# Mpox vaccination in Canada:
## Successes, challenges, & lessons for future outbreak response

**Devon Greyson, PhD, MLIS**

**Western Canada Immunization Forum**

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# Disclosures

- I DO NOT have a relationship, financial or otherwise, with for-profit companies (including as an employee or owner) or not-for-profit organizations, within the past two years, to disclose.

- The research presented here, and all my funded research, is supported by public funding (federal, provincial, or public university funds).

- This presentation makes no therapeutic recommendations, and refers to brand names only when necessary for clarification of available options for mpox vaccines.

Intro / Study / Findings / Implications / Next

# Objectives

1. Describe barriers and facilitators to mpox vaccination in the recent Canadian outbreak

2. Recognize the importance of public health/community collaboration in building trust in vaccination



# Agenda

1. About the Mpox Vax study

2. Findings: Barriers & Facilitators

3. Implications: Better Together

4. Questions & Discussion

Intro / Study / Findings / Implications / Next

# The Mpox Vax Study

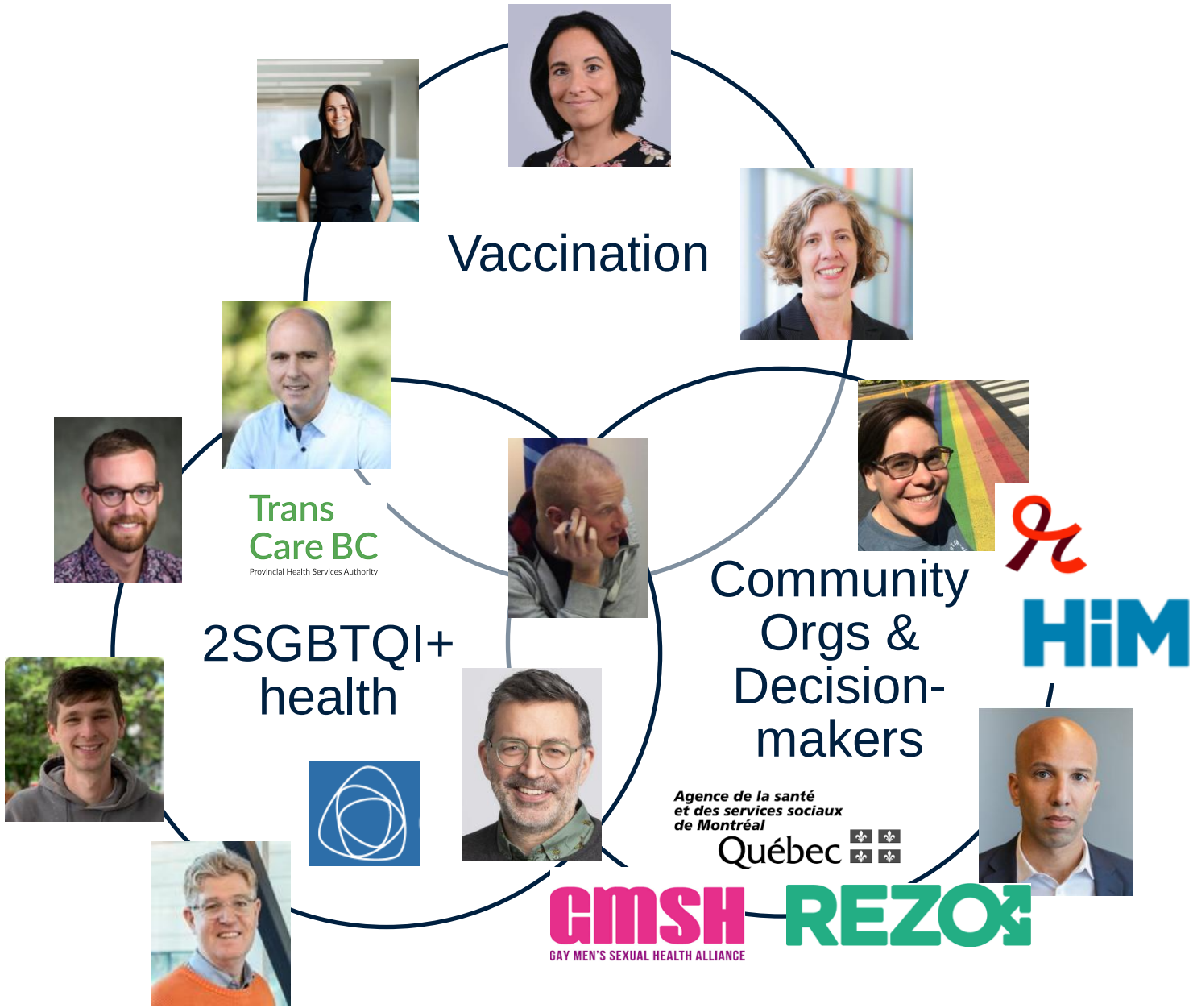
# Mpox vaccination in Canada

1. **In 2022 we started seeing mpox outbreaks** in previously non-endemic countries. Most people who got mpox in Europe and North America were part of GBMSM+ communities.
2. Mpox can be excruciatingly painful, life threatening to immunocompromised people, and teratogenic.
3. **Most people under age ~50 have no immunity** b/c smallpox vaccination ended in 1970s.
4. Canada, starting with Montreal, was **global leader in pre-exposure mpox vaccination** in 2022.

**…HOW DID IT GO?**

Intro / Study / Findings / Implications / Next

# Investigative Team



# Additional Team Members

**Research Staff:** Gerry Goh (BC), Caroline Mniszak (BC), Marie-Ève Trottier (QB)

**Trainees:** Helena Godinho Nascimento (ON), Gabrielle Ouellet (QB), Jefferson Pacis (BC), Ty Sounthong (BC), Michelle Takeuchi (BC)

