer not to answer
- .9 Don't know

A10 Show if S6a OR S6 Rural Remote ((custom: <<is_rural_fsa('S6a')>>) OR (S6 = 2))

How satisfied or dissatisfied are you with the availability of COVID-19 vaccines in your area?

- 1 Very satisfied
- 2 Somewhat satisfied
- 3 Neither satisfied nor dissatisfied
- 4 Somewhat dissatisfied
- 5 Very dissatisfied
- .8 Refused
- .9 Don't know

Section Section B: Knowledge, Attitudes, and Beliefs

B1

Which of the following sources of information would you be most likely to consult in order to find information on approved COVID-19 vaccines?

Please select up to three (3) of the provided sources in order of importance to you.

- _____ Health care workers (e.g., doctors, nurses) *
- _____ Family, friends or colleagues *
- _____ Medical associations (e.g., Canadian Public Health Association) *
- _____ My local public health clinic/Local Community Services Centre *
- _____ Ministry of Health within my province or territory *
- _____ Public Health Agency of Canada or Health Canada *
- _____ Social media (e.g., Facebook, Instagram, Twitter, TikTok, Snapchat) *
- _____ News or media sources (e.g., television, online (websites, blogs)) *
- _____ Community leaders (e.g., community advocates, community activists, academic institutions) *
- _____ Religious or spiritual leaders (e.g., Elders, imams, priests, rabbis) *
- _____ Indigenous organizations or Friendship Centres (e.g., First Nations Health Authority) * (Show if S4 Indigenous CDN (S4_3 = 1))
- _____ Politicians (e.g., municipal, provincial/territorial, federal) *
- _____ School officials (e.g., teachers, professors, educators) *
- _____ Scientific Journals *
- _____ National Advisory Committee on Immunization (NACI) *
- _____ International sources (e.g., World Health Organization (WHO), Centers for Disease Control and Prevention (CDC)) *
- _____ Other, please specify _____
- .8 Prefer not to answer
- .9 Don't know

Levels marked with * are randomized

B2

Canadians have many viewpoints on approved vaccines and their effectiveness or necessity. Please indicate whether, in your opinion, the following statements are true or false.

1. In general, vaccines are effective. *
2. In general, vaccines are safe. *
3. COVID-19 vaccines are safe. *
4. COVID-19 vaccines are effective. *
5. You cannot get a COVID-19 infection from a COVID-19 vaccine. *
6. The benefits of a COVID-19 vaccine outweigh the risk of any possible side effects. *
7. Vaccination is a safer way to build immunity against COVID-19 than contracting COVID-19. *
8. I believe that I need to be vaccinated against COVID-19 even if I previously acquired a COVID-19 infection. *
9. COVID-19 vaccines do not alter my DNA. *
10. Public health measures are an important strategy to prevent and/or reduce the spread of COVID-19 (e.g., physical distancing, wearing a mask). *
11. COVID-19 vaccination should be a requirement in school settings and/or any setting with a large group of people. *
12. I have access to enough trustworthy information about COVID-19 vaccines to make an informed decision. *
13. Additional/booster doses of a COVID-19 vaccine are important in order to stay protected against COVID-19. *

*Levels marked with * are randomized*

- ₁ True
- ₂ False
- ₋₈ Prefer not to answer
- ₋₉ Don't know

Section Section C: Sociodemographics

DemInt

Finally, we have some questions for statistical purposes. Your answers will remain completely anonymous.

Please click the arrow below to continue.

C1

What was your sex at birth?

- ₁ Male
- ₂ Female
- ₋₈ Prefer not to answer

C2

What is your gender?

Gender refers to your current gender which may be different from sex assigned at birth and may be different from what is indicated on legal documents.

- 1 Woman
- 2 Man
- 3 Non-binary
- 4 Transgender woman
- 5 Transgender man
- 6 Two-spirit
- 7 Another gender, please specify: _____
- 8 Prefer not to answer

C3

What is your province or territory of residence?

- 1 Alberta
- 2 British Columbia
- 3 Manitoba
- 4 New Brunswick
- 5 Newfoundland and Labrador
- 6 Nova Scotia
- 7 Ontario
- 8 Prince Edward Island
- 9 Quebec
- 10 Saskatchewan
- 11 Nunavut
- 12 Northwest Territories
- 13 Yukon

C4

Which of the following categories best describes your current employment status? Are you...

