

PHO Rounds

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The SickKids Immunization InfoLine

**Public Health Ontario Rounds
April 29, 2025**

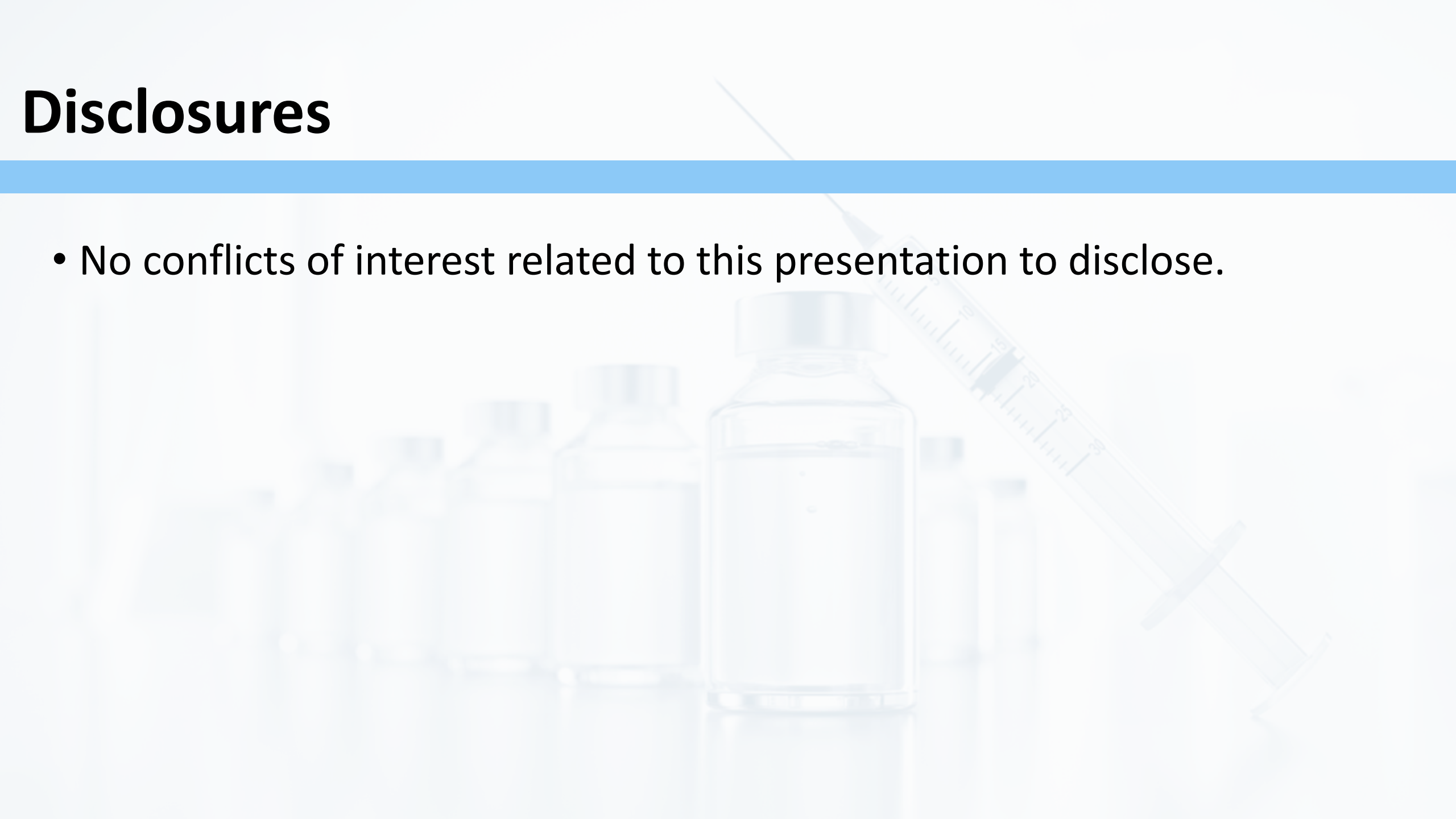
Pierre-Philippe Piché-Renaud MD MSc FRCPC

Jasdeep Singh, Adria Rose, Michelle Georgiev, Rawan Hijazi,
Upton Allen, Shaun K. Morris

SickKids[®]

Disclosures

- No conflicts of interest related to this presentation to disclose.