**Funders:** Canadian Institutes of Health Research, Canadian Immunization Research Network



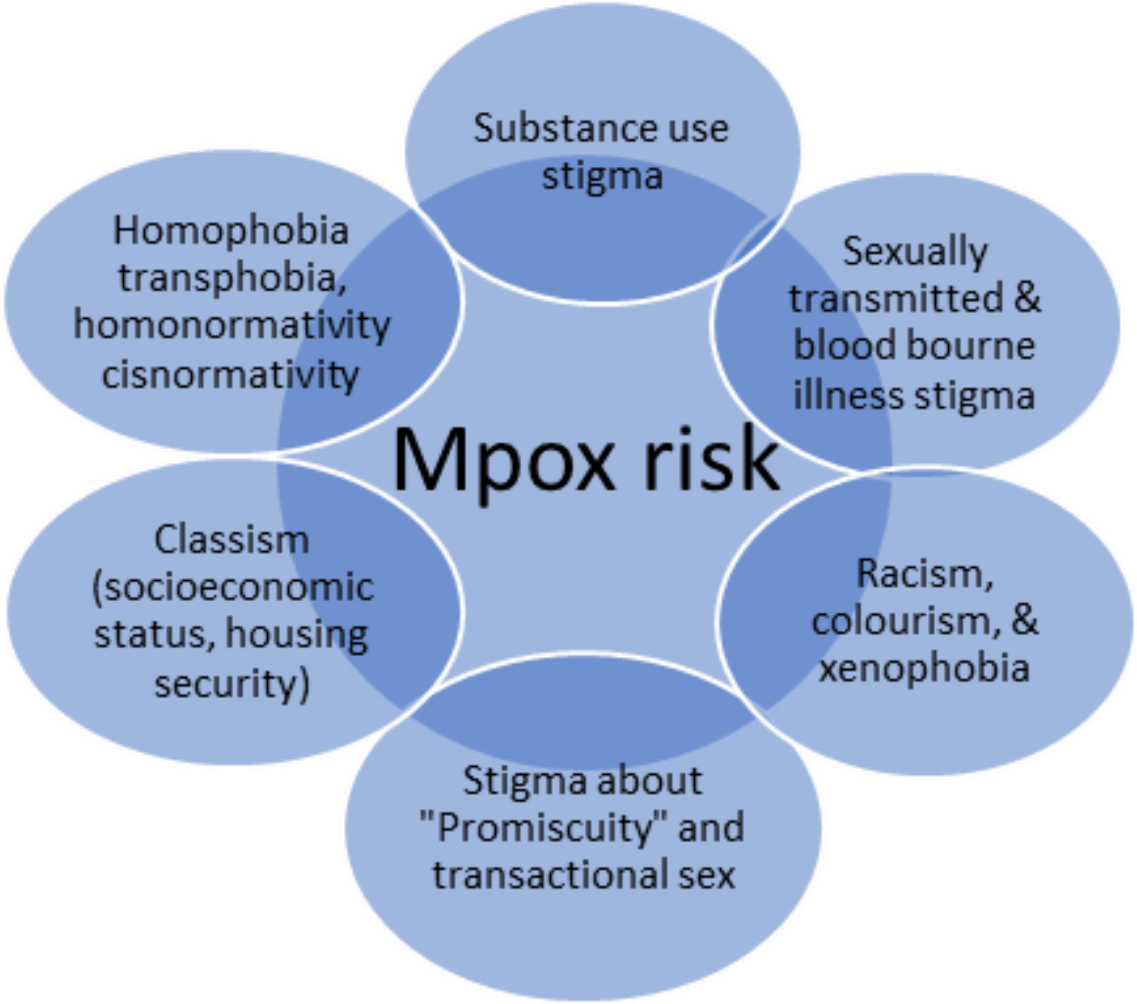
# Study Aim

**Overall:** Assess successes & shortcomings of the targeted pre-exposure preventive vaccination campaigns against mpox

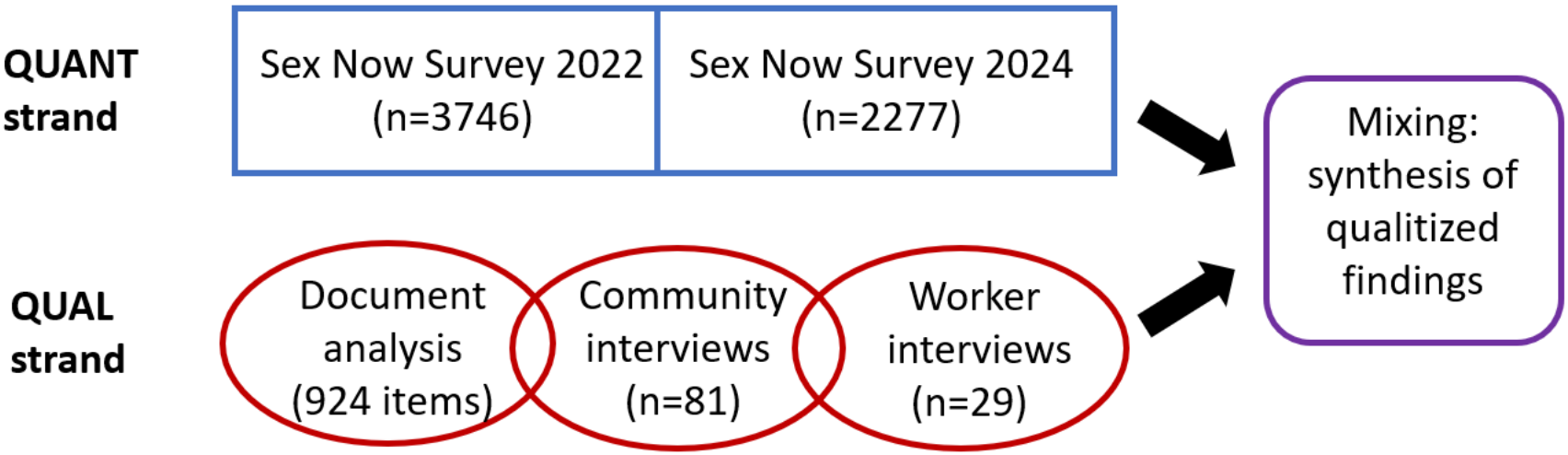
- In BC, ON, QC (>90% of Canadian cases)
- Focus on GBTMSM+
- Special emphasis on including underrepresented populations (PLWH, trans people, sex workers)



# Attention to stigma & discrimination that can increase risks



# Mixed Method Approach



# Interview Participants

| | BC | ON | QC | Total |
|---|---|---|---|---|
| **Community** | 34 | 19 | 28 | **81** |
| **Workers** | 12 | 6 | 11 | **29** |
| **Total** | **46** | **25** | **39** | **110** |

