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Increasing Routine Immunization Coverage Following the COVID-19 Pandemic

Perspectives from Ontario's Public Health Units

Immunization Coverage Evaluation – Final Report

November 2025

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How to cite this document:

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Increasing routine immunization coverage following the COVID-19 pandemic: perspectives from Ontario's public health units. Toronto, ON: King's Printer for Ontario; 2025.

ISBN: 978-1-4868-9465-9

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Acknowledgements

The authors wish to express their sincere appreciation for the public health units who participated in this project. We would specifically like to thank Karen Beckermann and Dr. Vinita Dubey from Toronto Public Health, Brian Larkin and Fairleigh Seaton from Southeast Public Health, and Shannon Brown from Northwestern Health Unit for collaborating this project and providing subject matter expertise on Ontario's immunization programs.

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Executive Summary

The COVID-19 pandemic resulted in significant disruptions to immunization delivery in Ontario,[1-4] as elsewhere globally.[5,6] During the COVID-19 pandemic, all public health units (PHUs) across Ontario temporarily halted their routine immunization program activities to support the global pandemic response. These activities included assessing, reporting, and enforcing Ontario students' immunization status under the *Immunization of School Pupils Act* (ISPA) and delivering school-based immunization programs. Most PHUs did not resume their regular ISPA activities, including enforcement, until the 2023–24 or even 2024–25 school years. Many are still trying to get through the backlog of missed cohorts during the pandemic and reach, or surpass, their pre-pandemic immunization coverage levels. School-based immunization programs returned more quickly than ISPA activities once students returned to in-person classes, but many students still missed out on receiving school-based vaccines during the pandemic-impacted school years.

To address these pandemic impacts, PHUs across Ontario have adopted many practical strategies to increase immunization coverage following the COVID-19 pandemic, including enhanced immunization services and ISPA processes, improved access to immunization services, catch-up immunization programs, and extended eligibility for certain vaccines and cohorts. Despite these strategies and catch-up efforts, reported immunization coverage remains below pre-pandemic levels province wide as of the 2023–24 school year.[7] Due to multiple, intersecting factors and competing priorities, PHUs vary in their capacity to deliver immunization programs and perform ISPA activities, contributing to variability in reported immunization coverage across the province. Some PHUs have been better able to achieve or maintain high immunization coverage following the COVID-19 pandemic, while others have varying levels of reported coverage across different vaccines, programs, and cohorts in the post-pandemic era.[7]

Project Overview

This project, known as the **Immunization Coverage Evaluation**, is a mixed-methods project that aimed to explain heterogeneity in immunization coverage across PHUs in Ontario following the COVID-19 pandemic. In March and April 2025, we conducted 11 interviews and focus groups with 67 subject matter experts, representing 28 out of the 29 PHUs across Ontario. Each participating PHU also completed a pre-session online survey about their immunization programs and catch-up activities during the 2024–25 school year. Our objective was to gain a broader understanding of PHU-led immunization program activities, including ISPA assessment and enforcement and delivery of school-based immunization programs, across Ontario. We also sought to understand the barriers and facilitators that influenced reported immunization coverage during the COVID-19 pandemic and recovery periods.

Report Overview

This report is organized into three sections:

1. Impacts: We describe the impacts of the COVID-19 pandemic on public health immunization program activities and catch-up efforts in Ontario.
2. Perceptions: We characterize PHUs' barriers and facilitators to performing or maintaining immunization program activities in Ontario following the COVID-19 pandemic.
3. Strategies: We identify best practices used across Ontario's PHUs and offer solutions to inform ongoing COVID-19 pandemic recovery efforts.

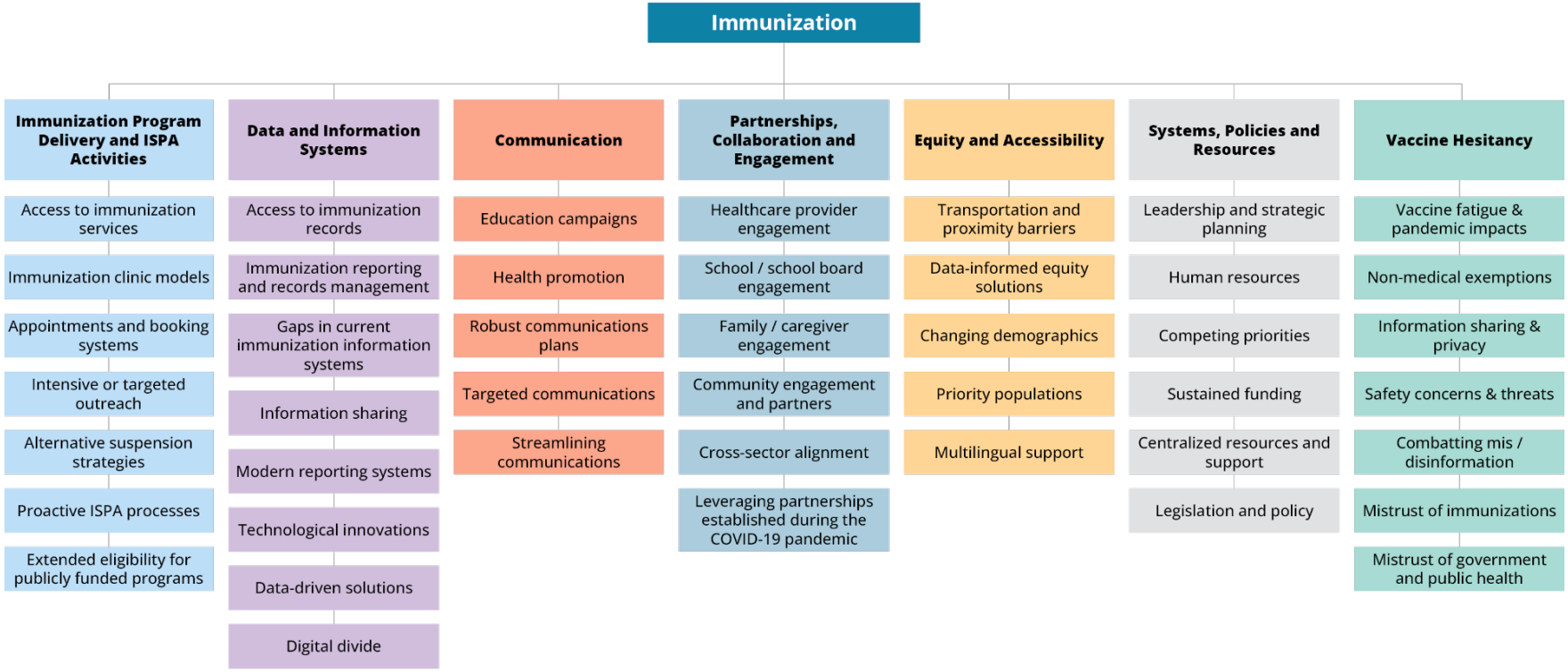
Report Highlights

- Although some PHUs felt that their immunization program activities had returned to a "new normal," we heard that many PHUs are still trying to catch-up and get their immunization programs back on track following the COVID-19 pandemic.
- Much of the variability in provincial immunization coverage estimates can be attributed to PHUs' abilities to fully enforce ISPA for all grades or cohorts in the post-pandemic era, as well as catch-up ISPA assessments for those cohorts that may have been missed during the pandemic.
- Participants spoke about the daily challenges they encounter with their immunization programs, along with the broader issues facing Ontario's immunization programs today, such as increasing vaccine hesitancy and widening health inequities.
- Figure 1 summaries the key themes that emerged during the interviews and focus groups:
    - Immunization Program Delivery and ISPA Activities: How immunization services and ISPA and catch-up programs are delivered and structured and ways to improve programming.
    - Data and Information Systems: How data are collected and shared, data quality issues and system functionality, including automation and technological innovations.
    - Communication: How information about vaccinations and ISPA processes are communicated to healthcare providers, schools and the public.
    - Partnerships, Collaboration and Engagement: Relationships and engagement with healthcare providers, schools and the public that facilitate immunization program delivery and uptake.
    - Equity and Accessibility: Ways to reach and support individuals or communities with low immunization coverage and/or experiencing greater barriers to accessing services.
    - Systems, Policies and Resources: The financial, legal and structural enablers and constraints to achieving high immunization coverage.
    - Vaccine Hesitancy: Vaccine hesitancy, vaccine safety and the public discourse on these topics.

Ways Forward

- We heard about the considerable progress that PHUs have made with their immunization programs following the COVID-19 pandemic, including practical strategies to improve reported immunization coverage and incorporate lessons learned from the COVID-19 pandemic.
- Despite these strategies to get public health immunization programs back on track following the COVID-19 pandemic, further efforts are needed to achieve, or even surpass, local or national immunization coverage or programmatic goals in the post-pandemic era in Ontario.
- Looking forward, the future of Ontario's PHU-led immunization programs will depend on:
    - Improved provincial collaboration and coordination across PHUs, including shared resources and materials and an ISPA community of practice.
    - Technological innovations that modernize Ontario's immunization information systems and improve data sharing, including a provincial immunization registry.
    - Coordinated efforts to address rising vaccine hesitancy and misinformation and equity-informed solutions to ensure barrier-free access to immunization services.
    - Dedicated and sustained funding and infrastructure to support provincial immunization programs and ongoing catch-up efforts.
    - Continued prioritization of immunizations as a core public health standard and incorporation of immunization priorities into local and provincial strategic plans.

Figure 1: Key Themes that Emerged During the Focus Groups and Interviews



Glossary

Assessment: The process of PHUs assessing students' immunization status under the ISPA.

Child Care and Early Years Act (CCEYA): The provincial legislation requiring childcare operators to collect immunization records for children attending licensed childcare centres.

Coverage: An estimate of vaccine uptake based on monitoring immunizations reported to public health within a specific population or geographic region; typically reported as a proportion.

Enforcement: The process of enforcing the ISPA, including issuing suspension orders to students who are overdue for vaccination against ISPA-designated diseases.

Exemption: The documentation of a valid medical or non-medical (conscientious or religious) reason why a student is not immunized against ISPA-designated diseases.

Immunization Connect Ontario (ICON): An online portal for parents and guardians to report their child's immunization record to public health; implemented by some, but not all, PHUs in Ontario.

Immunization of School Pupils Act (ISPA): The provincial legislation requiring the PHU's Medical Officer of Health to assess, maintain records, and report on the immunization status of children attending schools in their jurisdiction against nine designated diseases.

Medical Officer of Health (MOH): A physician, typically with a specialty in Public Health and Preventive Medicine, responsible for overseeing public health programs and services within their PHU, including ISPA assessment and enforcement.