Objectives

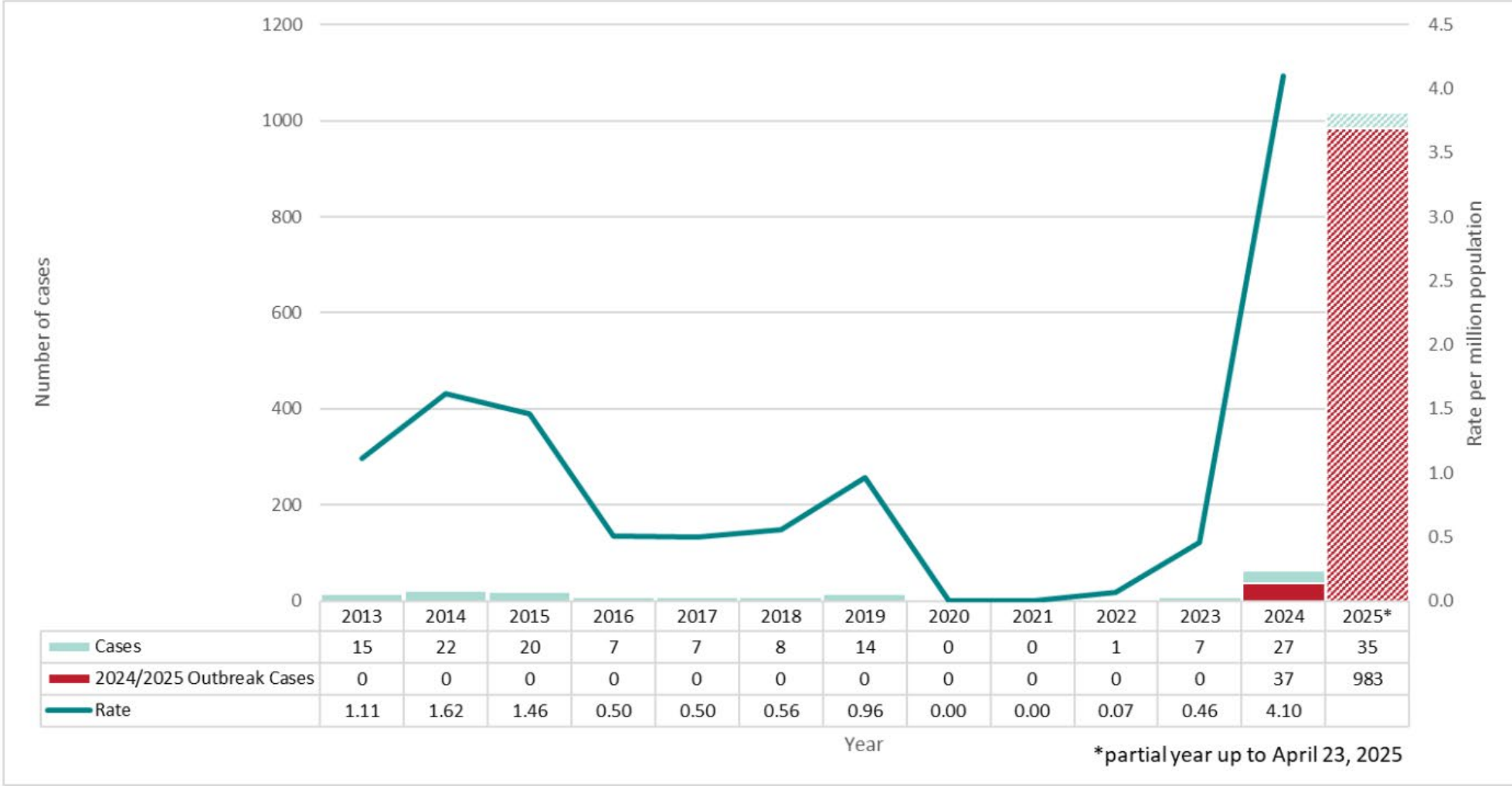
- Understand the process behind the creation of a phone-based, nurse-led immunization consultation service;
- Describe the usage trend of the SickKids Immunization InfoLine in relationship to trend of vaccine-preventable diseases;
- Discuss key challenges related with vaccine access and confidence that have been encountered at the InfoLine;
- Identify strategies to increase vaccine access and acceptance around key pediatric immunizations.



Vaccine coverage in Ontario

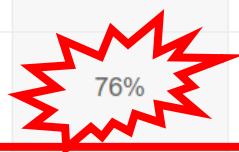
Ontario: The measles situation

Figure 4: Number of Measles Cases and Incidence Rate per Million Population: Ontario, January 1, 2013 – April 23, 2025



Trends in vaccine coverage globally

Country / Region	Antigen	Data source	2022	2021	2020	2019	2018	2017	2016	2015
African Region	Measles-containing vaccine, 1st dose	WUENIC	69%	68%	70%	71%	70%	70%	69%	68%
	Measles-containing vaccine, 2nd dose	WUENIC	45%	41%	40%	33%	25%	25%	22%	17%
European Region	Measles-containing vaccine, 1st dose	WUENIC	93%	94%	94%	96%	95%	95%	93%	94%
	Measles-containing vaccine, 2nd dose	WUENIC	91%	92%	91%	92%	91%	90%	88%	89%
Region of the Americas	Measles-containing vaccine, 1st dose	WUENIC	84%	85%	85%	87%	91%	88%	92%	93%
	Measles-containing vaccine, 2nd dose	WUENIC	76%	75%	72%	73%	84%	74%	80%	78%
Global	Measles-containing vaccine, 1st dose	WUENIC	83%	81%	83%	86%	86%	85%	85%	85%
	Measles-containing vaccine, 2nd dose	WUENIC	74%	71%	72%	71%	70%	68%	67%	63%



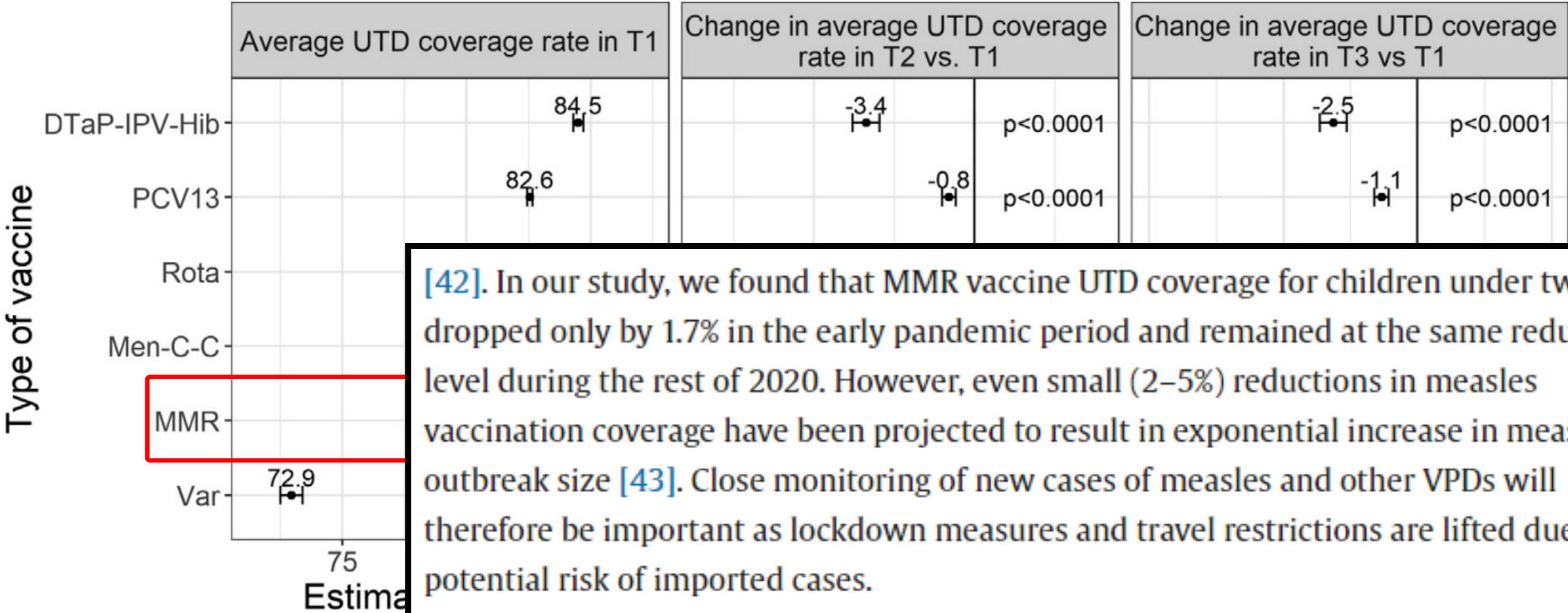
Childhood immunization coverage in Ontario

