

BC COVID-19
STRATEGIC RESEARCH
ADVISORY COMMITTEE

**Knowledge gaps relevant to
COVID-19 vaccine rollout in BC**

January 29, 2021

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Introduction

What are the most critical questions research must answer to optimize the safety, speed and impact of a COVID-19 vaccine program rollout? This document, produced by the BC COVID-19 Strategic Research Advisory Committee (SRAC), summarizes a rapid gap analysis in late 2020 towards determining these questions.

The document will be used by SRAC to advise on research related to vaccine rollout in BC, including through the SRAC Vaccine Evaluation Working Group (VERG — see appendix for terms of reference), established to advise the Immunize BC Operations Centre Committee (IBCOC). IBCOC provides oversight and governance for the planning, implementation and administration of the COVID-19 mass immunization campaign and reports to the Deputy Minister of Health and the Provincial Health Officer with ultimate accountability to the Minister of Health and the Premier.

Use of the document, which is posted to the SRAC website, is also encouraged by the research community, including funders who aim to support research that will assist in BC's vaccine rollout, and researchers applying to funding opportunities.

SRAC recognizes this document was created at one point in time in a rapidly evolving environment. Therefore, readers are encouraged to visit the BC Academic Health Science Network [Inventory of COVID-19 Research](#) for a listing of research underway, and/or to visit the SRAC webpage for updates or to contact us with questions.

Process and Themes

To create the gap analysis, input was sought in late 2020 from public health practitioners, the Immunize BC Operations Committee, and the BC Provincial Health Officer. In addition, a Twitter consultation was conducted, as well as review of the National Advisory Committee on Immunization (NACI) [Research Priorities for COVID-19 Vaccines to Support Public Health Decisions](#) statement¹ and the BC COVID-19 Strategic Research Advisory Committee's (SRAC) [BC COVID-19 Strategic Research Framework](#).²

Six themes were developed from the input and reviews

- Vaccine effectiveness — preventing illness and infection
- Vaccine effectiveness — reducing transmission
- Vaccine immunogenicity
- Monitoring for adverse effects
- Concerns of British Columbians
- Equitable access

In addition to the vaccine-specific themes, SRAC notes there is also an opportunity to study the effectiveness of the vaccine rollout itself. For example, to what extent did it prevent mortality and morbidity in the BC population; were the right populations prioritized; was the plan — including logistics, communications and strategies to encourage uptake — well-executed, and more. Additional questions will arise from the rollout as well, for example, the role of vaccine use in the control of clusters and outbreaks pending full population coverage, or the need for mandatory vaccination of workers who expose others to risk.

As stakeholders review and prepare to act on the themes and questions in the next section, SRAC advises careful consideration of:

- What needs to be studied in the BC population vs. what can be learned from studies in other jurisdictions?
- What would ideally be studied as part of a Canada-wide or at least multi-province effort?
- What evidence needs to be generated through research vs. being rapidly gathered and synthesized?
- What are immediate and urgent questions vs. important but less immediate?
- What is needed to ensure research evidence is not just generated, but put into action (e.g. working with policy makers and other ‘end users’ from the beginning)?

Themes and Questions

1. What is the effectiveness of the vaccine in preventing illness and infection?

- Comparative effectiveness of the various vaccine products in the BC population — real-time effectiveness evaluations.
- Effectiveness in populations not represented in clinical trials (e.g. pregnant women, children and immunocompromised people).
- Impact of prior infection with COVID-19 or seasonal coronaviruses on vaccine effectiveness and impact of vaccination on future infection with coronaviruses.
- Effectiveness of immunization for those who receive only the first dose of a two- dose series.
- Exploration of any risk of antibody-dependent disease enhancement.

2. What is the effectiveness of the vaccine in reducing transmission?

- Determine if immunization also prevents asymptomatic infection and onward transmission.

3. What is the immunogenicity of the vaccine?

- Characterize the humoral and cell-mediated protective immunity elicited by the vaccine products.
- Understand correlates of protection following vaccination.
- Explore the impact of prior infection with COVID-19 or seasonal coronaviruses on humoral and cell-mediated immunity and impact of vaccination on future infection with coronaviruses.

4. How do we monitor for adverse effects following immunization (AEFI)?

- Assess the rate of AEFIs with vaccine rollout across all vaccine products (and how they compare to the background rates of these symptoms).
- The rate of AEFIs in children, immunocompromised individuals, pregnant and breastfeeding individuals and others excluded from the trials.
- Vaccine safety data for groups excluded from the trials.