- 8 were “dual role”: workers who were also members of affected communities (classified as workers here)
- QC interviews were in French, BC/ON in English



# Descriptions of community participants

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| **Province** | |
| **BC** | 34 |
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| **QC** | 28 |
| **Language** | |
| **English** | 53 |
| **French** | 28 |
| **Mpox vaccine doses received** | |
| **0** | 14 |
| **1** | 14 |
| **2+*** | 53 |
| **Gender** | |
| **Men (cis or trans)** | 67 |
| **Women (cis or trans)** | 1 |
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| **Formal education completed** | |
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* Some participants reported more than 2 doses, which may have occurred due to childhood smallpox vaccination or being recommended 3 doses due to immunocompromise, as well as potentially to error or confusion.

** Responses not mutually exclusive; may total larger than study n.

# FINDINGS: What went well? What needs improvement?

# Rapid Rollout of Innovative PrEP Vaccination

- **May 30, 2022:** Quebec began offering Post Exposure (PEP) vaccination in Montréal, location of most mpox cases at that point in the outbreak
- **June 3, 2022:** Quebec became among the first to offer Pre-exposure (PrEP) vaccination with MVA-BN vaccine
- **June 10, 2022:** NACI interim guidance on the use of MVA-BN vaccine (Imvamune®) in the context of mpox outbreaks in Canada
- By **August 28, 2022:** >70,000 people vaccinated with at least 1 dose!



# Outbreak Control: Widely Considered a Success

- Nationally, **cases peaked** summer 2022
  - Western Canada outbreak just getting started then
- **Canada acted quickly** to build supply and distribute 145,000 MVA-BN doses May-Dec
- **Outbreak controlled** by combination of: case & wastewater surveillance, mpox detection & prevention communications, PEP & PrEP vaccination



# Challenges and Uncertainty

- Lack of prior evidence on effectiveness
- Lack of predictability of outbreak trajectory
- Nature of vaccine supply as part of National Emergency Strategic Stockpile
- Unclear/changing/inconsistent eligibility criteria




Photo by Matthew Garoffolo on Unsplash

# Information Barriers

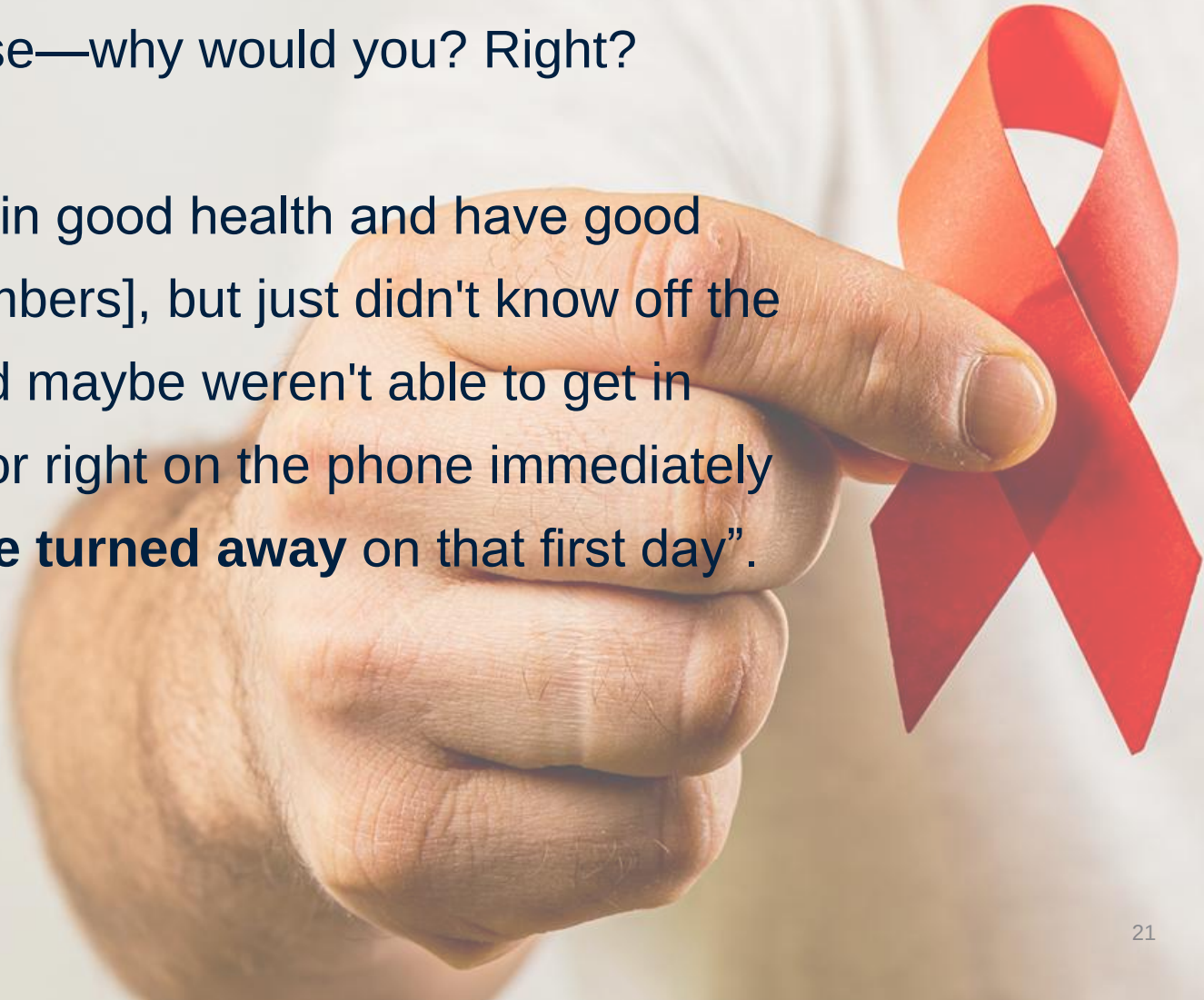
- While emerging science and outbreaks may change over time, inconsistencies in vaccine communication (e.g., about CD4 count, prior smallpox vaccination, doses and subQ vs ID administration, eligibility criteria) created confusion and stress.