Impact of the COVID-19 pandemic on routine immunization coverage in children under 2 years old in Ontario, Canada: A retrospective cohort study



Catherine Ji^{a,b,*}, Pierre-Philippe Piché-Renaud^{c,d}, Jemisha Apajee^a, Ellen Stephenson^a, Milena Forte^{a,e}, Jeremy N. Friedman^{d,f}, Michelle Science^{c,d}, Stanley Zlotkin^{d,f,g,h}, Shaun K. Morris^{c,d,g}, Karen Tu^{a,b,i}

Primary care EMR data
Cohort of 12,313 children



Impact of the COVID-19 pandemic on routine immunization coverage of children and teenagers in Ontario, Canada

Catherine Ji^{a,b,*}, Arrani Senthinathan^{a,c,1}, Jemisha Apajee^{a,2}, Vinita Dubey^{d,e}, Milena Forte^{a,f}, Jeffrey C. Kwong^{a,b,e,g,h}, Shaun K. Morris^{e,i,j}, Pierre-Philippe Piche-Renaud^{e,i,j}, Sarah E. Wilson^{e,g,h}, Karen Tu^{a,b,e,k}

<https://doi.org/10.1016/j.vaccine.2025.126811>

Received 9 October 2024; Received in revised form 20 January 2025; Accepted 25 January 2025

Available online 30 January 2025

- Coverage for booster dose of Tdap & MMRV given after 4 years of age.
- 30,010 children aged 4–7 years