Non-compliant: A student who is considered overdue (i.e., not up to date) for vaccination against ISPA-designated diseases and does not have a valid medical or non-medical exemption on file.

Panorama: The provincial data system for collecting and maintaining immunization records.

Public health unit (PHU): A local government organization responsible for the delivery of public health information, programs and services within a geographic region or municipality; following recent mergers in January 2025, there are 29 PHUs across Ontario.

School-based immunization programs: The PHU-led delivery of hepatitis B, human papillomavirus and meningococcal vaccines at school-based clinics; typically administered to grade 7 students in Ontario.

Suspension: The act of suspending a student from school if they are overdue for vaccination against ISPA-designated diseases; under the ISPA, students may be suspended for up to 20 days if they are non-compliant.

Contents

Introduction

In Ontario, primary care providers (including family doctors, pediatricians, nurse practitioners, and nurses) administer most routine infant and childhood immunizations. Medical Officers of Health within each public health unit (PHU) have the authority to collect immunization records and assess the immunization status of students attending schools within their jurisdiction for designated vaccine-preventable diseases under the *Immunization of School Pupils Act* (ISPA).[8] Under the ISPA, parents and guardians are responsible for reporting their child's immunization record to public health, typically at school entry or when ISPA assessments are conducted. These data are recorded in Panorama, a web-based interface to Ontario's digital immunization repository. Students who have not been immunized against ISPA-designated diseases or provided a valid medical or non-medical (conscientious or religious) exemption are at risk of school suspension. The *Child Care and Early Years Act* (CCEYA) requires licensed childcare operators to collect immunization records for infants and children enrolled at their centres. PHUs also administer school-based immunization clinics for grade 7 to 12 students under Ontario's publicly funded immunization schedule.[9]

Ontario PHUs vary in their implementation of ISPA and CCEYA, contributing to variability in reported immunization coverage estimates across PHUs, especially following the COVID-19 pandemic. Several local PHUs recently completed a process evaluation of ISPA, which proposed strategies to improve the efficiency and effectiveness of Ontario's ISPA programs.[10] Although time consuming and resource intensive, these activities are critical to maintaining and achieving high immunization coverage.[10,11] High coverage is necessary to prevent outbreaks of vaccine-preventable disease, achieve and maintain elimination status for certain diseases such as measles, and reach national immunization coverage goals.[12,13] Ontario recently experienced its largest measles outbreak in decades, with over 2,300 cases reported from October 2024 to October 2025, with the majority occurring in unimmunized persons.[14]

Immunization Coverage After the COVID-19 Pandemic

The COVID-19 pandemic resulted in significant disruptions to ISPA assessment and enforcement and immunization program delivery in Ontario.[1-4] During the COVID-19 pandemic, the Ministry of Health introduced guidance for routine and catch-up immunization programs with expanded eligibility for certain publicly funded vaccines and birth cohorts to mitigate the impacts of missed or delayed vaccines.[15] Despite this expansion, province-wide immunization coverage estimates remain below pre-pandemic levels as of the 2023–24 school year, with considerable heterogeneity across PHUs.[7] For example, reported PHU-level coverage of measles vaccine among 7-year-olds in 2023–24 ranged from 24.6% to 96.5%.[7] It remains unclear to what extent these current gaps in coverage represent a true decrease in vaccine uptake or under-reporting or delayed reporting of administered vaccines following the COVID-19 pandemic.[16] This project was undertaken to better understand the COVID-19 pandemic's impacts on immunization coverage in Ontario and inform its ongoing pandemic recovery efforts.

Aims & Scope

This project, known as the **Immunization Coverage Evaluation**, aimed to explain heterogeneity in immunization coverage across PHUs in Ontario following the COVID-19 pandemic. We sought to gain a broader understanding of public health immunization program and catch-up activities across Ontario's PHUs. This report focuses on PHU-led immunization program activities, including ISPA assessment and enforcement for the routine infant and childhood vaccines and delivery of the school-based immunization programs. Vaccine delivery in other settings, such as primary care, and adult immunization programs were considered out of scope for this evaluation. We also sought to understand the barriers and facilitators that influenced reported immunization coverage during the COVID-19 pandemic and recovery periods. We conclude with a set of locally driven recommendations for PHUs to maintain and achieve high immunization coverage in the post-COVID-19 pandemic era.

Report Overview

This project was a mixed-methods study involving two components. We conducted **interviews and focus groups** with invited subject matter experts on immunization program activities from PHUs across Ontario. Each participating PHU also completed a **pre-session online survey** about their health unit's immunization programs and catch-up activities during the 2024–25 school year.

This report is organized into three sections:

- Impacts: We describe the impacts of the COVID-19 pandemic on public health immunization program activities and catch-up efforts in Ontario.
- Perceptions: We characterize PHUs' barriers and facilitators to performing or maintaining immunization program activities in Ontario following the COVID-19 pandemic.
- Strategies: We identify best practices used across Ontario's PHUs and offer solutions to inform ongoing COVID-19 pandemic recovery efforts.

Intended Audience

The intended audiences are staff who support immunization program delivery and/or ISPA activities within each PHU, local and provincial staff who monitor immunization coverage, Medical Officers of Health and Associate Medical Officers of Health, directors and managers responsible for immunizations or vaccine-preventable diseases, and colleagues from the Office of Chief Medical Officer of Health at the Ministry of Health.

About the ISPA

The *Immunization of School Pupils Act* (ISPA) is the provincial legislation that requires all students attending school in Ontario, including both public and private schools, to be immunized against designated diseases or have a valid medical or non-medical exemption.[8] Under the ISPA, parents and guardians are required to report their child's immunization records to public health. Students who are non-compliant with the ISPA may face school suspension for up to 20 days. The Medical Officer of Health within each PHU is responsible for enforcing the ISPA. Diseases covered under the ISPA include diphtheria, tetanus, pertussis (whooping cough), measles, mumps, rubella, polio, meningococcal disease, and varicella (chicken pox). Although implementation of the ISPA varies across PHUs (for example, which grades or cohorts are annually assessed and enforced), PHU-led ISPA activities generally include:[10]

- Uploading student lists received from schools and school boards
- Identifying overdue students at risk of suspension
- Sending ISPA notification letters to overdue students
- Assessing and updating student immunization records
- Offering immunization clinics or facilitating immunizations through primary care providers
- Reviewing medical and non-medical exemptions and facilitating the exemption process
- Issuing and enforcing suspension orders
- Educating parents and families, healthcare providers and schools and school boards about immunizations and the ISPA process

Key Findings

We received referrals for 83 potential participants, of whom 72 (87%) agreed to participate. In total, we conducted interviews or focus groups with 67 (93%) participants, representing 28 out of the 29 PHUs across Ontario. Five participants did not attend their scheduled session or withdrew prior to their session. We were also unable to schedule a session with staff from one PHU due to competing demands from the multi-jurisdictional measles outbreak.

Of the 67 individuals who participated, most were managers, supervisors, or directors (43%) or public health nurses (25%) within vaccine-preventable diseases or immunization programs (Table 1). Each session included up to 11 participants (median=7), with up to seven different PHUs represented (median=5).

Table 1: Summary of Interview and Focus Group Participants and Sessions

Participants	**Statistic**
Total number of participants, N	67
Participant role, n (%)	
Manager, supervisor or director	29 (43%)
Public health nurse	17 (25%)
Medical Officer of Health or Associate Medical Officer of Health	7 (10%)
Epidemiologist or analyst	6 (9%)
Coordinator	2 (3%)
Other*	6 (9%)
Sessions	**Statistic**
Total number of sessions, N	11
Type of session, n (%)	
Focus group	10 (91%)
Interview	1 (9%)
Number per session, median (range)	
Number of participants per session	7 (1–11)
Number of PHUs represented per session	5 (1–7)
Date of session, range	March 7 – April 7, 2025

* Other roles included clinical nursing facilitator, health promotion specialist, policy advisor, quality improvement specialist, research associate, and vaccine program specialist.

1. Impacts

This section outlines the COVID-19 pandemic's impacts on routine immunization program activities and catch-up efforts and describes how PHUs are achieving their immunization or program targets in the post-pandemic era.

Pandemic Impacts on Immunization Program Activities

During the COVID-19 pandemic, all PHUs across Ontario temporarily halted their immunization program activities, including ISPA and school-based programs, with schools either closed to in-person learning or with public health measures in place during parts of the 2019–20, 2020–21 and 2021–22 school years. Many immunization staff were redeployed to the COVID-19 pandemic response, including the COVID-19 vaccine program, resulting in reduced capacity for routine immunization programs. Only some essential services, such as vaccine supply and ordering and reporting of adverse events following immunization, were prioritized to continue.

Most PHUs commented that their school-based programs returned more quickly than ISPA activities once schools re-opened. Some PHUs resumed ISPA enforcement during the 2022–23 school year but most did not resume enforcement until the 2023–24 or even 2024–25 school years. Instead, PHUs focused their ISPA efforts on conducting assessments and sending notices to non-compliant students, rather than enforce suspensions, following the Ministry's directive.[17] Many PHUs commented on the large volume of non-compliant students when they conducted their ISPA assessments during the post-pandemic period. This issue of non-compliance was felt to be a particular concern for children born during the COVID-19 pandemic ("COVID-19 babies") who may have missed or delayed vaccines due to primary care access during the pandemic or were immunized but just starting school and had not yet been assessed under ISPA.

Once ISPA enforcement was resumed, several PHUs had to use a staggered or incremental cohort approach due to the increased volume of students not assessed during the pandemic-impacted years and associated resource and capacity requirements, with additional cohorts being added each school year. Even PHUs that were doing full enforcement of all cohorts prior to the pandemic had to scale back during the COVID-19 recovery period, although these PHUs were often in a better position with the ISPA activities before the pandemic and thus were able to catch-up faster and more easily post-pandemic.

> *"The biggest tool of the ISPA process is just getting the records as opposed to encouraging vaccination... When we see [our coverage at] 33%, we know that's not actually reflective of immunization coverage. That's just ISPA compliance. They are fully immunized. They just haven't reported. So, it's hard to look at that coverage rate as a real picture of what's happening with vaccination in the community."*
>
> – Focus group participant (March 31)

Although some PHUs felt that their immunization program activities had returned to a "new normal," most were still trying to get back to pre-pandemic ISPA activities and getting through the "backlog" of missed cohorts during the pandemic. Many PHUs expressed having to restart their ISPA activities from scratch. For example, PHUs that were in the process of achieving full ISPA enforcement for all cohorts or grades before the pandemic commented that they had lost gains made in the pre-pandemic period and had to start again with children that entered school during the pandemic. These efforts were further set back with the Canada Post strike that occurred in the fall of 2024 and disrupted PHUs' ability to mail letters to parents and guardians notifying them that their children were overdue for immunizations.