- Many community members, even ones who also worked as immunizers, were unaware of the community consultation that occurred and thus had lower trust in recommendations.



“If you're someone who's been HIV+ for a long time, and you're on medication, and your treatment is quite stable, you might not know [your lab results] off the top of your head, because—why would you? Right?

“So, people who are in good health and have good [CD4+ cell count numbers], but just didn't know off the top of their head, and maybe weren't able to get in touch with their doctor right on the phone immediately to get that info—**were turned away** on that first day”.



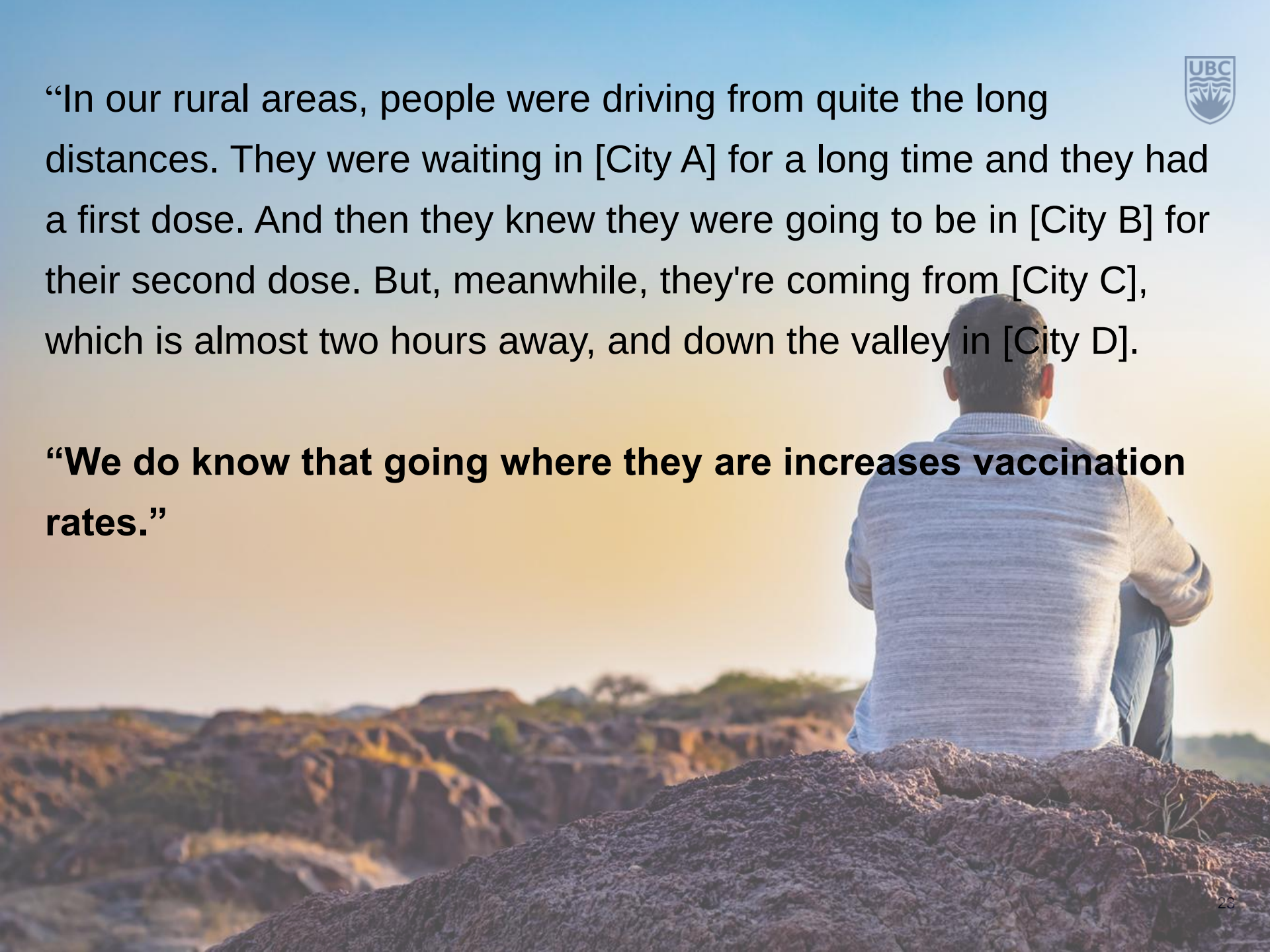
# Other Access Barriers

- While **social media and online access** to immunization information and booking facilitated access for many, it excluded the more marginalized and otherwise offline.

- **Long lines and limited availability** of vaccination, especially in initial outbreak, were a deterrent.

- **Geographic access** outside major urban centres was minimal.





"In our rural areas, people were driving from quite the long distances. They were waiting in [City A] for a long time and they had a first dose. And then they knew they were going to be in [City B] for their second dose. But, meanwhile, they're coming from [City C], which is almost two hours away, and down the valley in [City D].

**"We do know that going where they are increases vaccination rates."**

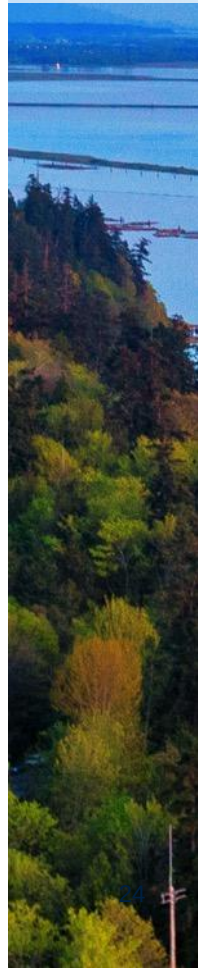
# Cultural and Stigma Barriers

- Not all workers were comfortable screening participants or talking about the sex lives of GBTMSM+ and sex workers.

- Even those with sexual health competency did not necessarily understand how this history of the HIV epidemic informed community reactions to this outbreak.

- This all took a particular toll on workers who were also community members, who experienced microaggressions, stress, and sometimes moral distress.





“Here it comes again”

“Another outbreak—what’s next?”

“Will the government throw us under the bus again?”