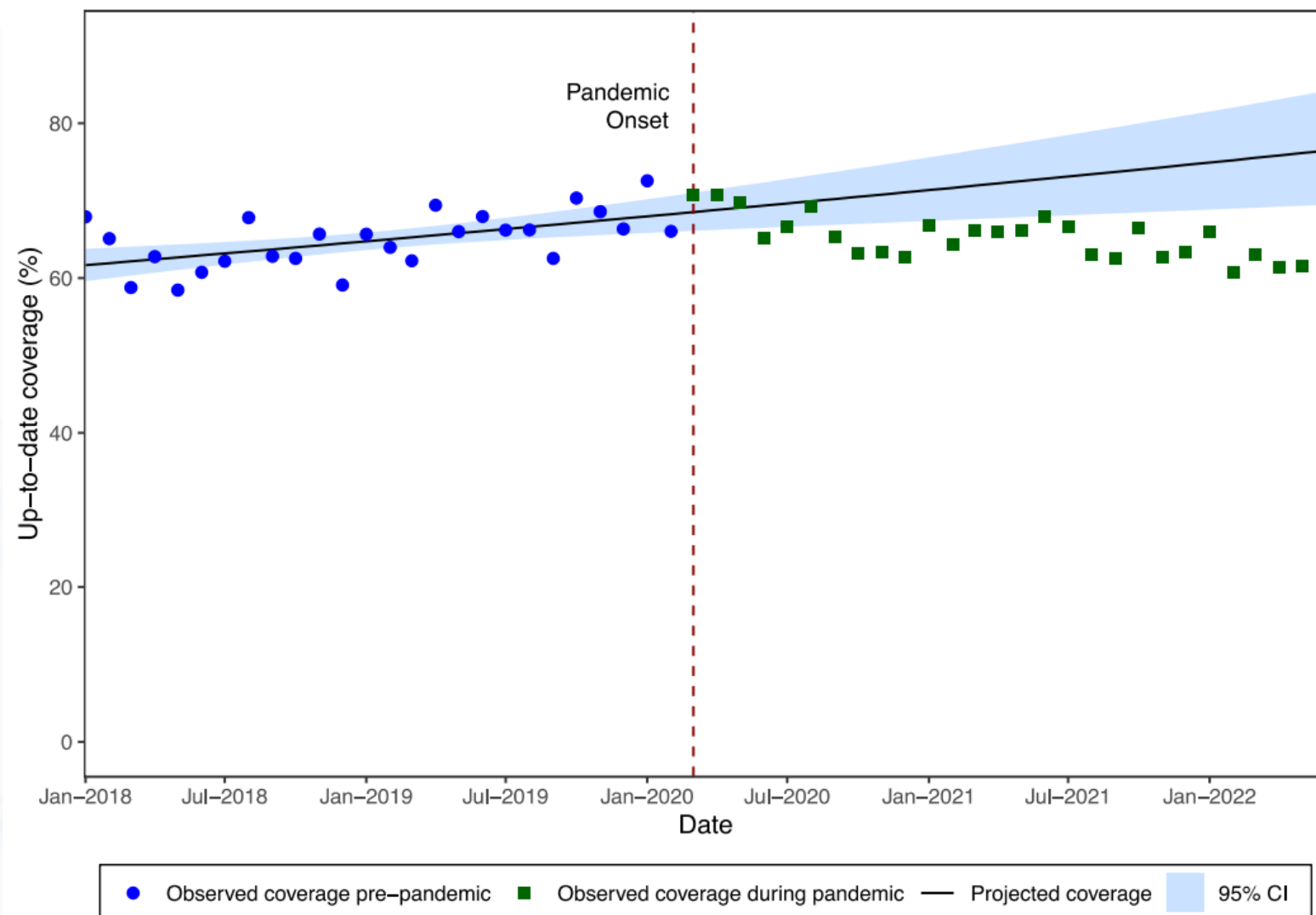


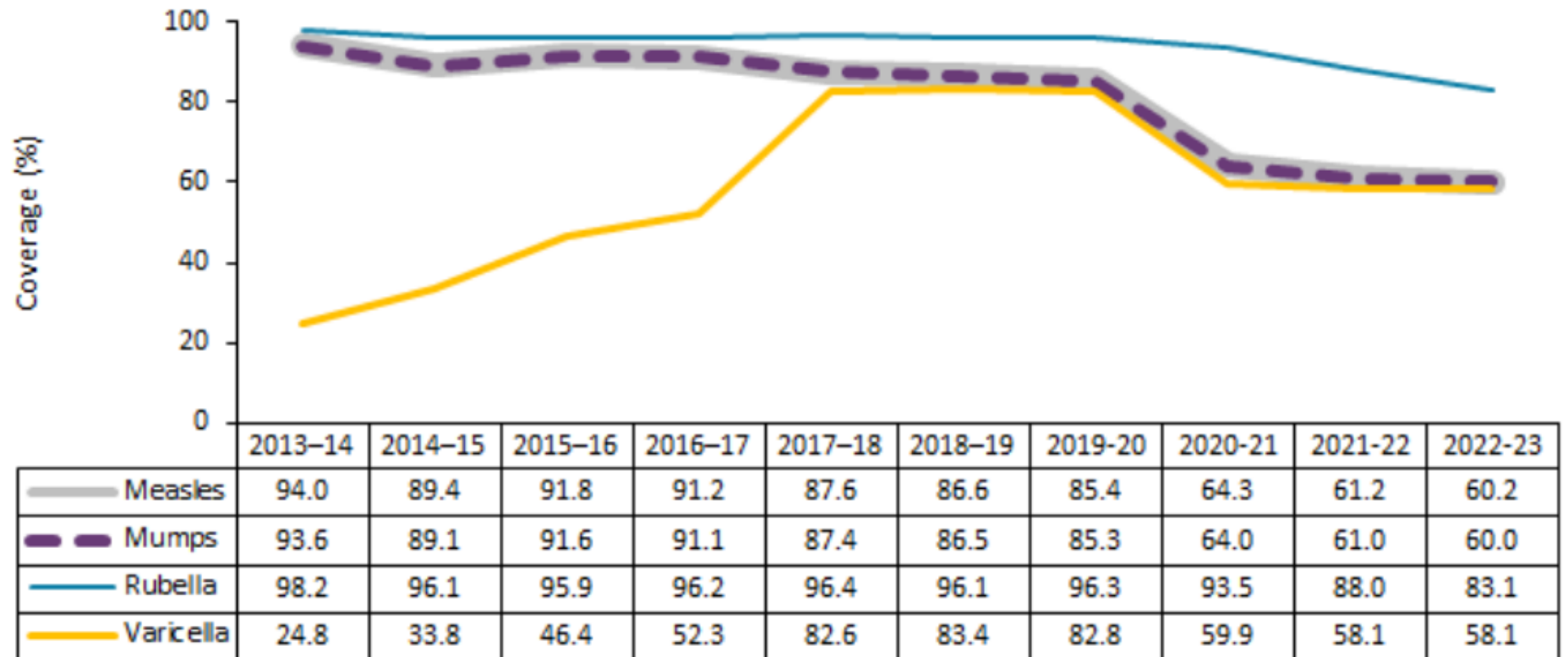
Fig. 2. Observed and projected UTD coverage for children aged 7 years only.

SURVEILLANCE REPORT

Immunization Coverage Report for School Pupils in Ontario: 2019-20 to 2022-23 School Years

