

Evaluating the safety and immunogenicity of SARS-CoV-2 vaccines among underserved urban populations

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Background

- People who use drugs (PWUD) and people living with HIV(PLWH) are at an increased risk of SARS-CoV-2 infection and COVID-19-related morbidity and mortality
 - Risk factors: congregate living, drug use, HIV infection
 - Eight-fold increase in the odds of coronavirus infection among people with a substance use disorder (SUD)
 - Two-fold increase in the hazard ratio of COVID-19 mortality among people living with HIV
- The Downtown Eastside of Vancouver was prioritized for vaccination in January 2021 due to a high concentration of PWUD and PLWH.
 - Pop-up clinics (e.g., OPS, housing sites, parks)
 - Outreach among homeless population, congregate living settings
 - Incentives: \$5 cash or gift cards offered for vaccination



COVID-19 vaccines. The facts.

It's healthy to ask questions.

Here are some answers about the COVID-19 vaccine.

- ✓ The vaccine is free for everybody.
- ✓ The vaccine is not mandatory.

The more of us that are vaccinated, the more we can keep ourselves, each other and the community safe.

Who can get the vaccine?
Soon, every adult who wants a vaccine will be able to get one. Currently the vaccine is being given in a priority order.

- Top priority is staff and residents in long-term care homes where most deaths have occurred.
- Those who cannot isolate or maintain physical distance due to events in their life and/or where they live are also a priority group.

I already had COVID-19; should I still get the vaccine?
Yes, talk to a health-care provider about getting a vaccine.

How long will the COVID-19 vaccine protect me?
We don't know yet; scientists are currently studying this.

Can I get the vaccine if I have allergies?
Individuals with allergies NOT related to vaccines (such as food, animal, environmental or latex allergies) can get vaccinated. As always with any vaccine, after getting vaccinated you should wait 15 minutes in the clinic to monitor for a reaction.

Talk to a health-care provider if you:

- Have a serious allergy to polyethylene glycol (PEG). For example, Restoral AX is a common treatment for constipation and contains PEG.
- Have had a serious allergic reaction to the FIRST DOSE of the COVID-19 vaccine.

Side-effects are expected, but you don't have to be scared.

- The vaccines CANNOT infect you with COVID-19.
- No one has died from the COVID-19 vaccine.

It is normal to experience minor reactions and it is a good thing! It means your immune system is responding to the vaccine and building the tools that are needed to protect you against the virus.

What are the side-effects of COVID-19 vaccines (Pfizer and Moderna)?
Side-effects from both vaccines are similar to those from other vaccines. They may occur within 7 days of getting vaccinated, and should only last 1-2 days. They include:

- Soreness, swelling and redness where the vaccine was given

Less common side-effects include:

- Tiredness/fatigue
- Headaches
- Muscle aches/soreness
- Fever/chills
- Joint pain/aches

If your side-effects are severe or last longer than expected, please see a healthcare provider.

BC Centre for Disease Control

<https://www.cbc.ca/news/canada/british-columbia/dtes-herd-immunity-1.6000828>

<https://theyee.ca/News/2021/01/06/COVID-19-Holds-Steady-DTES/>

Objectives

1. Characterize vaccination uptake, hesitancy and adherence to vaccine protocols among structurally marginalized population of PLWH in Vancouver;
2. Estimate the immunogenicity of coronavirus vaccines and the durability of SARS-CoV-2-specific immune response following vaccination;
3. Document adverse effects following vaccination

Methods

- Recruited from an ongoing cohort of structurally marginalized people in downtown Vancouver
 - ACCESS cohort: Adults, HIV-positive, report unregulated drug use in the last six months
- Three study visits, each two months apart (N=275)
 - Interviewer administered questionnaire, dried blood spot
- Baseline characteristics:
 - 44% racialized individuals, 74% in congregate living, 36% HCV+, 6% homeless.

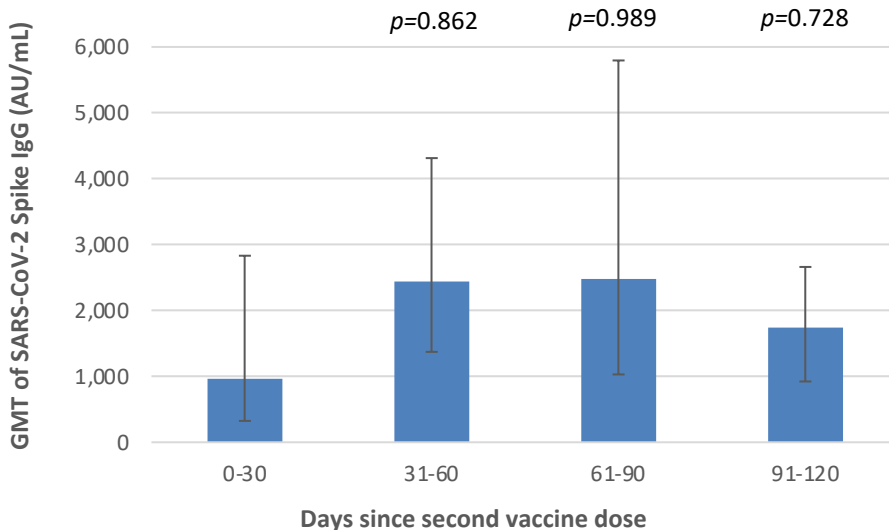
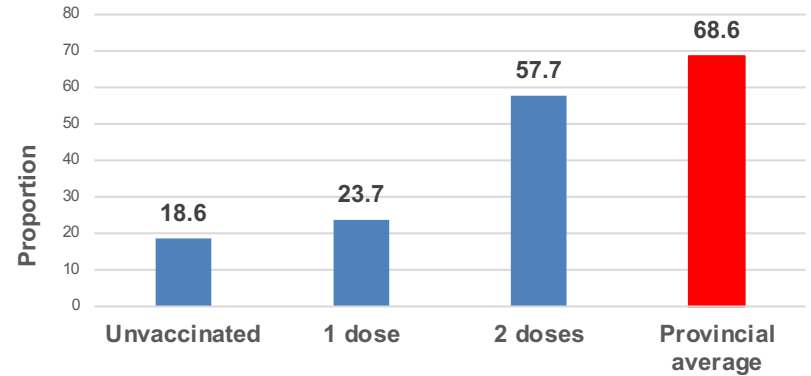
Results

Vaccine uptake (September 2021)

- Two doses: 58%, unvaccinated: 19%
- Suspected COVID-19 infection was associated with lower vaccine uptake

Adverse events

- No serious adverse events were reported
- Adverse events did not vary significantly across socio-demographic, substance use or clinical subgroups



Immunogenicity

- We did not observe and significant associations between socio-demographic, substance use or clinical factors and anti-SARS-CoV-2 Spike IgG response

Discussion

- Vaccine uptake among this marginalized urban population was below provincial rates at the time of data collection (50% vs. 69%).
- However, vaccination rates as low as 7.6% have been observed among people who use drugs in other settings.
- The targeted vaccination campaign employed in Vancouver may be a model for improving vaccine uptake in other jurisdictions with similar marginalized populations.
- Adverse events and vaccine immunogenicity did not appear to vary across sociodemographic, substance use or clinical subgroups.
- Given that suspected prior COVID-19 infection was associated with lower odds of vaccine uptake, education efforts focused on the benefits of vaccination among those with previous COVID-19 exposure may be worthwhile among marginalized populations with high rates of COVID-19 infection.