> *"For the ISPA, we're back to square one. We finally finished doing one full cohort. [Before the pandemic], we had just started doing all cohorts every year… and were on track to finish it that pandemic year. Our coverage rates are abysmal and very hard to catch up because so much of the flow of information is missing."*
>
> – Focus group participant (March 13)

Achieving Immunization Coverage or Program Targets

Many PHUs have implemented plans to get their ISPA programs back on track in the post-pandemic era but noted that catching up on the backlog would be a multi-year effort. Some even commented that it could take up to a decade to recover from the COVID-19 pandemic. Despite these setbacks, some PHUs said that they made enhancements in other areas of their immunization programs, such as spending more time with new immigrant and refugee families and building better relationships with schools and school boards. Others incorporated lessons learned from the COVID-19 pandemic, including adopting an equity-based approach, targeting under-immunized schools or communities, and gaining efficiencies for ISPA follow-up. Full ISPA enforcement with suspension (as opposed to conducting assessments and sending notices to non-compliant students but without suspension) was viewed as the most successful strategy to increase immunization coverage rates.

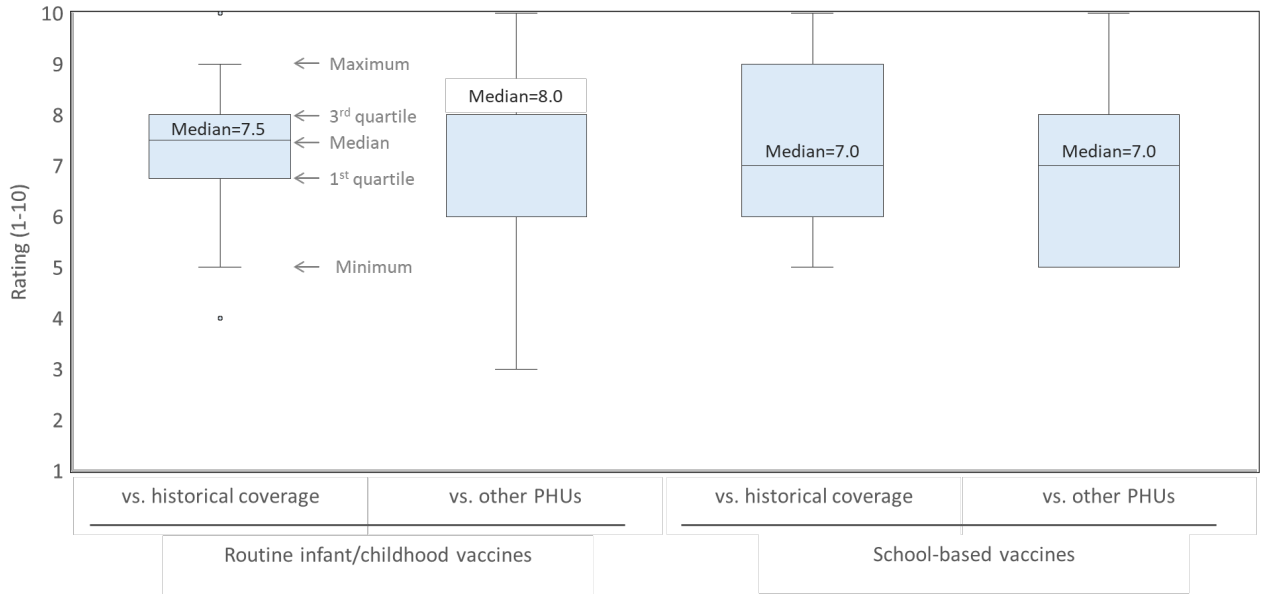
In terms of immunization coverage, some PHUs use the national immunization coverage goals as a benchmark,[12] while other have internal goals (e.g., increase coverage by 1% each year), with most trying to get their immunization coverage back to pre-pandemic levels or better. Many PHUs praised Public Health Ontario's new Immunization Data Tool as a way to monitor immunization coverage in their jurisdiction relative to the provincial average, although some noted the lack of real-time data with this tool.[7] Many PHUs did not have a specific target for immunization coverage. Instead, most have set programmatic or operational goals, such as full ISPA assessment and enforcement for all cohorts or grades, increasing the percentage of cohorts reached relative to previous years, or taking more proactive measures to issue fewer suspensions orders or reduce the number of non-compliant students (see Proactive ISPA Processes and Alternative Suspension Strategies). Many also noted staff well-being and workload balance as a secondary goal.

> *"We found that the most successful and the biggest increase in terms of getting [our] vaccine coverage rates back on track were the school-based activities offered during instructional hours in partnership with our school boards, as well as the resumption of enforcement of ISPA."*
>
> – Focus group participant (March 17)

Perceptions of Post-Pandemic Immunization Coverage

In the pre-session survey, participants (n=30) were asked to rate their current immunization coverage following the COVID-19 pandemic. At least half of the PHUs gave themselves a rating of seven or higher out of ten for their routine infant and childhood and school-based vaccines relative to their coverage before the COVID-19 pandemic or to other PHUs (Figure 2). However, we observed considerable heterogeneity in ratings across PHUs. When asked to explain their ratings, PHUs with higher ratings (nine or higher) were more likely to indicate that they had resumed ISPA enforcement across all grades or cohorts, had comprehensive catch-up activities, or had increased clinic appointment availability. PHUs with lower ratings (eight or lower) were more likely to indicate that they had insufficient capacity to fully enforce ISPA or offer catch-up clinics, had an increased volume of exemptions, or cited other challenges specific to the PHU's population and demographics. Just over half (57%) of PHUs targeted a different number of cohorts for ISPA assessments before and after the pandemic, with 37% targeting fewer cohorts and 20% targeting more cohorts. PHUs that rated their immunization coverage highly (nine or higher) were more likely to be targeting the same number of cohorts before and after the pandemic.

Figure 2: Public Health Unit Self-ratings of Immunization Coverage Following the COVID-19 Pandemic on a Scale of 1 (Low) to 10 (High)



2. Perceptions

This section outlines PHU's perspectives on the barriers and facilitators to performing or maintaining immunization program activities following the COVID-19 pandemic. It is organized around the main themes that emerged from the thematic analysis of the interview and focus group transcripts.

Immunization Program Delivery and ISPA Activities

Access to Immunization Services

Participants spoke about offering enhanced immunization services "over and above" their regular programming or adopting lessons learned from the COVID-19 vaccine program to improve access to immunization services and facilitate catch-up for missed cohorts. Example strategies included offering all vaccines (including non-ISPA and seasonal vaccines like influenza and COVID-19) at clinics or offering school-based clinics in high schools (see Strategies for more examples). Participants spoke about the lack of family doctors in their area or family doctors no longer offering immunizations. They also viewed the limited scope of practice for pharmacists and other allied health professionals as a barrier to access.

> *"The COVID-19 [mass immunization] clinics for school vaccines was definitely key, especially in that early time where we weren't yet fully back into our school clinics. We did have lots of families who were really keen and wanted to be able to get their kids up to date."*
>
> – Focus group participant (March 17)

> *"While we're in [grade 7 to 12 schools], we do any of the vaccines that they're eligible to receive. We'll bring a bunch of vaccines and try and do it that way. The targeted school clinics were really successful."*
>
> – Focus group participant (March 11)

Immunization Clinic Models

PHUs offered different types of clinics at various sites, including schools, public health units or in the community, often with extended hours after school or on evenings and weekends. Many PHUs adopted a mass immunization clinic model (similar to those used for COVID-19 vaccines) for their ISPA clinics, while some also partnered with primary care providers to offer joint clinics. Many provided barrier-free, walk-in options, such as mobile buses or community hub clinics, at strategically located sites in under-served communities or even went door-to-door and offered home visits or used outreach ambassadors to improve access to immunizations (see Transportation and Proximity Barriers). Participants also talked about setting up centralized online booking systems or phone lines for making appointments.

> *"We also offered grade 7 vaccines in high schools when we went to catch the cohorts that we had missed. I think we've turned ourselves inside out trying to meet the needs of families with ISPA. We offered clinics in every small community so that we were closer to parents. We've offered all sorts of outreach. We've offered evening hours."*
>
> – Focus group participant (April 7)

Intensive Follow-up or Targeted Outreach

Participants described focusing their ISPA efforts on schools or communities with greater needs such as those with higher rates of non-compliance or more limited access to primary care. These more intensive follow-up or targeted outreach activities included multiple visits to schools, targeted reminder letters or phone calls to parents (both daytime and evening hours), working directly with schools or principals to identify at-risk students, and offering special programs or targeted immunization clinics for children without a primary care provider or provincial health insurance coverage. Other PHUs were also successful at implementing ISPA in private schools for the first time post-pandemic.

> *"We save space in our in-house clinics so that anybody with no healthcare provider can book in. We make sure that we get them done before suspensions."*
>
> – Focus group participant (March 11)

Proactive ISPA Processes and Alternative Suspension Strategies

Many participants described proactive steps they took to minimize their workloads during the ISPA process such as sending "no information letters" (letters sent to parents that have not reported any immunizations ahead of suspension orders) or offering "suspension prevention clinics" (PHU-led immunization clinics that were aligned with the timing of ISPA notices) (see Strategies for more examples). Some larger PHUs staggered their suspension orders across schools or school boards or grades or cohorts (for example, different suspension dates for elementary and secondary schools) to better manager their workloads, although other PHUs said that this was not an effective strategy for them. Many PHUs adopted alternative strategies to reduce the number of ISPA suspensions and minimize the impacts on students, families, and schools. These efforts were felt to be particularly important following the COVID-19 pandemic given the impacts of school closures during the pandemic lockdowns on students' mental health, learning and development. For example, some PHUs lifted suspension orders or offered "in-progress exemptions" allowing suspended students who had booked vaccine appointments with their primary care providers to return to school. Some PHUs also conducted CCEYA assessments for preschool-aged children before they begin school or targeted their communications to parents of preschool-aged children to inform them of their duty to report immunizations to public health through childcare providers or at school registration.

> *"We've actually done in school suspension prevention clinics where after we've run numbers… we reached out [to the school], mobilized the administration, and actually sent out a small team… The families loved it. We engaged the workers who provide support in different languages to the school to promote the clinics and people brought in records. We actually did all the immunizations on site that were required after assessment. It was a huge success!"*
>
> – Focus group participant (March 13)

> *"We also restarted daycare immunization record assessment… so that there's fewer students going into school with no records whatsoever."*
>
> – Focus group participant (March 31)

Extended Eligibility for Publicly Funded Programs

Participants described focusing their efforts on high school students who would soon be aging out of some publicly funded immunization programs. For example, some PHUs prioritized offering additional clinics or enforcing ISPA for high school students in grades 9 through 12, rather than elementary or middle school-aged children. During the COVID-19 pandemic, the Ministry of Health had temporarily extended eligibility beyond grade 12 for school-based vaccines to students who had graduated during the COVID-19 pandemic (2019–20 to 2022–23 school years).[15] Many PHUs also expanded their school-based clinics to double cohorts allowing grade 8 students to attend the grade 7 clinics or allowed for special release of school-based vaccines to primary care providers.