- 1 Employed full-time (working 35 or more hours per week)
- 2 Employed part-time (working less than 35 hours per week)
- 3 Student attending school full-time or part-time
- 5 Self-employed
- 4 Unemployed, but looking for work

- 6 Unemployed, but not looking for work
- 7 Retired
- 8 Other, please specify: _____
- 8 Prefer not to answer

S3b

Which of the following categories best describes your household income for the year ending December 31, 2021? Your **total household income** consists of the total amount of money earned by **all household members**.

- 1 Under \$20,000 *(Show if Lower Income (S3 = 1))*
- 2 \$20,000 to \$39,999 *(Show if Lower Income (S3 = 1))*
- 3 \$40,000 to \$59,999 *(Show if Lower Income (S3 = 1))*
- 4 \$60,000 to \$79,999 *(Show if S3 Not low income (S3 = 2))*
- 5 \$80,000 to \$99,999 *(Show if S3 Not low income (S3 = 2))*
- 6 \$100,000 to \$149,999 *(Show if S3 Not low income (S3 = 2))*
- 7 \$150,000 or more *(Show if S3 Not low income (S3 = 2))*
- 8 Prefer not to answer
- 9 Don't know

C5 *Show if S7a Canadian by naturalization OR Permanent resident (S7a = 2,3)*

In what country were you born?

Begin typing in the box to find the country, or scroll down and select the '+' to expand the categories and find the country.

- 167 __TREE_QUESTION__
- 1 Canada|Canada
- 2 USA|United States of America
- 3 Mexico|Mexico
- 4 Caribbean / Central America|Bahama Islands, The
- 5 Caribbean / Central America|Barbados
- 6 Caribbean / Central America|Cayman Islands
- 7 Caribbean / Central America|Costa Rica
- 8 Caribbean / Central America|Cuba
- 9 Caribbean / Central America|Dominica
- 10 Caribbean / Central America|Dominican Republic
- 11 Caribbean / Central America|El Salvador
- 12 Caribbean / Central America|Grenada
- 13 Caribbean / Central America|Guadeloupe
- 14 Caribbean / Central America|Guatemala
- 15 Caribbean / Central America|Haiti

- 16 Caribbean / Central America|Honduras
- 17 Caribbean / Central America|Jamaica
- 18 Caribbean / Central America|Martinique
- 19 Caribbean / Central America|Nicaragua
- 20 Caribbean / Central America|Panama, Republic of
- 21 Caribbean / Central America|Saint Lucia
- 22 Caribbean / Central America|St. Kitts-Nevis
- 23 Caribbean / Central America|St. Vincent and the Grenadines
- 24 Caribbean / Central America|Trinidad & Tobago, Republic of
- 25 Brazil|Brazil
- 26 Other South America|Argentina
- 27 Other South America|Bolivia
- 28 Other South America|Chile
- 29 Other South America|Colombia
- 30 Other South America|Ecuador
- 31 Other South America|Guyana
- 32 Other South America|Paraguay
- 33 Other South America|Peru
- 34 Other South America|Uruguay
- 35 Other South America|Venezuela
- 36 France|France
- 48 United Kingdom|England
- 54 United Kingdom|Northern Ireland
- 56 United Kingdom|Scotland
- 58 United Kingdom|Wales
- 37 East Europe|Belarus
- 38 East Europe|Bulgaria
- 39 East Europe|Czech Republic
- 40 East Europe|Hungary
- 41 East Europe|Moldova
- 42 East Europe|Poland
- 43 East Europe|Romania
- 44 East Europe|Russia
- 45 East Europe|Slovak Republic
- 46 East Europe|Ukraine
- 47 North Europe|Denmark
- 49 North Europe|Estonia
- 50 North Europe|Finland
- 51 North Europe|Ireland, Republic of
- 52 North Europe|Latvia
- 53 North Europe|Lithuania
- 55 North Europe|Norway
- 57 North Europe|Sweden
- 59 South Europe|Albania