# Facilitators of Vaccination (and vaccine equity)

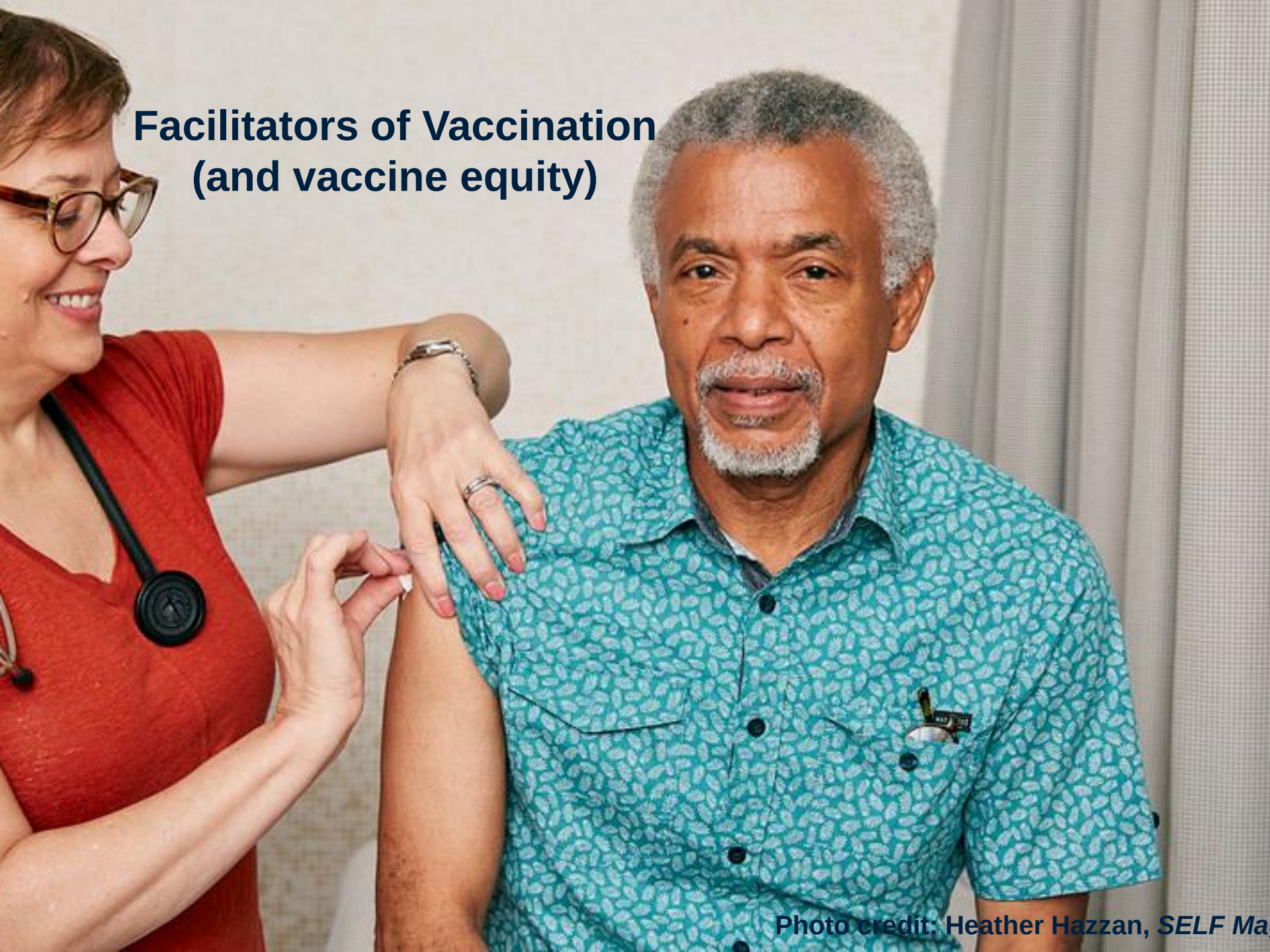


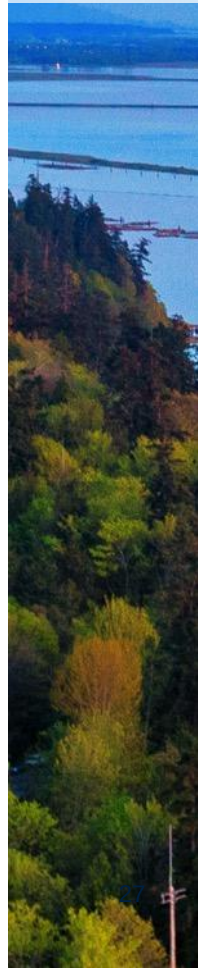
Photo credit: Heather Hazzan, *SELF Ma*