> *"We were able to send emails through the schools, or they agreed to send them on our behalf, to graduating students in high school when there was that extended eligibility criteria for those school-based vaccines, so that we could catch anybody who was leaving but maybe still eligible for that extra year."*
>
> – Focus group participant (March 28)

Data and Information Systems

Access to Immunization Records

We heard that in many PHUs there is a lack of awareness among families about their reporting responsibilities under the ISPA. This was felt to have increased during the post-pandemic period. Most parents assumed that their primary care provider would report their child's immunizations to public health and are often frustrated to learn that this reporting does not occur automatically. Participants described how this burden on parents to report and confusion over the ISPA process contributed to students' immunization records not being up to date. Participants described how some healthcare providers may charge fees or require appointments for patients to access their immunization records. They viewed this as a barrier for completing the ISPA process in a timely and equitable way. In a select few PHUs, primary care providers can report immunizations to public health through an application called PHIX (Public Health Information Exchange) or directly through their electronic medical record systems, but this was not the norm in most PHUs.

> *"I'm sure it's not lost on anyone on this call — The brokenness of the healthcare system for parents to understand that their doctors aren't telling us what their vaccines are. We're the 'bad guys' asking for that record and need to unnecessarily go back to the healthcare provider who's already taxed to ask for a record… I'm finding even [parents who vaccinate their children] get frustrated with us because of this... This has been a goal at the higher level to get a seamless flow of information from healthcare providers to public health."*
>
> – Focus group participant (March 21)

> *"A lot of the work we do is just to find records that already exist at a healthcare provider's office."*
>
> – Focus group participant (March 31)

Immunization Reporting and Records Management

Many participants spoke of the challenges with managing immunization records, including access to real-time immunization data, the flow of information from healthcare providers or school boards to public health, and data entry demands on parents and healthcare providers. Participants commented on the frequency of data entry errors in parent-reported immunization records, such as selecting the incorrect antigen or reporting to the wrong health unit in ICON, which were time and resource intensive to correct. Participants also mentioned that it was difficult for many parents to report their child's immunizations to public health given the complexity of Ontario's immunization schedule. Many also described data quality issues in Panorama, such as incorrect or out-of-date addresses or phone numbers, or technical difficulties with running PEAR (Panorama Enhanced Analytical Reporting) reports.

> *"There's also just lots of user error. You can't expect a parent to understand the implications of the information they're putting in and choosing the wrong vaccine. Just getting this information directly from healthcare providers would probably reduce 60% of ISPA work."*
>
> – Focus group participant (March 31)

> *"The lack of integrated systems. We're all working in these individual systems. Just the process even for getting the school lists on an annual basis, the amount of time that [it] takes to go through that, to review it, to get those updated."*
>
> – Focus group participant (March 13)

Gaps in Current Immunization Information Systems

Participants identified the lack of a provincial immunization registry and integration with other data systems (for example, electronic medical records or school records) as a key gap in our current immunization information systems. They described how COVaxON, the provincial immunization registry for COVID-19 vaccines, showed users the potential functionality of a real-time immunization registry. Such functions included the ability to look up a client's immunization record online or send out vaccine appointment reminders via email or text. However, participants also commented that COVaxON placed considerable data entry demands on immunization providers, including public health staff. The lack of sociodemographic data in Panorama, the existing immunization information system in Ontario, was also identified as a gap for identifying priority populations at a community or neighbourhood level and implementing equity-informed programming (see Data-informed Equity Solutions).

> *"I think we were very spoiled during the pandemic. We had so much data and very specific [socioeconomic] data. We knew exactly who wasn't immunized or who wasn't up to date with their COVID-19 vaccines."*
>
> – Focus group participant (March 28)

> *"A provincial universal immunization registry would be an enormous step to this endeavor. I don't think it can be overstated."*
>
> – Focus group participant (March 28)

Information Sharing and Modern Reporting Systems

Participants described ways that their PHUs have modernized their systems for parents to report their child's immunization record, such as establishing dedicated email addresses, phone lines or call centres or allowing parents to upload a photo of their child's immunization record. Some PHUs have also begun uploading their ISPA suspension lists to a secure file sharing site to enable real-time information sharing with schools and phase out fax machines. During the post-pandemic period, some PHUs implemented the ICON (Immunization Connect Ontario) online system for parents to report and track their child's immunizations, noting that it improved their ISPA reporting process. However, other participants commented that ICON is not user-friendly and has certain functional requirements that were viewed as barriers to parental reporting. For example, ICON requires users to request a pin and uses two-factor authentication. Some PHUs have implemented their own online reporting systems outside of ICON or adopted external platforms such as the CanImmunize app to address these challenges, although they acknowledged the time and financial constraints of implementing such systems.

> *"We tried to streamline the reporting through our call center… When someone calls in, if a public health nurse is not available to speak with them, then they're put on a nice hold with a little bit of music and information and within about 2 minutes they'll be on the phone with a public health nurse and can just get the records updated at that point in time."*
>
> – Focus group participant (March 10)

> *"We ended up creating a process where [parents] can complete the form online on our website and then submit a picture of their immunization record. That's gone over really well in our health unit."*
>
> – Focus group participant (March 20)

Technological Innovations and Data-driven Solutions

To address these challenges, many PHUs have implemented technological innovations and data-driven solutions such as using automated tools to generate ISPA notification letters, creating online consent forms for school-based vaccines, and using robocalls or texts to send communications to parents (see Strategies for more examples). In one PHU, we heard about an automated system for generating and customizing ISPA letters (up to 50,000 letters per hour), which has dramatically reduced the time spent on manual processes. Other PHUs have similarly adopted data-driven solutions such as creating online dashboards for tracking immunization coverage and identifying schools or communities with higher immunization needs. In a handful of focus groups, we heard about the "digital divide" where different PHUs have uneven access to technological innovations. This lack of coordination and consistency across PHUs was viewed as a contributing factor to the heterogeneity in immunization coverage.

> *"We have an internal dashboard that we use to monitor school immunization rates, so we can look at any school, any cohort and see whether they have partial doses or completed the series… It's been really a wonderful tool."*
>
> – Focus group participant (March 25)

Communications

Education Campaigns and Health Promotion

Many PHUs described how they developed resources for parents and schools on ISPA reporting requirements and timelines. In some PHUs, this included instructional videos or posters with QR codes in healthcare provider offices with instructions on how to report immunizations through ICON. Many PHUs translated ISPA resources into other languages for schools or communities with large populations of children where English or French is not their primary language or leveraged translation services from other programs. Some PHUs launched health promotion campaigns specific to ISPA, while others attended community events to raise awareness about routine immunizations. In addition to these education activities directed towards parents, some PHUs also offered ISPA education sessions for healthcare providers, school boards or school principals and administration, or parent councils, including live and recorded webinars, Q&A sessions, YouTube videos, and lunch and learn sessions.

> *"There's a lot of parents who just don't know that it's their responsibility to report it to us. We send out a lot of communication to parents via schools through their electronic newsletters, but it's hard to know how beneficial that is. I guess it's hard to track how helpful those e-newsletters are if they're reaching the population that we want to."*
>
> – Focus group participant (March 20)

> *"A lot of parents were having difficulty understanding how to enter vaccines, so we developed a guide for that. We're actually in the process of developing a video on how to enter immunizations into ICON [Immunization Connect Ontario]."*
>
> – Focus group participant (March 25)

Robust Communications Plans

Several PHUs mentioned that they developed robust communications plans, including standard messaging and timelines, to proactively notify parents about resuming ISPA activities and informing them about catch-up efforts. These plans included broad communications through traditional media (e.g., TV, radio, newspapers), social media, automated messaging (e.g., robocalls, text messages), advertisements in public settings, and parenting websites and networks. Some PHUs also contracted media companies to produce media campaigns, including paid advertising. These communications were seen as critical to getting PHUs' immunization programs back on track following the COVID-19 pandemic. PHUs also worked with communication teams at boards of health and school boards, as well as engaged with primary care providers and childcare centres. Participants discussed the benefit of streamlining their communications, for example sending all communications to schools through a single channel. They emphasized the importance of consistent messaging to all families to help clarify expectations and reduce confusion among parents.

> *"I think [a robust communications plan] has been an enabler of keeping a lot of the activities going and getting buy-in from the community."*
>
> – Focus group participant (March 7)

Targeted Communications

In addition to public messaging, PHUs also adopted other strategies for more targeted communications to overdue students and/or schools or communities with high rates of non-compliance. In some PHUs, this included students who were overdue for non-ISPA vaccines such as hepatitis B or human papillomavirus vaccines offered through the school-based programs. They also targeted parents of specific cohorts such as younger children attending childcare or entering school for the first time who may not have previously heard about ISPA or older students in high school who would be sooner aging out of the publicly funded programs (see Extended Eligibility for Publicly Funded Programs). In the pre-session survey, PHUs reported using a variety of strategies to communicate ISPA requirements during the 2024–25 school year. The most common approaches included communication with schools and school boards (83%), providing information to parents and families via schools (e.g., sending students home with written materials explaining ISPA requirements) (60%), and public messaging on social media, websites, and other digital media platforms (53%). While most PHUs (83%) engaged with primary care providers in some capacity, only 40% explicitly mentioned this as a part of their ISPA communication strategies.

> *"We looked at schools with the lowest uptake, and we started doing in-class public health nurse sessions on vaccines and different things to help promote education and understanding. [We also] worked better with translated records and translated documents to have better communication with parents in the community."*
>
> – Focus group participant (March 25)

Partnerships, Collaboration and Engagement

Healthcare Provider Engagement

PHUs used several strategies to engage healthcare providers, including ISPA resources and guidance, fax or email blasts, regular reminders, health professional updates, and targeted education and outreach (see Education Campaigns & Health Promotion). Participants emphasized the importance of maintaining strong relationships with primary care providers and the benefits of having healthcare providers fully on board with ISPA processes. Many PHUs described having good partnerships with primary care providers and, in a select few PHUs, they report immunizations directly to public health (and *vice versa*). Some PHUs also offered joint primary care and public health immunization clinics. However, as mentioned above, the lack of access to primary care and/or healthcare providers not offering immunizations continues to be a challenge (see Access to Immunization Services). We heard from participants that they were seeing more pushback from healthcare providers who view ISPA as a public health or school issue, as well as a lack of awareness about ISPA requirements among healthcare providers. PHUs also described having to manage expectations from healthcare providers because public health was no longer able to offer certain immunization services that were provided during or immediately after the COVID-19 pandemic as part of the pandemic response.

