

Canadian Guidance on Addressing Vaccine Hesitancy to Help Foster Vaccine Demand and Acceptance

Section 3. Strategies to Detect Vaccine Hesitancy

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Building Resilient Pro-Vaccine Communities



Building the capacity to improve vaccine acceptance and uptake

The Canadian Vaccination Evidence Resource and Exchange Centre (CANVax) is an online database of curated resources to support immunization program planning and promotional activities to improve vaccine acceptance and uptake in Canada. As an online resource centre, CANVax aims to increase access to evidence-based products, resources, and tools to inform public health professionals in immunization program planning and promotion.

CANVax has been developed by the Canadian Public Health Association. Production of CANVax has been made possible through funding from the Public Health Agency of Canada. The views expressed herein do not necessarily represent the view of the Public Health Agency of Canada.

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PREFACE

This document was adapted from the **Western Pacific Regional Guidance on Addressing Vaccine Hesitancy to Help Foster Vaccine Demand** document, drafted in 2017 in response to the recommendation at the meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine-Preventable Diseases in the Western Pacific Region (WPR), in July 2016.

Purpose and Specific Objectives of the Guidance as per WPR

The main purpose of the regional guideline on vaccine hesitancy is to help Member States to:

1. Identify the extent of vaccine hesitancy in the country.
2. Identify vaccine-hesitant population subgroups.
3. Diagnose the demand- and supply-side immunization barriers and enablers.
4. Design evidence-informed strategies to address hesitancy appropriate for the subgroup setting, context and vaccine.
5. Receive and provide support for regional coordination to successfully address vaccine hesitancy in the country.

The initial WPR draft, including the two Aide Memoires, was written by Noni E MacDonald, Dalhousie University, Halifax Canada, with input from Eve Dubé, Institut national de santé publique du Québec, Québec, Canada, Lisa Menning and Melanie Marti, Immunization, Vaccines and Biologicals, World Health Organization (WHO), Geneva, Switzerland and Sarah Long, Dalhousie University.

Canadian Guidance

The WPR document was then re-crafted by Noni E MacDonald and Eve Dubé to address the Canadian context, and sections were updated.

Each section has been written to integrate with the other sections but also to be able to stand alone. The main emphasis is on the diagnosis of hesitancy and focuses on interventions that can increase vaccine uptake at the program and individual levels.

For the full report of the Canadian Guidance on Addressing Vaccine Hesitancy to Help Foster Vaccine Demand and Acceptance, please visit <https://canvax.ca/canadian-guidance-addressing-vaccine-hesitancy-help-foster-vaccine-demand-and-acceptance-full>.

Resistance to vaccination is as old as vaccination itself – people have been reluctant to accept vaccination since Edward Jenner first scraped cowpox blisters and inoculated people in the early 1800s. However, even in the time of Jenner, concern about vaccines was not uniform across a country, or within one area, or between ethnic groups within a country. Assessing whether hesitancy is present in a population to any significant degree and differentiating hesitancy from other reasons why children/adults are unvaccinated or under-vaccinated is essential for the selection of interventions needed to address lower-than-expected vaccine uptake.

Canada has been fortunate not to see the sharp and steep dips in vaccine acceptance for a specific vaccine that have been seen in several other high-income countries when vaccine scares have garnered much attention. However, periodic anti-HPV media stories have undermined efforts to build strong trust in the HPV vaccine. HPV vaccine acceptance rates are not uniformly over 90% across Canada. In Denmark, concerns about HPV vaccine safety fuelled by major media coverage led to a sudden sharp and prolonged decrease in HPV acceptance: from 90% acceptance to under 40% ([Denmark campaign rebuilds confidence in HPV vaccination](#)).¹ The rise in concerns increased the pressure to suspend the HPV vaccine. Any decision to suspend a vaccine program because of a cluster of serious AEFI, even if these are deaths, is rarely indicated as problems with the vaccine manufacturing are exceedingly rare and death due to vaccine itself almost never occurs (estimated rate of fatal anaphylaxis: 1 in 10,000,000).² A program error (e.g., [Syria 2014](#), where there was an error in diluent used to prepare MR vaccine),³ anxiety-related stress reaction clusters⁴ or coincidental events are far more likely to be the cause in such clusters – not the vaccine itself.