- 60 South Europe|Bosnia-Hercegovina
- 61 South Europe|Croatia
- 62 South Europe|Gibraltar
- 63 South Europe|Greece
- 64 South Europe|Italy
- 65 South Europe|Kosovo, Republic of
- 66 South Europe|Macedonia, FYR
- 67 South Europe|Malta
- 68 South Europe|Montenegro, Republic of
- 69 South Europe|Portugal
- 70 South Europe|Serbia, Republic Of
- 71 South Europe|Spain
- 72 West Europe|Austria
- 73 West Europe|Belgium
- 74 West Europe|Germany, Federal Republic of
- 76 West Europe|Luxembourg
- 77 West Europe|Netherlands Antilles, The
- 78 West Europe|Netherlands, The
- 79 West Europe|Switzerland
- 80 North Africa|Algeria
- 81 North Africa|Egypt
- 82 North Africa|Libya
- 83 North Africa|Morocco
- 84 North Africa|Sudan, Democratic Republic of
- 85 North Africa|Tunisia
- 86 West Africa|Benin, Republic of
- 87 West Africa|Burkina-Faso
- 88 West Africa|Gambia
- 89 West Africa|Ghana
- 90 West Africa|Ivory Coast, Republic of
- 91 West Africa|Liberia
- 92 West Africa|Mali, Republic of
- 93 West Africa|Nigeria
- 94 West Africa|Senegal
- 95 West Africa|Sierra Leone
- 96 West Africa|Somali Republic
- 97 West Africa|South Africa, Republic Of
- 98 West Africa|Togo, Republic of
- 99 Other Africa|Angola
- 100 Other Africa|Burundi
- 101 Other Africa|Cameroon, Republic of
- 102 Other Africa|Chad, Republic of
- 103 Other Africa|Congo, Democratic Republic of
- 104 Other Africa|Djibouti, Republic of

- 105 Other Africa|Ethiopia
- 106 Other Africa|Gabon Republic
- 107 Other Africa|Guinea, Republic of
- 108 Other Africa|Kenya
- 109 Other Africa|Madagascar
- 110 Other Africa|Mauritius
- 111 Other Africa|Namibia
- 112 Other Africa|Reunion
- 113 Other Africa|Rwanda
- 114 Other Africa|Tanzania, United Republic Of
- 115 Other Africa|Uganda
- 116 Other Africa|Zambia
- 117 Other Africa|Zimbabwe
- 118 Central/South Asia|Afghanistan
- 119 Central/South Asia|Bangladesh
- 120 Central/South Asia|Bhutan
- 121 Central/South Asia|Kazakhstan
- 122 Central/South Asia|Kyrgyzstan
- 123 Central/South Asia|Nepal
- 124 Central/South Asia|Sri Lanka
- 125 Central/South Asia|Uzbekistan
- 126 India|India
- 127 Iran|Iran
- 128 East/South East Asia|Brunei
- 129 East/South East Asia|Hong Kong
- 130 East/South East Asia|Hong Kong SAR
- 131 East/South East Asia|Indonesia, Republic of
- 132 East/South East Asia|Japan
- 133 East/South East Asia|Macao SAR
- 134 East/South East Asia|Malaysia
- 135 East/South East Asia|Mongolia, People's Republic of
- 136 East/South East Asia|Singapore
- 137 East/South East Asia|Taiwan
- 138 East/South East Asia|Thailand
- 139 East/South East Asia|Vietnam, Socialist Republic of
- 141 China|China, People's Republic of
- 142 Korea|Korea, Republic Of (South)
- 143 Pakistan|Pakistan
- 144 Philippines|Philippines
- 145 West Asia|Armenia
- 146 West Asia|Azerbaijan
- 147 West Asia|Bahrain
- 148 West Asia|Georgia
- 149 West Asia|Iraq

- 150 West Asia|Israel
- 151 West Asia|Jordan
- 152 West Asia|Kuwait
- 153 West Asia|Lebanon
- 154 West Asia|Oman
- 155 West Asia|Palestinian Authority (Gaza/West Bank)
- 156 West Asia|Qatar
- 157 West Asia|Saudi Arabia
- 158 West Asia|Syria
- 159 West Asia|Turkey
- 160 West Asia|United Arab Emirates
- 161 West Asia|Yemen, Republic of
- 162 Oceania|Australia
- 163 Oceania|Fiji
- 164 Oceania|New Caledonia
- 165 Oceania|New Zealand
- 166 Other|Other (specify): _____
- 999 Prefer not to say

C6 Show if S7a Canadian by naturalization OR Permanent resident (S7a = 2,3)

How would you describe your sense of belonging to your local community?