"We also have a primary care advisory and liaison group. Our [Medical Officer of Health] sits on that group and chats with them about anything coming down the pipe for ISPA... It's like a two-way dialogue. It's not just us providing information, [but taking] information back from them to help improve how we can work with them in partnership."

– Focus group participant (March 13)

"Number one is really starting to build strong partnerships with Ontario health teams. They're really embedded in the communities. They have outreach ambassadors. So, working with them to see how we can get the messages out there, help families use ICON [Immunization Connect Ontario]."

– Focus group participant (March 13)

School and School Board Engagement

Strong partnerships with schools and school boards were also viewed as critical to the ISPA process. PHUs described establishing school liaison nurses or school health teams, developing ISPA toolkits for school principals and administrative staff, creating resource-sharing portals, and conducting targeted education and outreach (see Communications). Many PHUs described how these partnerships were strengthened during and after the COVID-19 pandemic. These partnerships granted PHUs access into schools for school-based clinics, allowed them to distribute resources and information to school administrators and parents, and facilitated ISPA enforcement using suspensions. In some schools, principals even reached out to parents of students at risk for suspension or helped PHUs identify families with greater barriers to accessing immunizations. Some PHUs strategically reframed their ISPA messaging to schools to make it more about educational opportunities from not missing school due to suspensions, rather than immunization enforcement. We also heard about high turnover within the education system, necessitating ongoing engagement with schools and school boards. Some PHUs commented on the challenges with engaging with and obtaining school records from private schools, in particular; only a few PHUs mentioned that they enforce ISPA within private schools.

"[Following the pandemic], our much stronger partnerships with the school boards. We work quite individually with the boards. Now we have more established communication flows through the directors and then down to the principals. We've really done work to make sure that the senior leaders at the boards are engaged and really communicating to schools and principals what the expectations are and how they can support them."

– Focus group participant (March 13)

"Our school board partners are really quite engaged, but it's a lot of work for them. It is a heavy lift to ask for them."

– Focus group participant (March 20)

Family and Caregiver Engagement

Many participants commented about the increase in vaccine hesitancy in their jurisdictions following the COVID-19 pandemic (see Vaccine Hesitancy). They described experiencing more push-back from parents about ISPA requirements and the suspension process and more requests for non-medical exemptions, along with verbal abuse and threats following suspension orders. Much of their time with families was spent on clarifying roles and responsibilities under the ISPA and vaccine hesitancy counselling. Many parents and families were not aware that they were required to report their child's immunizations and falsely assumed that their healthcare provider would provide that information directly to public health. For this reason, many PHUs spent time and resources educating parents about their reporting requirements and the ISPA process, including preparing plain-language materials and offering translation services. Participants noted that many parents had no prior relationship with public health or were hearing about ISPA for the first time. This was especially true for parents whose children were entering kindergarten and for new immigrant and refugee families.

> *"I believe that consistency is key. We could do a lot of messaging with parents on social media and speak with the schools and school boards and get everybody on board, but you have to keep doing it. It seems it doesn't end, the relationships don't end. You have to actively keep them going and keep them interested and keep those messages flowing for the work to continue to be done… It's definitely not easy."*
>
> – Focus group participant (March 13)

Community Engagement and Partnerships

Many participants spoke about how they were able to leverage community partnerships established during the COVID-19 pandemic and how those partnerships supported their catch-up efforts in the post-pandemic era, including hosting ISPA catch-up clinics. Several PHUs attended community events, used outreach ambassadors, or partnered with community-based organizations (e.g., Community Health Centres) or existing programs or services (e.g., Healthy Babies, Healthy Children program) to educate people in their communities about ISPA and promote or deliver routine immunizations. They also developed strong partnerships with community-based organizations that work with specific groups such as Indigenous communities or newcomer populations.

> *"We ended up in the 2023 spring and summer going to many community events like shows down at the waterfront, busker festivals, and having a booth there where we would promote routine immunization schedules for children."*
>
> – Focus group participant (March 20)

Cross-sector Alignment

Participants spoke about the importance of two-way dialogue between public health and other sectors such as education or primary care. Participants discussed the importance of collaboration and "breaking down silos" within and across the health and education sectors. Several PHUs have established liaison groups or regular meeting series with schools and school boards or primary care providers. Others worked with allied health professionals (e.g., dentists, sexual health clinics) and community teams (e.g., family health teams, immigration workers) to improve immunization coverage.

We also heard about the importance of consistent ISPA messaging and enforcement across neighbouring PHUs or regions. Participants described issues when families move between health units or school boards due to differences in ISPA implementation and enforcement across PHUs. They also spoke about the unique challenges for PHUs that share borders with other provinces (e.g., Quebec, Manitoba) due to the different immunization schedules, interprovincial movement, and lack of interoperability of Ontario's immunization data systems with other provinces and territories.

> *"What we've done is worked with settlement workers in our area through the YMCA and with our school boards to identify schools in communities where we have particularly low coverage and trying to come up with some additional strategies."*
>
> – Focus group participant (March 17)

Equity and Accessibility

Transportation and Proximity Barriers

As described previously, proximity and access to immunizations were among the main themes that we heard during the focus groups (see Access to Immunization Services). Many PHUs described how they provided immunization services specifically for those who do not have a regular healthcare provider, lack access to public transportation, or experience other barriers to accessing immunization services. In some PHUs, this involved strategically locating immunization clinics in underserved areas or co-locating clinics with other types of health or social services, providing walk-in or barrier-free clinic options, or running pop-up clinics (e.g., mobile buses). In Northern communities with large geographic areas to cover, this also included public health nurses travelling to the communities to offer clinics or home visits.

> *"We have gone to a model where we have neighborhood health and wellness hubs and clinics that are operating on a routine schedule to support equity-denied populations within the city, and routine immunization falls within that scope."*
>
> – Focus group participant (March 7)

Data-informed Equity Solutions

Several PHUs have adopted an equity lens for implementing ISPA and/or monitoring immunization coverage based on client demographics or healthcare access gaps. For example, some PHUs have incorporated equity opportunity data from schools into their dashboards to monitor immunization coverage or developed a risk index to prioritize schools or communities in need of catch-up services.

> *"The other thing we did, again with the lens of equity, is we tried to look at demographics of different schools as well as compliance rates and tried to develop a risk index to prioritize schools that we felt were most in need of catch-up services."*
>
> – Focus group participant (March 7)

Changing Demographics

Several participants commented on the changing demographic profile within their jurisdictions in the post-pandemic era, specifically population growth and an increase in recent immigrants or refugees. Newcomers to Canada, in particular, may present unique challenges to PHUs for ISPA assessment due to the different immunization schedules in their country of birth, unfamiliarity with Ontario's health system, immunization records in different languages or date formats, and incomplete or missing immunization records. The lack of translation services was viewed as a barrier, with many PHUs leveraging resources from other programs such as through schools or immigration services.

> *"We also saw since the pandemic, a significant change in the demographics of our community, changing the needs and the services and the way that we provide them. So, that adds, not necessarily a barrier, but a challenge on the human resources because it does take more intervention to get them to the same place [for ISPA compliance]."*
>
> – Focus group participant (March 7)

Priority Populations

Many PHUs specifically focused their immunization and catch-up activities on equity-deserving neighbourhoods or communities or those without access to family doctors (see Intensive Follow-up or Targeted Outreach). Specifically for newcomer populations and families where English or French is their second language, these targeted outreach activities included education about ISPA requirements or processes, helping families navigate the health system, offering translation for international immunization records, providing ISPA materials in multiple languages, and hiring staff who speak different languages. Participants spoke about how providing culturally competent services was critical for building relationships and developing trust. For PHUs affected by the multi-jurisdictional measles outbreak in 2024–2025, this also included engaging with select faith-based groups or communities that have historically had low immunization coverage.

> *"I think that our efforts to pay more attention to who within our community needs the most help or is experiencing the greatest barriers to accessing immunization has been integral to us actually making a difference in immunization rates."*
>
> – Focus group participant (March 7)

> *"We did attend some of our elementary schools where we had a very high population of newcomers, and then we collaborated with our immigration services and the school workers that they have assigned to the schools. They provided some translation and support for reading the [ISPA] letters and understanding the process."*
>
> – Focus group participant (March 25)

Systems, Policies and Resources

Leadership and Strategic Planning

Participants spoke about the importance of senior leadership prioritizing immunization and catch-up efforts at an organizational level. In some PHUs, this included establishing multi-year ISPA plans, building immunization targets into the strategic plan, or Medical Officer of Health directives to prioritize ISPA and school-based programs. Leadership was also viewed as critical for PHUs to be able to redeploy staff or reallocate resources, where needed, to support immunization programs.

> *"We also have full ISPA enforcement on our strategic business plan. So, that does highlight it as a priority amongst our upper leadership, and I think that helps."*
>
> – Focus group participant (March 20)

Human Resources

In almost all focus groups, we heard about human resources as both a barrier and facilitator for improving immunization coverage in the post-pandemic period. Several participants commented that they had insufficient staffing levels or needed overtime hours to catch-up on the significant backlog of overdue students because of the COVID-19 pandemic. This was especially true in PHUs that had seen large population growth, particularly newcomer populations, without a corresponding increase in staffing levels (see Changing Demographics). They noted increased staff time spent "chasing down" immunization records for non-compliant students, working with new immigrant and refugee families, and counselling vaccine hesitant families. Staff recruitment and retention and burnout were also noted as barriers. Facilitators of human resources included redeploying or cross-training staff from other programs, hiring seasonal, casual or contractual staff including those who can speak different languages, having a flexible workforce with surge capacity, and implementing standardized orientation and onboarding for new staff (see Strategies for more examples). However, several participants noted that these new staff were not familiar with routine immunizations, ISPA processes, or Panorama or only trained in COVID-19 vaccines, with many requiring substantial training or re-training.