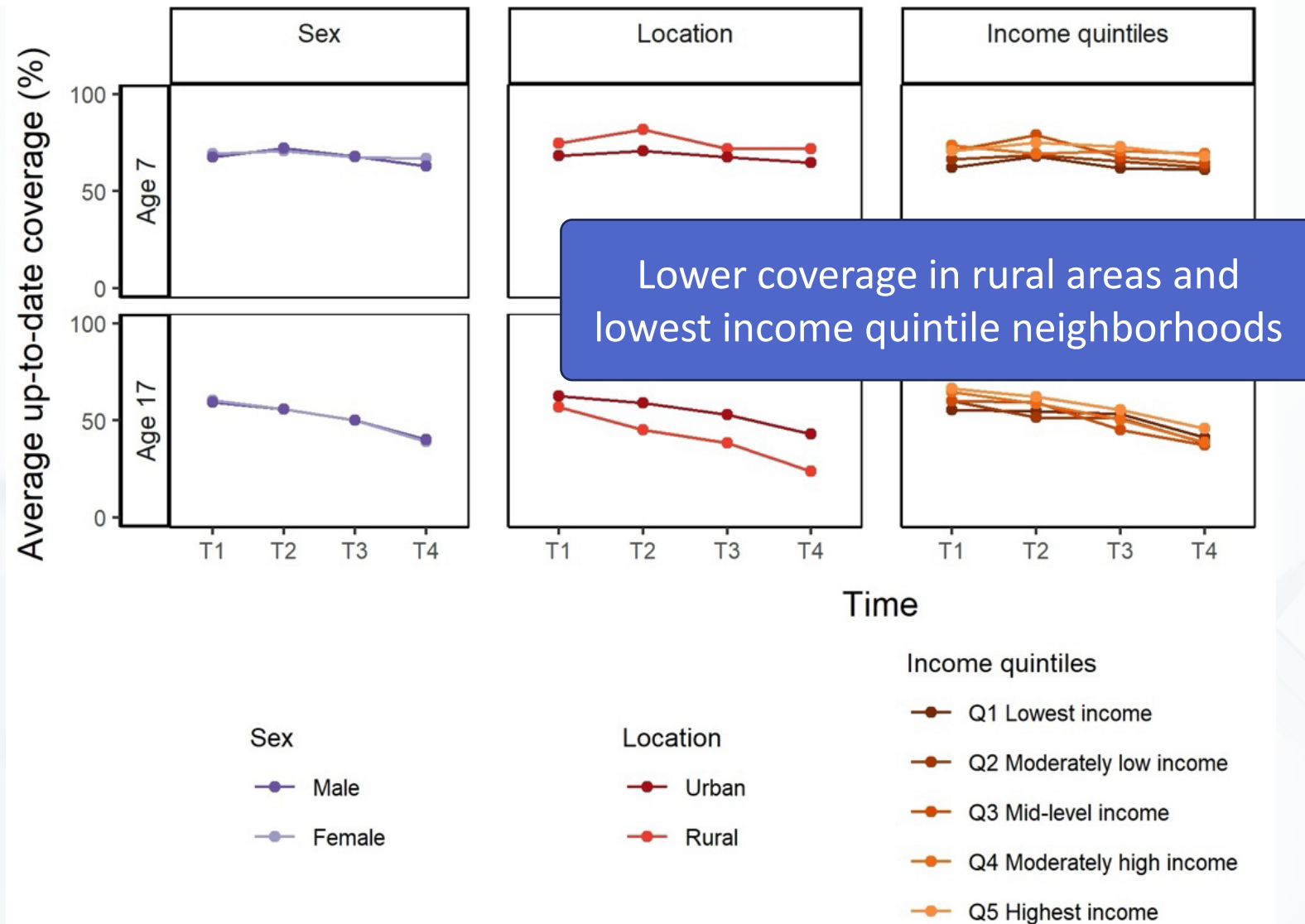
Published: March 2024

a) 7-year-olds



Impact of the COVID-19 pandemic on routine immunization coverage of children and teenagers in Ontario, Canada

Catherine Ji^{a,b,*}, Arrani Senthinathan^{a,c,1}, Jemisha Apajee^{a,2}, Vinita Dubey^{d,e}, Milena Forte^{a,f}, Jeffrey C. Kwong^{a,b,e,g,h}, Shaun K. Morris^{e,i,j}, Pierre-Philippe Piche-Renaud^{e,i,j}, Sarah E. Wilson^{e,g,h}, Karen Tu^{a,b,e,k}



A faint, light blue background image featuring a medical syringe and several vials, suggesting a clinical or scientific setting.

**Are we
speaking the
same language?**

Untangling vaccine-related definitions...

Vaccine effectiveness

Vaccine uptake

COMMENTARY

Are we speaking the same language? an argument for the consistent use of terminology and definitions for childhood vaccination indicators

Shannon E. MacDonald ^{a,b,c}, Margaret L. Russell^d, Xianfang C. Liu^d, Kimberley A. Simmonds^{c,d,e}, Diane L. Lorenzetti^{d,f}, Heather Sharpe^{g,h}, Jill Svenson^e, and Lawrence W. Svenson^{c,d,e,i}

Vaccine acceptance

Vaccine confidence

Vaccine safety

Vaccine efficacy

Let's re-organize...

	Concept	Definition
Vaccine characteristics	Vaccine efficacy	Percentage reduction of disease cases in a vaccinated group compared to an unvaccinated group based on a clinical trial .
	Vaccine effectiveness	Percentage reduction of disease cases in a vaccinated group compared to an unvaccinated group based on real-world evidence (observational studies) .
	Vaccine immunogenicity	The ability of the antigen/vaccine to provoke an immune response in an individual.
	Vaccine reactogenicity	Physical manifestation or symptoms related to the expected inflammatory response to vaccination.
	Vaccine safety	Potential of a vaccine to cause symptoms related to vaccine reactogenicity or any other adverse event following immunization (AEFI) .
Vaccine behaviours	Vaccine acceptance and refusal	Individual or group decision to accept or refuse when presented with an opportunity to receive a vaccine.
	Vaccine confidence	Trust that individuals have in the effectiveness and safety of vaccines , in the providers who administer vaccines and in the processes that lead to vaccine licensure and recommended vaccination schedule.
	Vaccine hesitancy	Delay in acceptance or refusal of vaccines despite availability of vaccination services (WHO).

Let's re-organize...

	Concept	Definition
Act of vaccinating	Vaccine access or convenience	Extent to which physical availability , affordability and willingness to pay, geographical accessibility, ability to understand (language and health literacy) and appeal of immunization services affects uptake.
	Vaccine equity	Equal distribution and access to vaccines accross different countries and populations.
	Vaccine uptake	Absolute number of people who received a specific vaccine dose(s); the numerator in the vaccine coverage calculation.
	Vaccine coverage or rate	Proportion of a group or population that has received a specific vaccine.
	Vaccine initiation and completion	Receipt of the first (initiation) and last (completion) dose of a vaccine series.

Vaccination = vaccine acceptance (individual behavior) + vaccine access (health systems)

Vaccine hesitancy is not a new phenomenon...

NATURE BRIEFING | 16 January 2019

**Daily briefing: WHO calls out
'vaccine hesitancy' as top 10 health
threat**

Vaccine hesitancy as a continuum



Canada
<1.5 %
decline all

**Refuse all
with
conviction**

Refuse
all, but
unsure

Accept some,
refuse some,
delay
vaccination

Accept
with
doubts &
concerns

**Accept all
with
confidence**

Canada 15-18%
reluctance

Behavioural Science-Informed Strategies for Increasing COVID-19 Vaccine Uptake in Children and Youth