5. What concerns do British Columbians have about the vaccine?

- Establish which groups of people have which concerns.
- Where do these groups of people get their health-related information and whom do they trust?
- How can trusted community leaders be supported to provide information and address concerns?
- How can social media networks be used to distribute information and address concerns?
- How can existing institutions (e.g. schools) and their programs be used to inform specific groups (e.g. youth) and encourage conversation about vaccines and the COVID-19 vaccination?

6. How do we deliver equitable access to vaccination?

- How can equitable access to vaccination be ensured for racialized communities that have been disproportionately affected by COVID-19 in BC?
- How can vaccine best be provided to persons with mobility issues or who live in rural/remote locations (in the context of storage/distribution challenges)?
- How can culturally-safe vaccine rollout be best established for Indigenous peoples identified to be most at risk of severe COVID-19 infection?
- How can ongoing monitoring of VE and AEFI among Indigenous peoples who are vaccinated be culturally-safe?

¹ NACI. *Research Priorities for COVID-19 Vaccines to Support Public Health Decisions*. Available from: <https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/research-priorities-covid-19-vaccines.html>

² BC COVID-19 SRAC (Dec 2020). *BC COVID-19 Strategic Research Framework: An Evolving Guide for Decision-Makers and Researchers (Issue 2)*. Available from: https://www.msfrh.org/sites/default/files/SRAC%20Framework%20Issue2_dec4.pdf

Appendix: Vaccine Evaluation and Research Group (VERG) Terms of Reference

Purpose

The purpose of this Working Group is to identify and support research activities that can inform a fast, safe, and effective mass COVID-19 immunization for the citizens of British Columbia.

Term

The Working Group was formed on December 9, 2020 and will continue at the call of the BC COVID-19 Strategic Research Advisory Committee and the Immunize BC Operations Centre Committee.

Structure and membership

The Working Group

The Working Group reports to the BC COVID-19 Strategic Research Advisory Committee and will provide advice to the Immunize BC Operations Centre Committee through the Director/Incident Commander, Dr. Ross Brown.

Dr. David Patrick is the Chair of the Working Group.

The Working Group is supported by the BC COVID-19 Strategic Research Advisory Committee.

Secretariat

Secretariat support will be provided by the BC COVID-19 Strategic Research Advisory Committee. Judith Hutson is the Project Manager/Secretariat for this Working Group.

Meetings and meeting frequency

Meetings will be chaired by Dr. David Patrick and will be scheduled twice a week.

Membership

Members	Organization
David M. Patrick (Chair) Director of Research and Medical Epidemiology Lead for Antimicrobial Resistance Co-Chair BC COVID-19 Strategic Research Advisory Committee	BCCDC
Judith Hutson (Secretariat) Project Manager/ Secretariat BC COVID-19 Strategic Research Advisory Committee	BC COVID-19 SRAC
Victoria Schuckel Executive Director, Research and Technology Member, BC COVID-19 Strategic Research Advisory Committee	BC MOH
Monika Naus Medical Director, Communicable Diseases & Immunization Service/ Medical Head, Immunization Programs & Vaccine Preventable Diseases	BCCDC
Brent Gabel Research Analyst, Communicable Diseases and Immunization Service	BCCDC
Danuta Skowronski Epidemiology Lead, Influenza & Emerging Respiratory Pathogens, BCCDC	BCCDC
Mel Krajden Medical Director, BCCDC Public Health Laboratory Medical Head, Hepatitis - Clinical Prevention Services, BCCDC	BCCDC
Michael Otterstatter Senior Scientist and Epidemiologist, BCCDC	BCCDC
Kate Smolina Director of the BC Observatory for Population & Public Health, BCCDC	BCCDC
Gina Ogilvie Senior Public Health Scientist, BCCDC	BCCDC

Members	Organization
Hannah Lishman, PhD Postdoctoral Research Fellow, UBC School of Population and Public Health, BC Centre for Disease Control - Community Antimicrobial Stewardship	BCCDC
Manish Sadarangani Director, Vaccine Evaluation Center, BC Children's Hospital Research Institute	BC Children's Hospital Research Institute
Julie Bettinger Vaccine Safety Scientist, Vaccine Evaluation Center, BC Children's Hospital Research Institute	BC Children's Hospital Research Institute
Alice Virani Director, Ethics Service, Provincial Health Services Authority Member, BC COVID-19 Strategic Research Advisory Committee	PHSA
Martin T Schechter Professor, Faculty of Medicine, School of Population and Public Health, UBC Member, BC COVID-19 Strategic Research Advisory Committee	UBC