- 1 Very weak
- 2 Somewhat weak
- 3 Somewhat strong
- 4 Very strong
- 8 Prefer not to answer
- 9 Don't know

C17

Which language do you primarily speak in your daily life?

Please select all that apply.

- 1 English
- 2 French
- 3 Indigenous language, please specify: _____
- 4 Other language
- 8 Prefer not to answer

C8 Show if Health Care Workers (S8_1 = 1)

What type of health care worker are you? Include paid and unpaid/volunteer work.

Please select all that apply

- 1 Physician (e.g., family physician/general practitioner (GP), specialist physician)
- 2 Nurse (RN, LPN, or RN) or nurse practitioner at a hospital or clinic
- 3 Other hospital staff
- 4 Physician at a long-term care facility
- 5 Long-term care or home care nurse
- 6 Personal support worker at a long-term care facility or home care
- 7 Group home worker
- 8 Other
- 8 Prefer not to answer
- .9 Don't know

C9 Show if S8 Industry Workers AND C4 NOT Unemployed Retired ((S8_2 = 1) AND (C4 = 1,2,3,5,8))

What type of industry are you working in?

- 1 Agriculture, forestry, fishing and hunting
- 2 Construction
- 3 Manufacturing
- 4 Mining, quarrying and oil or gas extraction
- 5 Utilities
- 6 Warehousing
- 7 Transportation (excluding truck transportation)
- 8 Other
- 8 Prefer not to answer

C11 Show if S8 Healthcare Industry or Transportation (S8_1 = 1 OR S8_2 = 1 OR S8_3 = 1)

Do you work in a setting where physical distancing is difficult to achieve (e.g., you are in contact with people with **less than 2 meters or 6 feet** of distance)?

- 1 Yes
- 2 No
- 8 Prefer not to answer
- .9 Don't know

TrigInt *Show if Urban Indigenous Recent immigrant OR Visible Minority ((S7b between 1 and 9) OR (S4_3 = 1) OR (S4_1 = 1 OR S4_2 = 1 OR S4_3 = 1 OR S4_4 = 1 OR S4_5 = 1 OR S4_6 = 1 OR S4_7 = 1))*

The next two questions may be triggering to some people. If you would like to skip these questions, please click "skip". For information on support services available to you, please click here[[The [First Peoples Wellness Circle \(FPWC\)](https://fpwc.ca/) (<https://fpwc.ca/>) is a national not-for-profit corporation governed and managed by Indigenous Leaders and exists to improve the lives of Canada's First Peoples by addressing healing, wellness and other mental health challenges. Call 1-833-311-FPWC (3792)

Hope for Wellness Helpline is available 24/7 to all Indigenous people across Canada. Telephone and online counselling are available in English and French. Additional languages can be requested. Call the toll-free Help Line: 1-855-242-3310 or connect to the online chat at [hopeforwellness.ca](https://www.hopeforwellness.ca) (<https://www.hopeforwellness.ca/>)).

- 2 Continue
- 1 Skip

C15 *Show if TrigInt Continue (TrigInt = 2)*

Have you encountered any instances of racism, discrimination **at any time, since March 2020?**

- 1 Yes
- 2 No
- 8 Prefer not to answer
- 9 Don't know

C16 *Show if C15 Yes (C15 = 1)*

Where did the racism or discrimination occur?

Please select all that apply

- 1 At home
- 2 At my workplace
- 3 At school
- 4 In a healthcare setting (e.g., hospital, clinic, care facility)
- 5 In a public service setting or at a government agency
- 6 In a social setting
- 7 Other, please specify: _____
- 8 Prefer not to answer
- 9 Don't know

C21 Show if Drug User (S9 = 1)

We would like to learn more about your drug use since the start of the COVID-19 pandemic. Have you used any of the drugs listed below, at any time, **since March 2020**?

Please consider any illegal drugs or any drugs that you have taken for reasons other than why they are recommended/prescribed (e.g., for the experience, the feeling they caused, to get high). Please select all that apply.