The Behavioural and Social Drivers (BeSD) Framework

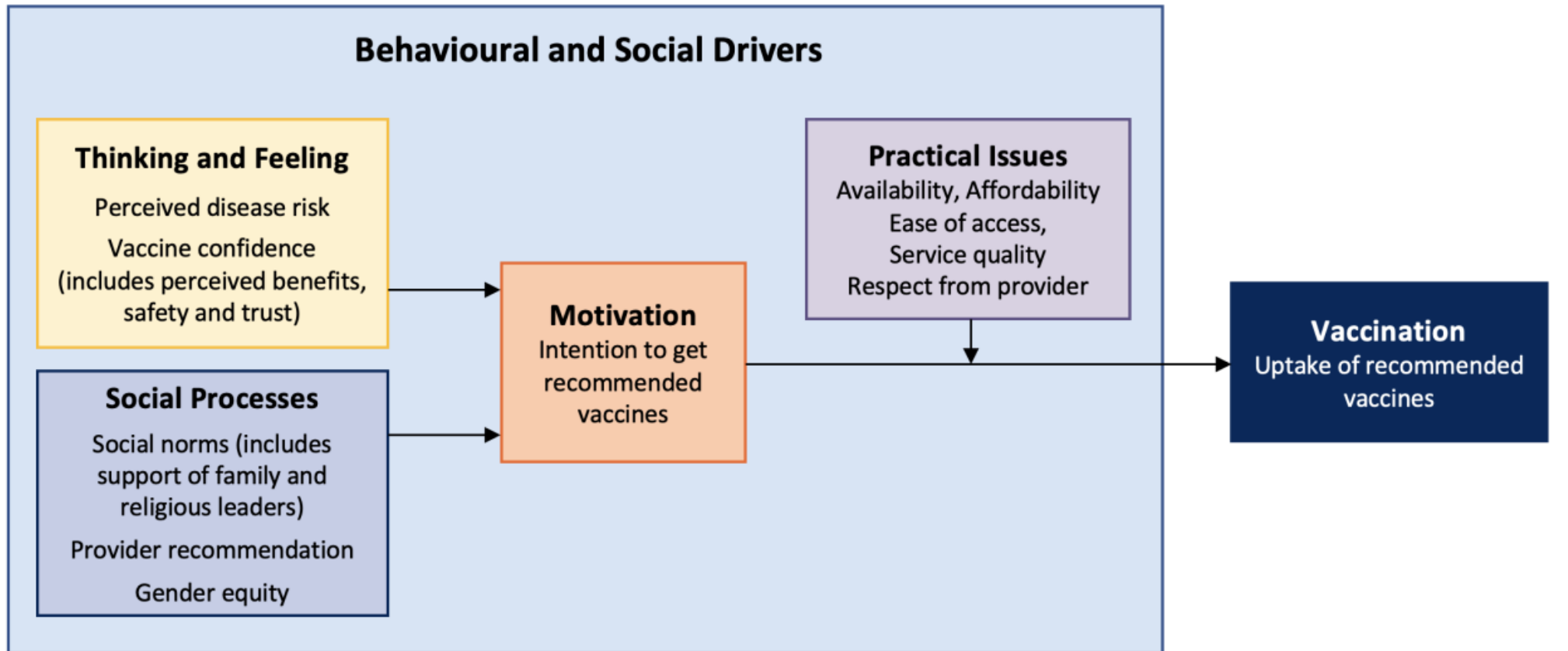


Figure 2. The Behavioural and Social Drivers (BeSD) Framework: Changeable Influences on Vaccination Uptake
 Figure adapted from the BeSD expert working group.^{13,14} Based on the Increasing Vaccination Model (IVM).¹⁹

3C's → 5C's Vaccine Hesitancy

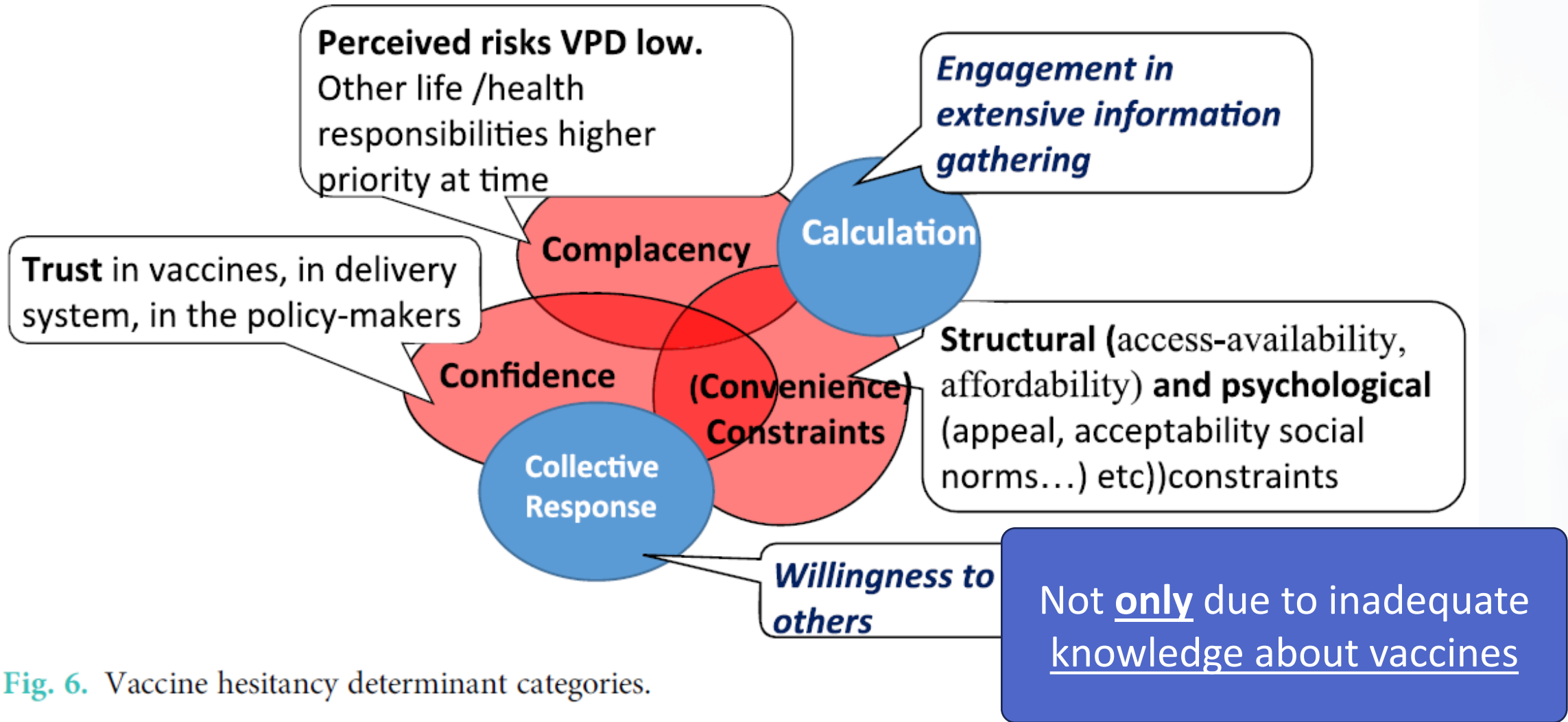


Fig. 6. Vaccine hesitancy determinant categories.

A faint, light blue background image showing medical equipment. In the center, there is a large, clear glass vial. To its right, a medical syringe is positioned diagonally. In the background, several other smaller vials are visible, creating a sense of a laboratory or medical setting.