Detection of Hesitancy – Non-Crisis Setting

Monitoring a Population for the Presence of Hesitancy

Knowing that vaccine acceptance is not reaching program targets suggests vaccine hesitancy may be present in a country or sub group within the country. However, supply-side issues may also contribute to lower-than-desired rates, not just hesitancy. As noted in a national survey in Canada by Dubé and colleagues, parents who had experienced vaccine access problems were less likely to be strongly positive about intending to vaccinate their child in the future.⁵ Given that acceptance of vaccination is an outcome behaviour that results from a complex decision-making process that can be potentially influenced by a wide range of factors (see [Section 1 – Vaccine Hesitancy and Vaccine Demand: Table 1.2](#)), lower-than-expected uptake rates among any subgroup in any regions in Canada need to be thoughtfully assessed and addressed. Access problems (i.e. constraints) as well as complacency – not just confidence issues – must be considered.

Step 1: Determine if hesitancy is present, to what degree, where and whom

Different strategies are possible to assess hesitancy across a country, such as periodic surveys, systematic ongoing clinic/hospital/practice surveys, selected subgroup, surveys, etc. The Report of the SAGE Working Group on Vaccine Hesitancy provides potential survey questions⁶ (see Section 5B: Table 2 pages 28-30), some of which have been validated in the field⁷⁻⁸ including in Canada, albeit only in English and in French.⁹ These cover a range of areas set out in three tables including contextual influences, individual and group Influences, and vaccine- and vaccination-specific issues.⁶ The questions that cover the topics in the Vaccine Hesitancy Matrix are also used to classify the responses to the vaccine hesitancy indicator questions in the JRF survey reports from 2014 onwards, and cover the areas of confidence, complacency and constraints in the 3Cs model as well.⁶

When using these questions, two points must be kept in mind:

1. This is not an exhaustive list; a province or territory may have other questions that are pertinent to their context and /or culture.
2. If all questions in the tables were included, the survey would be so lengthy that completion rates would be jeopardized.

Hence, the provinces and territories need to see these questions as a menu, from which pertinent questions relevant to their needs – the context, the vaccine(s) in question, the age group in question and the population being surveyed – are selected. Region- or subgroup-specific questions can then be added. Final questions must respect the local language(s) and the comprehension level of the target audience.

Step 2: Mapping and Tracking Vaccine Hesitancy Survey Findings

Given that many factors can contribute to lower-than-expected vaccine acceptance including hesitancy, immunization programs need to assess – not guess – whether hesitancy is present, establish where higher rates of hesitancy are occurring, and then determine the reasons for hesitancy. Mapping survey findings with the coverage rates across a population can help pinpoint where pockets of hesitancy are more prevalent. However, in reviewing these data, one must have an open mind, as a hesitant group may not be geographically located but may be tied by factors such as social networks, religious links, ethnic backgrounds, etc. Mapping the reasons for hesitancy can also show diversity and similarities of hesitancy concerns across a population.

Quality vaccine coverage data must be available in order for mapping to be helpful. This is not simple in Canada, as [coverage is estimated from regular surveys](#),¹⁰ and not from an immunization registry data, as these registries do not exist across the country. These vaccine uptake surveys are done by Statistics Canada but only in English and French,¹¹⁻¹² and hence may over- or underestimate uptake rates due to missing pockets of the population who cannot, or choose not to, participate.

Timely identification of clusters of unimmunized individuals may only be possible in some regions when an outbreak occurs. Vaccine hesitancy surveys may help highlight these risk clusters in advance, but since many surveys involve relatively small samples sizes, underimmunized pockets may not be detected. A 2012 Ontario review of vaccine exemptions for school entry clearly illustrates the hesitancy diversity across the province both in time and locales.¹³ While this study was not able to determine the factors underlying the choice of opting out of the school immunization program, it did show that opting out was not uniform even within a sub-region of the province. Vaccine hesitancy surveys can determine the underlying reason(s). Tracking changes in survey responses over time can help detect shifts in hesitancy factors and show whether strategies for addressing hesitancy have been effective or need to evolve because concerns have shifted.

Sharing vaccine hesitancy survey instruments, findings and experiences within Canada could help to validate the instruments, and encourage provinces and territories to develop survey instruments to fit their needs.

The WHO Regional Office of Europe’s document Tailoring Immunization Programmes emphasizes these points in [Section 4 – Recognize and Diagnose Underlying Factors in Refusal or Delay in Vaccine Acceptance](#).

Monitoring for the Presence of Hesitancy at the Individual Level

At the frontline, in clinics and practices, the most promising tool to measure vaccine hesitancy at the individual level is the Parent Attitudes about Childhood Vaccines survey developed by Opel et al. in the United States.¹⁴ The 15-item survey instrument, which can be completed in less than 5 minutes, measures the level of vaccine hesitancy among parents of infants and predicts their vaccination decision at 2 months. Four domains linked to vaccine hesitancy – vaccination behaviour, beliefs about vaccine safety and efficacy, attitudes about vaccine mandates and exemptions, and trust – are included (see Table 3.1).