> *"When it comes to staff turnover, I would say that like 80%, if not more, of our staff that are currently in immunization are new staff that just joined during the pandemic. We've had a lot of people leave the program or retire. There's just been a huge learning curve for a lot of the people that are currently working in our routine clinics."*
>
> – Focus group participant (March 11)

> *"People are still burnt out from the pandemic, and particularly around immunization. Where we may have historically for surge capacity or during grade 7 clinics borrowed from other programs here and there to help support, it's become a much more challenging proposition now. No one wants to go back to immunization clinics and everyone's still a little traumatized and burnt out."*
>
> – Focus group participant (March 31)

Competing Priorities

Many participants talked about competing priorities or "micro-emergencies" both within their immunization programs and across the public health sector. These competing priorities, such as the annual influenza and COVID-19 vaccine programs, respiratory syncytial virus (RSV) program implementation, and mpox and measles outbreaks, took staff and resources away from their routine ISPA programs and catch-up efforts and prevented them from optimizing their immunization program delivery. At a structural level, some participants noted the challenges with combining different ISPA practices in those PHUs that had recently merged. Others commented on the difficulty meeting all of Ontario's Public Health Standards due to competing priorities, suggesting that PHUs need to prioritize which standards to meet.

> *"The competing demands post-pandemic, especially in regards to other areas of the program that have expanded, and then continuing to try and expand and do more proactive work for ISPA activities and school-based programs certainly is a big challenge."*
>
> – Focus group participant (March 13)

Sustained Funding

Several PHUs reallocated COVID-19 funding to routine immunization programs to support catch-up programs during the pandemic recovery phase, with some obtaining additional sources of funding, for example through external grants with community or academic partners. Besides these limited funding sources, the lack of dedicated funding to support ongoing ISPA catch-up or expansion and timeliness of funding announcements were viewed as key barriers to long-term program planning. Several PHUs commented that there had been no sustained increases to their base immunization program funding or that additional one-time funding was allocated to specific programs such as the new RSV program. Many PHUs desired to do more with respect to catch-up programs but were limited by available resources and uncertainties around sustained funding.

> *"The uncertainty in the funding. We had a lot of not extending contracts for staff who were just trained for COVID-19 and then having to re-hire when we found out that we were going to, in fact, get some more funding for recovery. So just the uncertainty and the back and forth with orientating staff was definitely a big challenge."*
>
> – Focus group participant (March 20)

Centralized Resources and Support

Several participants commented on the need for centralized resources and supports that could be shared across the province, including education campaigns around ISPA requirements and processes, ISPA toolkits or resources, provincial immunization strategies or goals, and coordinated messaging to address vaccine hesitancy (see Considerations for the Future). They also described potential infrastructure improvements such as ICON upgrades or a provincial immunization registry.

> *"I think there needs to be some consistent provincial strategies around messaging around vaccines… I think if we were all to have one [provincial strategy] as opposed to every health unit trying to manage setting up their own. Not all health units have that capacity."*
>
> – Focus group participant (March 20)

"We're all doing the same work, but rather than each of us having to invest money and energy and a lot of time into creating these systems, [it would be nice to have] something that was more shared amongst the health units."

– Focus group participant (March 11)

Legislation and Policy

Participants perceived several challenges with the ISPA legislation, specifically getting private schools to comply or reaching children who are home schooled. They also commented on the technological limitations of ISPA. They noted that ISPA requires notices to be delivered personally or sent by ordinary mail and does not allow for more modern communication options such as text or email (see Information Sharing & Modern Reporting Systems). They noted that many parents ignore letters sent in the mail or screen phone calls from public health and some schools no longer have fax machines for sharing suspension lists. Participants also commented that parents were often confused by or perceived contradictions across provincial legislation such as the ISPA, *Personal Health Information Protection Act*, and *Education Act* as it relates to privacy concerns or suspension orders. Several participants commented on the province's failure to proclaim sections of the ISPA introduced in 2017 that would have required healthcare providers to report immunizations directly to the Medical Officer of Health.

"[One advantage of the pandemic was] having so many more dynamic ways to communicate. But then going back to working with ISPA and being [bound] by the legislature that is written to say [ISPA notices] must be received by mail. All sorts of different things that really made working with ISPA seem pretty archaic in comparison to how we were able to adapt really quickly to meet a need in the pandemic."

– Focus group participant (March 20)

Vaccine Hesitancy

Vaccine Fatigue and Pandemic Impacts

One of the biggest issues noted by participants was the rise in vaccine hesitancy and vaccine fatigue following the COVID-19 pandemic. Participants talked about how backlash against COVID-19 vaccine mandates and fear of new vaccine technologies such as mRNA vaccines had spilled over into routine immunization programs. For example, in several PHUs, we heard about parents who would not let their children attend school-based or other PHU-led immunization clinics because they were concerned their child would be immunized with COVID-19 vaccines. Several participants also noted an increase in parents not wanting to report their child's immunization to public health, even if vaccinated, due to mistrust of public health, along with a perceived increase in non-medical exemptions in their region.

"There's just a lot of vaccine fatigue from the COVID-19 pandemic... I feel like we're fighting a larger battle than we ever have before for ISPA and for the grade 7 vaccines because people are questioning the vaccines. They're tired of being immunized."

– Focus group participant (March 7)

"The polarizing views of immunization as a result of [the COVID-19 pandemic] has really made our ISPA enforcement more difficult... We are seeing an increased number of exemptions. People who just don't even want to respond to us by phone or by email. They don't want to talk to us at all."

– Focus group participant (March 20)

Combatting Mis/disinformation

Widespread false information about vaccines and vaccine-preventable diseases was also identified as a key challenge post-pandemic. PHUs spoke about how they were combating mis/disinformation by addressing myths on Facebook, TikTok and other social media platforms, as well as directing clients to reputable sources of information. They also discussed mass communications and health promotion campaigns to fill knowledge gaps around ISPA (see Communications). However, other PHUs commented that they do not have the capacity for health promotion to address vaccine hesitancy (see Competing Priorities), nor the necessary socioeconomic data to identify under-immunized groups or communities. Several participants called for a coordinated provincial or national strategy to combat vaccine hesitancy.

"[We're] trying really hard to provide really consistent and good sources of information to our clients to make sure that they're understanding as opposed to the things they're finding on different sources."

– Focus group participant (March 20)

Rebuilding Trust

The increase in vaccine hesitancy and mistrust of immunizations was viewed as a larger systemic issue related to mistrust of government and public health. In a concerning number of focus groups, we heard about verbal abuse and threats directed towards public health unit staff and backlash against the ISPA processes, especially during ISPA suspension weeks. To rebuilt trust, many PHUs focused on relationship building, targeted communications, and outreach to specific groups or communities that have historically been under-immunized (see Community Engagement and Partnerships and Targeted Communications). This was noted in particular for certain under-immunized communities in Ontario that were affected by the 2024–2025 multi-jurisdictional measles outbreak.

"We also noticed immediately after the pandemic this distrust in public health. There was a lot of rebuilding of relationships and trust with our families of students to get them back on track… I'm happy to say now we've been able to recover that, and we've put a lot of work into building our trust back up with families."

– Focus group participant (March 28)

3. Strategies

This final section outlines best practices and solutions for increasing immunization coverage following the COVID-19 pandemic, drawing on PHU's shared experiences during the pandemic recovery period. During the sessions, we heard many practical strategies that PHUs have adopted to increase immunization coverage in their jurisdictions following the COVID-19 pandemic (see below for a comprehensive list of these strategies). This section concludes with recommendations from participants on ways forward and a future vision for Ontario's immunization programs.

Strategies Implemented by Public Health Units to Increase Immunization Coverage Following the COVID-19 Pandemic

A. Enhancing Immunization Services

- Offering routine vaccines at school-based, community or COVID-19 immunization clinics
- Setting up catch-up clinics in high schools
- Offering joint clinics between primary care and public health

B. Improving Access

- Special programs/services for families without family doctors (example: "Let's Grow" program)
- Offering centralized booking system for immunization appointments
- Offering barrier-free, walk-in clinics
- Offering extended clinic hours on evenings and weekends
- Holding clinics on multiple days/week
- Using alternative delivery sites (examples: mobile bus, community hub clinics)
- Offering home visits for immunization services
- Allowing individuals from neighbouring schools or communities to attend clinics
- Expanding access for primary care providers to order school-based vaccines

C. Enhancing ISPA Processes

- Redeployment of staff and other resources for ISPA catch-up, with or without temporary organizational structures such as an incident management system (IMS)
- Assessing or enforcing ISPA for all or an expanded set of grades or cohorts
- Enabling mechanisms for primary care providers to efficiently report immunizations directly to public health and *vice versa*
- Allowing parents to submit immunization records using alternative methods (examples: dedicated email address, uploading photos to ICON)
- Developing education campaigns for parents on how to report online via ICON (examples: instruction videos, posters with QR codes in healthcare provider offices)
- Offering online education sessions for parents requesting non-medical exemptions
- Adding stickers for non-ISPA vaccines to ISPA notification letters for overdue students

D. Extending Eligibility

- Extending eligibility for school-based vaccines to cohorts that recently graduated
- Offering school-based clinics to double cohorts of grade 7 and 8 students
- Targeting high school students aging out of publicly funded program

E. Targeting Outreach

- Targeting schools or communities with low coverage or high exemption rates
- Visiting under-served schools or those with lower coverage on multiple occasions
- Focusing on equity-deserving neighbourhoods or communities
- Strategically locating clinics in under-served communities
- Using outreach ambassadors embedded in community
- Intensively following up with parents of non-compliant students
- Contacting parents during daytime and evening hours

F. Being Proactive

- Engaging with childcare providers to provide information to students prior to school entry
- Assessing immunization records for preschool-aged children (example: “Kick Start to Kindergarten” program)
- Informing parents of ISPA reporting requirements during preschool or school registration
- Focusing efforts on new students entering school for the first time
- Offering in-class education sessions about school-based vaccines (example: for grade 6 students)
- Aligning timing of ISPA clinics with March break or suspension weeks
- Offering clinics during summer months
- Sending “no info” letters to parents of students with missing immunization records ahead of ISPA notices or suspension orders
- Lifting suspension orders or offering in-progress exemptions for students with upcoming vaccine appointments

G. Improving Communications

- Developing ISPA resources for parents, schools, childcare providers and healthcare providers
- Developing robust communication plans including standard messaging and timelines
- Broad communications to parents (examples: traditional media, social media, print ads, parenting websites and networks)
- Hiring consultants to produce social media campaigns including paid advertising
- Health promotion campaigns (example: “Catch Up, Keep Up, Stay on Track” program)
- Disseminating information to parents through schools, childcare providers and healthcare providers
- Adding reminders about ISPA process on vaccine order forms

- Tear-off pads for healthcare providers with QR code that links to health unit website
- Offering ISPA education sessions for healthcare providers, schools and parents (examples: live and recorded webinars, Q&As, YouTube videos, lunch and learn sessions)
- Translating ISPA resources into languages other than English and French or leveraging translation services from other programs