Potential solutions

What interventions are effective for increasing vaccination in children and youth?

- Optimize **access**:
 - School-based vaccination programs
 - Public Health campaigns
- Optimize **confidence**:
 - Provider Recommendation
 - Reminders and Recall



Vaccine acceptance, hesitancy and refusal in Canada: Challenges and potential approaches

Dubé E^{1*}, Bettinger JA², Fisher WA³, Naus M⁴, Mahmud SM⁵, Hilderman T⁶

Table 1: Attitudes toward vaccination, with proposed counseling strategies¹

Vaccine position	Counseling strategies ²
Vaccine acceptors	<ul style="list-style-type: none">• Encourage / promote resiliency.• Explain common side effects and rare adverse events.• Use verbal and numeric descriptions of vaccine and disease risks.
Vaccine hesitant	<ul style="list-style-type: none">• Build rapport, accept questions and concerns.• Establish honest dialogue, provide risk and benefit information about vaccines and diseases.• Use decision aids and other quality information tools.• Book another appointment to re-visit discussion, if needed.
Vaccine refusers	<ul style="list-style-type: none">• Avoid debating back and forth about vaccination.• Aim to keep discussion brief, but leaving door open to further discussion.• Inform about risks of non vaccination.• Offer attendance at a special clinic³.

¹ Adapted from Leask (65) and Healy & Pickering (63)

² Most strategies are applicable to all groups

³ Specialists in some countries offer clinics for children who have experienced an adverse event following immunization (66)

WHAT IS SIC?



The Special Immunization Clinic (SIC) Network aims to improve the assessment and management of patients with medically challenging adverse events following immunization (AEFIs) and underlying medical conditions that may complicate immunization.



SIC conducts standardized assessments of patients with previous AEFIs and underlying medical conditions, and assesses the risk of AEFI recurrence following revaccination.



SIC evaluates vaccine safety, immunogenicity and coverage in immunocompromised patients across six provinces.



SIC has built a national registry of patients assessed in the clinics and their outcomes after vaccination.



SickKids Immunization InfoLine



Do you have questions about immunization in childhood or pregnancy?

SickKids Immunization InfoLine offers families comprehensive information from a trusted health-care professional about all immunizations offered during childhood and pregnancy. The service offers phone appointments with a SickKids nurse to talk about immunizations in a secure and non-judgmental environment.

This service is free to Ontario residents and families
are encouraged to book a consultation online:
www.sickkids.ca/immunizationinfo



Scan the QR code to book an appointment now

Contact information

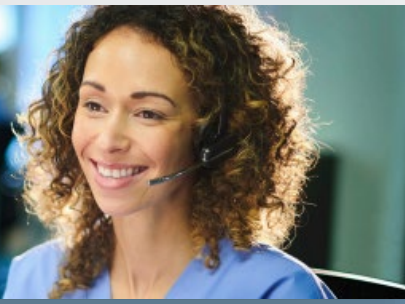
Email: immunizationinfo@sickkids.ca

Phone: 416-813-8101 ext. 308101



Immunization
InfoLine

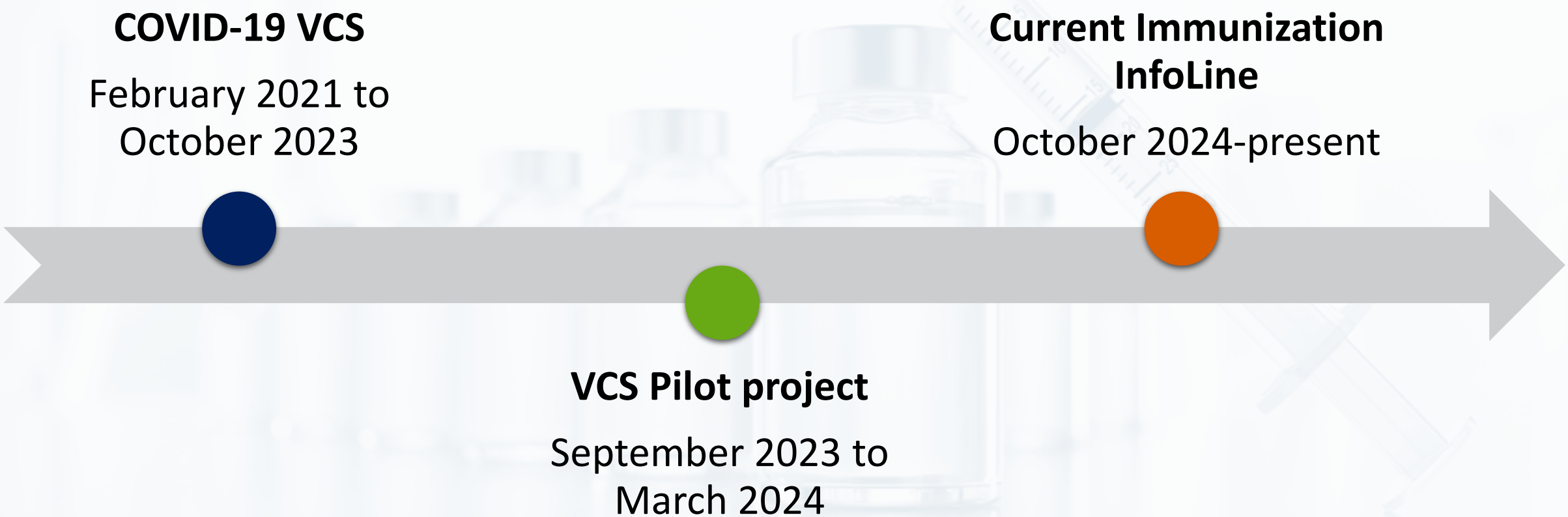
SickKids



- The SickKids Immunization InfoLine is a by-appointment phone service that provides a safe, judgment-free space to have an open conversation about immunizations. The consult service provides expert guidance for children, youth and those who are pregnant, breastfeeding, or planning to conceive.
- Phone appointments with one trained nurse (1.0FTE) with support from pediatric infectious diseases physicians as needed, or referrals to the SickKids Special Immunization Clinic.
- It is available in multiple languages, using over-the-phone language interpretation.