Table 3.1 Parent Attitudes about Childhood Vaccines Questions¹⁴

Parent Attitudes about Childhood Vaccines Survey Item		
1	Have you ever delayed having your child get a shot for reasons other than illness or allergy?	Yes /No /Don't Know
2	Have you ever decided not to have your child get a shot for reasons other than illness or allergy?	
3	How sure are you that following the recommended shot schedule is a good idea for your child?	0-10 scale
4	Children get more shots than are good for them.	Strongly agree- strongly disagree
5	I believe that many of the illnesses that shots prevent are severe.	
6	It is better for my child to develop immunity by getting sick than to get a shot.	
7	It is better for children to get fewer vaccines at the same time	
8	How concerned are you that your child might have a serious side effect from a shot?	Not at all concerned – very concerned
9	How concerned are you that a shot might not prevent the disease?	
10	How concerned are you that any one of the childhood shots might not be safe?	
11	If you had another infant today, would you want him/her to get all the recommended shots?	Yes /No /Don't Know
12	Overall, how hesitant about childhood shots would you consider yourself to be?	Not at all hesitant – very hesitant
13	I trust the information I receive about shots.	Strongly agree- strongly disagree
14	I am able to openly discuss my concerns about shots with my child's doctor.	
15	All things considered, how much do you trust your child's doctor?	0-10 scale

This tool has been shown to be a reliable in the US in identifying vaccine-hesitant parents and in predicting under-immunization by two years of age. However, the evidence is mixed on the tool's value in other age groups, such as adolescents. How well the tool would work in different populations in Canada is unknown, but the tool has been distributed to investigators, clinicians, and public health experts in 7 countries, including Canada, as well as Malaysia, Philippines, Singapore, India, the United Kingdom, and Croatia. The tool did prove reliable when tested in the Malaysian capital among parents attending paediatric or antenatal clinics at a major teaching hospital.¹⁵ Given that Malaysia is a modestly ethnically diverse country, this may increase the interest for use in clinics and offices in Canada. A shorter version of the tool, 5 items, has also been developed.¹⁶

Another more recent tool, the Vaccination Confidence Scale, measures three factors (benefits of vaccination, harms of vaccination, and trust in health care providers), and shows promise for identifying parents at risk of refusing adolescent vaccines¹⁷ (see Table 3.2).

Table 3.2 Gilkey et al. Vaccine Confidence Scale for Adolescent Vaccine Acceptance¹⁷

Benefits	Harms	Trust
<ul style="list-style-type: none"> • Vaccines are necessary to protect the health of teenagers • Vaccines do a good job in preventing the diseases they are intended to prevent • Vaccines are safe • If you do not vaccinate your teenager, he/she may get a disease such as meningitis and cause other teens or adults to get the disease also 	<ul style="list-style-type: none"> • Teenagers receive too many vaccines • If I vaccinate my teenager, he/she may have serious side effects 	<ul style="list-style-type: none"> • In general, medical professionals in charge of vaccinations have my teenager's best interests at heart • I have a good relationship with my teenager's health provider

Gaps in Vaccine Hesitancy Survey Tools

In Canada, while Shapiro and colleagues have shown the SAGE Vaccine Hesitancy Survey tool to be valid, this was only for French- or English-speaking populations.⁹ More work is needed to validate this tool in more diverse segments of the population. It would also be helpful to learn which questions work better in which settings to identify hesitancy factors. As these tools to assess hesitancy at the individual level in practice settings have predominately been used in the US, how well they work in clinics and offices across Canada to detect hesitancy needs to be determined.

A major gap in hesitancy survey tools is a lack of well-tested assessment tools for detecting and assessing hesitancy in adults, including pregnant women and seniors.

The most commonly used approach to assess vaccine hesitancy in Canada and elsewhere is population-based surveys, but given the complexity of vaccine hesitancy, other approaches can be useful (e.g., qualitative methods such as interviews or focus groups) in having a more in-depth understanding of the issues, surveys or interviews with healthcare providers to obtain their opinion on vaccine hesitancy challenges, and social media and traditional media monitoring of vaccine-related concerns (see [Section 8 – Strategies to support Vaccination Demand and Grow Resiliency](#)). More work is needed in this area.

KEY POINTS

- Determining if and where vaccine hesitancy is occurring in a population is important for immunization program decisions.
- At the program level, population surveys, mapping of vaccine uptake and other tools can help detect areas of hesitancy.
- At the individual level, the most frequently used tool is the Parent Attitudes about Childhood Vaccines, a survey developed in the United States.

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