H. Establishing Better Partnerships

- Establishing liaison groups with school boards or primary care teams
- Working with allied health partners and community teams (examples: Ontario Health teams, immigration settlement workers)
- Building partnerships with existing programs (example: "Healthy Babies, Healthy Children" program)
- Engaging with healthcare providers during routine vaccine fridge inspections
- Community events to raise awareness about routine immunizations and ISPA process (example: booth at festivals)

I. Incorporating Technological Innovations

- Implementing online or app-based tools for reporting (examples: ICON, CanImmunize, other in-house systems separate from ICON)
- Automating messaging services to parents (examples: emails, robocalls, text messages)
- Setting up dedicated phone lines or call centres to streamline reporting
- Using mail merge or automated scripts to generate letters to overdue students (example: LaTeX)
- Sharing real-time suspension lists with schools using a secure file sharing service (example: SharePoint)
- Using online consent forms for school-based immunization programs

J. Monitoring and Evaluation

- Developing dashboards to monitor local immunization coverage (example: PowerBI)
- Looking at vaccine distribution data to inform immunization service needs and clinic sites

K. Minimizing Workload Impacts

- Staggering cohorts for suspension orders
- Redeploying or cross-training staff from other programs
- Having a flexible workforce with surge capacity
- Hiring seasonal, casual or contractual staff with appropriate onboarding and training
- Standardizing onboarding of new staff (example: buddy program)

L. Ensuring Sufficient Resources

- Reallocating COVID-19 funding to routine programs during recovery period
- Partnering with academic or community partners to apply for external grants

Considerations for the Future

At the end of each session, we asked participants to share their perspectives on what is needed to achieve their health unit's immunization coverage or programmatic goals and get Ontario's immunization programs back on track to achieve, or even surpass, these goals following the COVID-19 pandemic. Many participants spoke about the need for materials, resources or strategies that could be shared across PHUs. They noted that a coordinated, provincial strategy that leverages existing resources and adopts lessons learned from the COVID-19 pandemic would improve efficiency and minimize workloads. This was felt to be especially important for smaller PHUs that may not have the funding or support to develop their own resources. One participant commented that achieving their goals would allow resources to be reallocated from *health protection* activities such as offering immunization clinics to *health promotion* efforts such as tackling vaccine hesitancy.

Recommendations from Participants for the Ministry of Health on Improving Ontario's Immunization Programs

- Provincial immunization registry
- Provincial vaccine strategy including immunization coverage goals
- Provincial community of practice for sharing ISPA best practices across Ontario's PHUs
- Provincial or national strategies to address vaccine hesitancy including research to understand the local drivers of vaccine hesitancy following the COVID-19 pandemic
- Provincial immunization policy manual that outlines a provincial vaccine policy and standards (examples: BC Communicable Disease Control Manual, Alberta Immunization Program Standards Manual, Canadian Immunization Guide)
- Multi-year plans for PHUs to catch-up ISPA following the COVID-19 pandemic or enforce ISPA for all grades or cohorts
- Shared provincial resources or toolkits about ISPA processes for parents, schools and healthcare providers including translated materials for newcomer families
- Coordinated data systems across PHUs such as those for ISPA reporting by parents or healthcare providers or vaccine ordering
- School board or PHU-led education sessions about vaccines and vaccine-preventable diseases to promote immunization and increase vaccine confidence (example: recycling education programs)
- Automated system to send regular reminders to parents when their children are due for routine immunization (example: Cancer Care Ontario cancer screening programs)
- Cost recovery for immunizations delivered by PHUs similar to model used for primary care

Conclusion

The COVID-19 pandemic had significant impacts on immunization program activities across Ontario. During the focus groups, we heard that many of Ontario's PHUs are still trying to get their immunization programs and activities back on track following the pandemic. Although all PHUs have now resumed their school-based programs and are enforcing ISPA for some if not all grades or cohorts, immunization coverage remains below pre-pandemic levels, even as of the 2024–25 school year. While some of this declining coverage may be due to pandemic disruptions to immunization services, much of the heterogeneity in provincial immunization coverage is likely attributed to PHU's varying abilities to catch-up missed cohorts or fully enforce ISPA and lack of data infrastructure to accurately monitor coverage. As a result, reported immunization coverage likely does not reflect true coverage for most PHUs.

Many participants spoke about the daily challenges they encounter when delivering their immunization programs, including staff turnover and burnout, outdated systems for information sharing, and competing priorities. PHUs also commented on the broader issues facing Ontario's immunization programs in the post-pandemic era, including increasing vaccine hesitancy and the erosion of trust in our public health system, widening of health inequities, and concerns around dedicated funding for ISPA activities and catch-up efforts. Many participants emphasized the need for technological innovations and supportive legislation to better collect immunization records. In particular, several participants advocated for a provincial immunization registry, echoing recent calls from the Ontario Immunization Advisory Committee and Ontario's Chief Medical Officer of Health, among others.[18,19]

Despite these challenges, we also heard about the considerable progress that many PHUs have made with improving their immunization coverage, while incorporating lessons learned from the COVID-19 pandemic. These success stories include launching education and health promotion campaigns, strengthening partnerships with primary care and school boards, breaking down silos across public health and other sectors, adopting an equity-based approach, and incorporating technological innovations. Participants spoke passionately about the work they have done to recover from the COVID-19 pandemic and ensure that people in Ontario are protected from vaccine-preventable diseases. Many PHUs have implemented creative solutions for improving immunization coverage and achieving their programmatic goals, including many practical strategies that could be leveraged across other PHUs.

Despite the considerable progress, further efforts will be needed to get Ontario's immunization programs back to a "new normal" following the COVID-19 pandemic. Improving immunization coverage will require evidence-informed and community-centred approaches to address vaccine confidence and uptake, innovative strategies to modernize Ontario's immunization data systems, and equity-informed solutions to ensure barrier-free access to immunizations. Many of these core principles are aligned with the Public Health Agency of Canada's recently updated 2025–2030 Interim National Immunization Strategy.[13] The future of Ontario's immunization programs will depend on improved collaboration and coordination across PHUs, including shared provincial resources and materials, along with continued prioritization of immunizations as a core public health standard.[11]

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Appendices

Appendix A: Detailed Methods

Participants and Recruitment

For the interviews and focus groups, we contacted the Medical Officers of Health and Associate Medical Officers of Health and managers of vaccine-preventable disease programs in each PHU and asked them to refer staff who support immunization program delivery and/or ISPA activities. Eligible roles included but were not limited to public health nurses, public health physicians, epidemiologists, analysts, managers, directors, and Medical Officers of Health or Associate Medical Officers of Health. Each PHU could refer up to three participants, with some of the larger PHUs referring up to six participants.

Potential participants were contacted by email and invited to participate in a focus group (90 minutes) held virtually over Zoom (Zoom Communications, San Jose, CA). If participants were not available for the scheduled sessions or preferred to not participate in a focus group format, they had the option to participate in a one-on-one interview (60 minutes) instead. We conducted all interviews and focus groups over a one-month period from March 7 to April 7, 2025.

We obtained approval for this study from Public Health Ontario's Ethics Review Board and Privacy Officer. As this study was considered low risk, we did not collect individual written consent from participants but assumed implied consent if they participated in the interview or focus group or completed the pre-session survey.

Interview and Focus Group Sessions

Two members of the project team facilitated all sessions using a semi-structured interview script. At least one other project team member also attended each session to take notes. The interview script included six questions and prompts on immunization program activities, including: COVID-19 pandemic impacts, goals or targets for increasing immunization coverage, strategies for increasing immunization coverage, successes or facilitators, challenges or barriers, and monitoring and evaluation. See Appendix B for example questions used during the sessions. We asked participants to focus their responses on the COVID-19 pandemic recovery period, which we defined as the 2022–23 and later school years for the purposes of this project. We used the term "immunization program activities" to refer to both ISPA assessment and enforcement activities and the delivery of school-based immunization programs.

Analysis

We audio-recorded and transcribed the sessions using the built-in functions within Zoom. A project team member reviewed each transcript for accuracy against the audio recordings and removed any personal identifiers prior to analysis. We analyzed the transcripts using Dedoose (Sociocultural Research Consultants, Los Angeles, CA), an online software tool that offers a systematic approach to organizing and coding large amounts of qualitative data.

We used thematic analysis to identify main themes or concepts.[20,21] Briefly, this method involved reviewing each transcript, sorting the data into codes, grouping these codes into broad themes or categories, and then reviewing these themes with the project team through an iterative process until a consensus coding framework was reached (Appendix C). This framework served as an index for organizing and coding the data. Three team members independently coded each transcript, with 10% overlap to ensure interrater reliability. Any discrepancies in coding were resolved through consultation with the project lead. We edited some quotes for grammar and clarity, while maintaining their intended meaning. We also anonymized all quotes to remove participants' names or other direct identifiers.

Pre-session Survey

Additionally, participants were asked to complete an online survey before participating in their session. The pre-session survey included closed- and open-ended questions on routine immunization and catch-up activities during the 2024–25 school year. We requested that each PHU provide a single response on behalf of their organization. In instances where we received multiple responses, we consolidated the data so that there was only one response per PHU, except for newly merged PHUs where we allowed for multiple responses from their legacy PHUs (see Recent PHU Mergers).

In the survey, each PHU was asked to rate their current immunization coverage following the COVID-19 pandemic on a scale of 1 to 10 (with 10 being the highest rating). We asked PHUs to rate their immunization coverage for routine infant and childhood vaccines and school-based vaccines separately compared with: (1) their historical coverage before the COVID-19 pandemic and (2) other PHUs. Participants were also asked to explain why they assigned their PHU each rating. The results from these survey questions are included in this report; the remaining results describing immunization program activities during the 2024–25 school year will be summarized separately.

Recent PHU Mergers

As of January 1, 2025, several PHUs merged, reducing the total number of PHUs down from 34 to 29 health units.[22] Some of the newly merged PHUs preferred to provide responses about their immunization programs and catch-up activities during the COVID-19 pandemic and pandemic-recovery periods from the perspective of their legacy health units. As a result, total number of responses for the pre-session survey (n=30) was larger than the number of PHUs who participated in the interviews and focus groups (n=28).

Appendix B: Interview and Focus Group Script

COVID-19 Pandemic Impacts

During the COVID-19 pandemic, which aspects of your health unit's routine immunization program activities were most impacted? Which aspects were least impacted (or prioritized to continue)?

Has your health unit set any goals or targets for increasing its immunization coverage following the COVID-19 pandemic?

COVID-19 Pandemic Recovery

Following the COVID-19 pandemic, what strategies did your health unit use to increase reported immunization coverage?

What were some of the key successes/facilitators to performing or maintaining immunization activities following the COVID-19 pandemic?

What were some of the key challenges/barriers to performing or maintaining immunization activities following the COVID-19 pandemic?