- 1 Illegal stimulants (e.g., cocaine, crack, methamphetamine, ecstasy or MDMA)
- 2 Illegal opioids (e.g., heroin, non-pharmaceutical fentanyl)
- 3 Illegal hallucinogens/dissociatives (LSD, psilocybin, PCP, magic mushrooms mescaline, ketamine, DXM, angel dust)
- 4 Prescription opioids (Oxycodone, Dilaudid®, morphine, codeine, Demerol, Tylenol #3®)
- 5 Prescription stimulants – ADHD medications (Ritalin®, Concerta®, Adderall®, Dexedrine®)
- 6 Prescription sedatives/tranquilizers (e.g., diazepam (Valium®), lorazepam (Ativan®), alprazolam (Xanax®), clonazepam (Rivotril®))
- 7 Other, please specify _____
- 8 I do not use illegal drugs / abuse prescription medications (Exclusive)
- 8 Prefer not to answer
- 9 Don't know

C22 Show if C21 Any Drug (C21_1 = 1 OR C21_2 = 1 OR C21_3 = 1 OR C21_4 = 1 OR C21_5 = 1 OR C21_6 = 1 OR C21_7 = 1)

Are you **currently** using any of these drugs?

Please select all that apply.

- 1 Illegal stimulants (e.g., cocaine, crack, methamphetamine, ecstasy or MDMA) (Show if C21 1 Illegal stimulants (C21_1 = 1))
- 2 Illegal opioids (e.g., heroin, non-pharmaceutical fentanyl) (Show if C21 2 Illegal opioids (C21_2 = 1))
- 3 Illegal hallucinogens/dissociatives (LSD, psilocybin, PCP, magic mushrooms mescaline, ketamine, DXM, angel dust) (Show if C21 3 Illegal hallucinogens (C21_3 = 1))
- 4 Prescription opioids (Oxycodone, Dilaudid®, morphine, codeine, Demerol, Tylenol #3®) (Show if C21 4 Prescription opioids (C21_4 = 1))
- 5 Prescription stimulants – ADHD medications (Ritalin®, Concerta®, Adderall®, Dexedrine®) (Show if C21 5 Prescription stimulants (C21_5 = 1))
- 6 Prescription sedatives/tranquilizers (e.g., diazepam (Valium®), lorazepam (Ativan®), alprazolam (Xanax®), clonazepam (Rivotril®)) (Show if C21 6 Prescription sedatives (C21_6 = 1))
- 7 <<C21.specify(7)>> (Show if C21 7 Other (C21_7 = 1))
- 8 I'm not currently using any of these drugs (Exclusive)
- 8 Prefer not to answer

C23 Show if C22 Any Drug (C22_1 = 1 OR C22_2 = 1 OR C22_3 = 1 OR C22_4 = 1 OR C22_5 = 1 OR C22_6 = 1 OR C22_7 = 1)

Since the COVID-19 pandemic, which began in March 2020, how has your overall drug use changed?

1. Illegal stimulants (e.g., cocaine, crack, methamphetamine, ecstasy or MDMA) *(Show if C22 1 Illegal stimulants (C22_1 = 1))*
 2. Illegal opioids (e.g., heroin, non-pharmaceutical fentanyl) *(Show if C22 2 Illegal opioids (C22_2 = 1))*
 3. Illegal hallucinogens/dissociatives (LSD, psilocybin, PCP, magic mushrooms, mescaline, ketamine, DXM, angel dust) *(Show if C22 3 Illegal hallucinogens (C22_3 = 1))*
 4. Prescription opioids (Oxycodone, Dilaudid®, morphine, codeine, Demerol, Tylenol #3®) *(Show if C22 4 Prescription opioids (C22_4 = 1))*
 5. Prescription stimulants – ADHD medications (Ritalin®, Concerta®, Adderall®, Dexedrine®) *(Show if C22 5 Prescription stimulants (C22_5 = 1))*
 6. Prescription sedatives/tranquilizers (e.g., diazepam (Valium®), lorazepam (Ativan®), alprazolam (Xanax®), clonazepam (Rivotril®)) *(Show if C22 6 Prescription sedatives (C22_6 = 1))*
 7. <<C21.specify(7)>> *(Show if C22 7 Other (C22_7 = 1))*
- 1 I consumed more
- 2 I consumed less
- 3 I consumed the same amount
- 4 I stopped using
- 5 I started using
- 8 Prefer not to answer
- 9 Don't know

Section Recruit End

EndTCH

(if S4 Indigenous CDN (S4_3 = 1))

This is the end of the survey. On behalf of the Public Health Agency of Canada, we would like to thank you for your participation. Your responses will provide valuable and insightful information about COVID-19 immunization in urban Indigenous and away from home communities across Canada.

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(if Default)

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Status Code: -1