Timeline



The SickKids COVID-19 Vaccine Consult Service

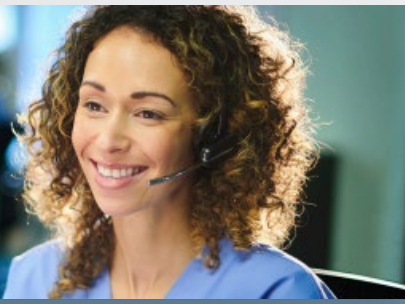


- Stop COVID-19 in Kids was established to address COVID-19 vaccine uptake and confidence in children aged 5-11 years of age. The project was funded by the Immunization Partnership Fund from 2021 to 2023.
- The SickKids COVID-19 Vaccine Consult Service (VCS): By-appointment phone service that provides a safe, judgment-free space to have an open conversation about COVID-19 vaccines. The consult service provided expert guidance for children, youth and those who are pregnant, breastfeeding, or planning to conceive.
- The COVID-19 VCS service was available from October 2021 to February 2023.



Learnings from the COVID-19 VCS

- Surge capacity was important at the time of new recommendations (relevant for VPD outbreaks?);
- Lots of questions around process of immunization development and vaccine safety (relevant for RSV and pneumococcal immunizations?);
- Callers appreciated having time to discuss concerns and being referred when needed;
- Follow-up calls were useful in establishing relationship and trust with caller.



How to book a consultation?

- Appointments can be easily scheduled using the online booking form. The consult should be booked using the name and address of the child or pregnant person.
- Language support can be indicated when booking; contact us 24 hours before booking time if not indicated in booking form.
- The Vaccine Consult RN will call the number provided at the time of appointment. Appointments are typically 30 minutes in length.
- **NO restriction** on number of appointments that can be booked, we provide ongoing support!
- Once booked:
 - Confirmation email with link to an intake form with some questions will be sent to patient/caregiver to help us prepare for the consult
 - Appointment can be cancelled via the confirmation email and then rebook online for another time

Immunization InfoLine

SickKids Immunization InfoLine (formerly Vaccine Consult Service) offers families comprehensive information from a trusted health-care professional about all immunizations offered during pregnancy and childhood. Through a scheduled phone consult with a specially trained nurse, you will have the opportunity to have an open, one-on-one conversation and ask questions about immunizations in a secure and non-judgmental environment.

The Immunization InfoLine provides **information and guidance** about immunizations. We are not an immunization clinic and do not offer immunizations. Immunization services must be obtained through your health-care provider or local public health unit. For inquiries about travel-related vaccinations, we recommend contacting the [SickKids Family Travel Clinic](#) or another trusted travel clinic that can provide specific and accurate guidance based on your individual needs.

The Immunization InfoLine supports residents of Ontario who:

- Have questions or concerns related to children's immunization and/or immunization during pregnancy.
- Have questions about immunizations for a child with a complex medical history and/or an immunocompromising condition or treatment

[Book a consult](#)

<https://www.sickkids.ca/en/care-services/support-services/immunization-infoline/>

Email: immunization.infoline@sickkids.ca

Phone: 416-813-8101

Thursday 1 May 2025

[8:30 AM](#)[9:30 AM](#)[10:30 AM](#)[12:30 PM](#)[1:30 PM](#)[2:30 PM](#)[3:30 PM](#)

Monday 5 May 2025

[11:00 AM](#)[2:00 PM](#)[3:00 PM](#)[4:00 PM](#)[5:00 PM](#)[6:00 PM](#)

Tuesday 6 May 2025

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Wednesday 7 May 2025

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Search Criteria

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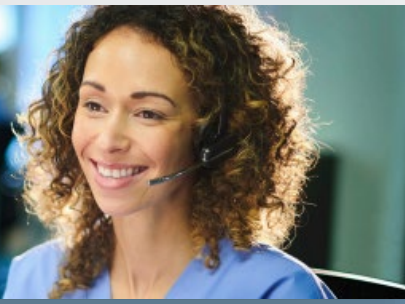
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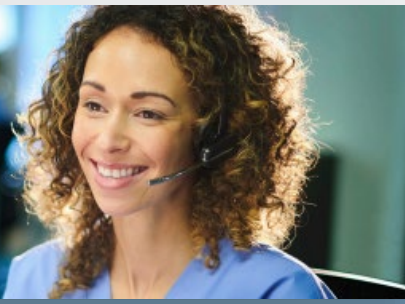


Role of the InfoLine RN

- The Vaccine Consult RN supports with:
 - Education and guidance to allow for the parent/caregiver and/or patient to make informed decisions
 - System navigation
 - Resources
 - Referrals to appropriate programs
 - Clinical follow-up call in 3-6 months
- Out of scope:
 - Travel-related vaccines, we recommend contacting the SickKids Family Travel Clinic or other travel clinics
 - Not an immunization clinic and do not offer immunizations

Communication strategies

- Initial dissemination through internal channels including to physicians and other healthcare workers
- SickKids social media, including messaging around:
 - RSV and nirsevimab
 - Pertussis outbreaks and importance of immunization
 - **Measles outbreaks** and importance of immunization
- Through the Toronto District School Board
 - Very efficient to reach parents / target audience
- Community partnerships (PH, NGOs)



Overview of calls

- Ongoing analysis and evaluation



Learnings thus far



- School networks and social media very efficient in reaching parents
- Handling surges of calls related to media interest following key public health events (e.g. measles) and promotion of the service to the general public through the media
- Routine immunizations provided by primary care providers – less opportunities for vaccination than with COVID-19 (issues related to vaccine access)

InfoLine: Next steps and evaluation



- **InfoLine:**

- Analysis of number of calls, reasons for calls and outcomes of the calls
- Ongoing follow-up appointments 3-6 months after initial call

- **Surveys:**

- Assessment of callers' satisfaction through post-call survey under a quality improvement framework

- **Communication and dissemination:**

- Ongoing social media messaging, especially around cases/outbreaks of VPDs
- Messaging to parents through school boards/networks
- Traditional media
- Public Health – thank you!

Thank you! Questions & comments?

InfoLine team:

Jasdeep Singh

Adria Rose

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Rawan Hijazi

Upton Allen

Shaun K. Morris



Email: pp.piche-renaud@sickkids.ca

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