Monitoring and Evaluation

Thinking about catch-up strategies for both the ISPA and school-based vaccines, do you think these strategies are sufficient to reach your health unit's immunization goals or targets following the COVID-19 pandemic?

Appendix C: Coding Framework

Table A1: Coding Frame for Interviews and Focus Groups

Theme: Immunization Program Delivery and ISPA Activities

Description: Perceptions on how immunization services and ISPA and catch-up programs are delivered and structured, including ways to improve programming.

Sub-Themes (Codes):

- Access to immunization services
- Immunization clinic models
- Appointments and booking systems
- Intensive or targeted outreach
- Alternative suspension strategies
- Proactive ISPA processes
- Extended eligibility for publicly funded programs

Example Quotes:

> *"We chronically have a lack of access to primary care across our whole catchment area. So, we have always done school-based immunization clinics in every school for all ISPA vaccines. That starts with the 4-to-6-year-old booster doses right up until the grade 10 Tdap boosters."*
>
> *"The other challenge is loss of primary care. People don't have a family doctor, or their family doctor retired. They can't find [their immunization] record."*
>
> *"One of the things that we did initially post pandemic was gave them a lot longer when we were doing that initial catch-up. I think at one point in time we did three notices. They got their initial [notice], their notice in the fall, and their notice in the spring. Then we ran a whole bunch of clinics over the summer… then we didn't do suspension until the following September. It was a lot of work to get there but giving them that extra time to get up to date I think was helpful."*
>
> *"We also have online appointments, which has been really great for our high school students in particular because we can send them messages if they haven't come for their appointment yet and remind them that we're there."*
>
> *"Something that we have tried most recently for a strategy of our screen letters is targeting our grade 12 cohort students with the catch-up. Noting that they will be at the point of potentially aging out of the publicly funded program as they leave Grade 12. So, trying to use that as an opportunity to let them know that they should be reporting their immunizations or that they can be coming into some of our clinics."*

Theme: Data and Information Systems

Description: Perceptions on how data are collected and shared, data quality issues and system functionality, including automation and technological innovations.

Sub-Themes (Codes):

- Access to immunization records
- Immunization reporting and records management
- Gaps in current immunization information systems
- Information sharing
- Modern reporting systems
- Technological innovations
- Data-driven solutions
- Digital divide

Example Quotes:

> *"I think most parents just assume that all medical records are digitally connected and when their family doctor is giving a vaccine the health unit is aware of it."*
>
> *"We need automatic reporting. We need a link. We need healthcare providers either be on Panorama or something to happen because a lot of our information is just a lack of data."*
>
> *"A key challenge for us is not having a central place where all immunizations are documented. During [the COVID-19 pandemic] we had COVaxON, which was lovely because you could see people's doses regardless of where they received them. So, not having that for other routine vaccines is always a challenge."*
>
> *"Many people got used to COVaxON… got used to receiving their COVID-19 vaccine that was automatically going into a system that then was able to spit out a receipt. So, I think that has amplified the confusion over the fact that all of the other vaccines in Ontario do not go into a system at the point of administration unless it's being given by a health unit."*
>
> *"We have put a lot of resources into sending out automated notifications, either emails or voicemails, to all cohorts of students in school that year as a general reminder that they need to report their vaccinations to us alongside the cohorts that we were surveying [7- and 17-year-olds in that year]… We did do an evaluation pre/post of what that looked like, and it did yield improvements in reporting rates."*

Theme: Communication

Description: Perceptions on how information about vaccinations and ISPA processes are communicated to healthcare providers, schools and the public.

Sub-Themes (Codes):

- Education campaigns
- Health promotion
- Robust communications plans
- Targeted communications
- Streamlining communications

Example Quotes:

> *"We also created a school ISPA communication working group that was made up of representatives from each school board that had a communication lead. That has been a game changer for us."*
>
> *"We've just done widespread communications through social media and parenting websites and a huge amount of communications with our Board of Health members as well as with media. Our [Associated Medical Officers of Health] and [Medical Officers of Health] invested a lot of time speaking to the importance of routine immunization and catch up."*
>
> *"Our vaccine phone line available for anybody in the community or healthcare providers to reach out to for any questions has been a key facilitator to maintaining immunization activities."*
>
> *"I'd also say that there's been some challenges in terms of the changing landscape of how people want to be communicated with. Most of our ISPA stuff is sent through mail. This year, we ran into a postal strike, which created some difficulties in getting those communications out and into [parents'] hands so that they had the appropriate timeframes to follow up. It's a real challenge."*
>
> *"I think also a more robust provincial campaign to ensure that it's standard knowledge that a parent has to report vaccine information because, no matter how much local communication we try to do around it, it just does not seem to seep into the understanding that… there would be this next step for parents to report."*

Theme: Partnerships, Collaboration and Engagement

Description: Perceptions on relationships and engagement with healthcare providers, schools and the public that facilitate immunization program delivery and uptake.

Sub-Themes (Codes):

- Healthcare provider engagement
- School/school board engagement
- Family/caregiver engagement
- Community engagement and partners
- Cross-sector alignment

Example Quotes:

> *"One of the things that happened due to the pandemic was we really increased our connections to primary care providers. We were offering joint clinics… We had a new managerial role for a person who liaises with primary care, more communication methods to reach primary care. I think that helped during the catch-up period in helping the primary care physicians be able to support us in increasing the vaccination rates."*
>
> *"We did a lot of education with healthcare providers, just for them to understand the [ISPA] process. So, when they we're seeing their clients in office, they could explain it to parents."*
>
> *"We need strong allyship from the school boards and that ongoing relationship with them that supports the work that we do and understands the work that we do."*
>
> *"We've always worked closely with our school boards, but I feel like post pandemic we just took that extra step and had a lot of open communication and dialogue right from superintendents to principals. They helped us actually get messaging out to parents because we couldn't otherwise do it as well without their assistance."*
>
> *"We've also built really great partnerships with community partners. We found that that is kind of a unique strategy that we've tried to really enhance post-pandemic is trying to be present at various community events where we can really work with population groups who may not have access to come to our clinics [or] who may not know where to go to report their immunization."*

Theme: Equity and Accessibility

Description: Perceptions on ways to reach and support individuals or communities having low immunization coverage and/or experiencing greater barriers to accessing services.

Sub-Themes (Codes):

- Transportation and proximity barriers
- Data-informed equity solutions
- Changing demographics
- Priority populations
- Multilingual support

Example Quotes:

> *"The other thing that we've changed since the pandemic is that we're starting to really look more at servicing health-equity clients, people without healthcare providers as opposed to everyone."*
>
> *"We do have quite a few more newcomers, I would say, than we had pre-pandemic. We're seeing a big demand on the need for vaccines for those who don't have health cards or those who don't have providers or providers who won't vaccinate. So, we're running many more routine clinics than we ever had before."*
>
> *"There have been large number of community clinics propped up, particularly in equity-deserving neighborhoods and repurposed city civic centers for those. We found those to be particularly successful when pairing with schools during the [ISPA] assessment period for easier access to vaccine."*
>
> *"I find some of the bigger barriers is more around international students. We have had a huge increase in the number of international students coming to our area, which we are not used to. And we're happy that they're here, but that has been has made it challenging to provide services because we don't have a translator on site."*
>
> *"I also want to recognize that the demographic profile of our city has been changing rapidly over the last few years. Keeping on top of what that looks like, and who needs support most and trying to be efficient in the way we distribute our resources, not just because our resources are stretched so thin, but also because we are trying to do this work constantly with an equity focus, is a challenge."*

Theme: Systems, Policies and Resources

Description: Perceptions on the financial, legal and structural enablers and constraints to achieving high immunization coverage.

Sub-Themes (Codes):

- Leadership and strategic planning
- Human resources
- Competing priorities
- Sustained funding
- Centralized resources and support
- Legislation and policy

Example Quotes:

> *"The other thing I will say about the ISPA is that it's gotten harder to implement. People aren't reading. They aren't picking up their mail anymore. They don't like to talk to us by phone. We can't email them."*
>
> *"A major [challenge] in our area was that in our immunization program it was almost entirely new staff… Nobody knew how to run ISPA reports. Nobody knew how to generate notices or any of the historical information. We were all new. So that was a huge learning curve, just that loss of knowledge for us."*
>
> *"The other thing is funding capacity. I don't think we can say those things louder. I'm not sure how we're going to manage to be honest. [Our] budget [is] totally tight right now as a drum."*
>
> *"I think it's again a matter of funding and what we have available to dedicate our [staffing] resources to various vaccines. When the Ministry of Health indicated that whatever [funding] we have we should prioritize to ISPA activities and school-based programs that gave us the centralized and unified direction that we needed to focus our efforts on those activities."*
>
> *"I would just say funding instability overall is a problem for public health. I think that immunizations tend to be highly prioritized by all health units, but when there are either no increases or sub-inflationary increases in funding, we find ourselves relying a lot more on partners to do delivery. We don't have the same level of control, planning opportunities, that type of thing. It makes it a bit harder."*

Theme: Vaccine Hesitancy

Description: Perceptions on vaccine hesitancy, public discourse and safety as it relates to immunizations.

Sub-Themes (Codes):

- Vaccine fatigue & pandemic impacts
- Non-medical exemptions
- Information sharing & privacy
- Safety concerns & threats
- Combatting mis/disinformation
- Mistrust of immunizations
- Mistrust of government and public health

Example Quotes:

> *"We've had a couple of challenges, one of them being definitely vaccine fatigue… There is definite mistrust between [public health] and some families."*
>
> *"After the pandemic, everyone has an opinion about vaccines now when maybe not everyone did before. I think that's led to staff resources dedicated to answering questions and clarifications around routine immunization vaccines that we didn't have the same volume of before. And, of course, misinformation not just applying now to COVID-19 vaccine, but also other vaccines, particularly MMR... That's been a spillover effect that we've noticed."*
>
> *"I would say that at present we don't have the time, capacity, or resources to be able to really focus in and do some of that health promotion work in terms of addressing vaccine hesitancy and hesitant populations. We don't have the data to really help us pinpoint where exactly those pockets are, so that we could very quickly and easily put things together when needed."*
>
> *"For the first time, [we] had to have security at the health unit when we sent out suspension orders. We had threats. We had very, very angry people that we were enforcing a vaccine mandate… That was definitely a big challenge and a mental health challenge for our staff and for our management team trying to navigate that and how to best support them."*
>
> *"Anything that even smells like a mandate now is so much more politically charged than it ever was… During the pandemic, it was so fraught with the potential of going into schools to provide COVID-19 vaccine to students and providing without parental consent. The schools are now way more cautious around anything school-based with immunization and the pushback from parents."*

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