# Confidence and Trust

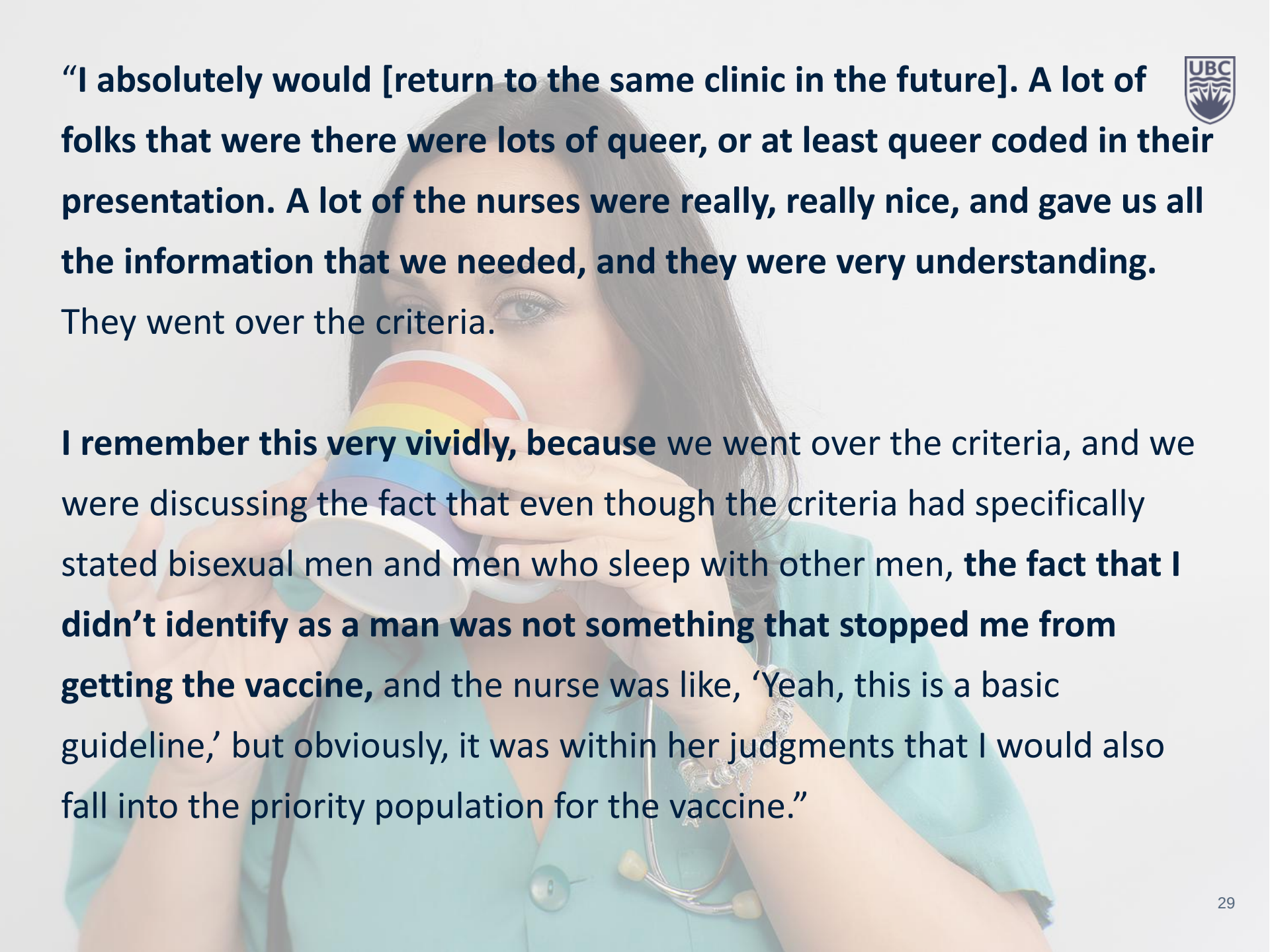
- In vaccination overall
- In specific mpox vaccination services, including trust that services would be:
  - Private and confidential
  - Competent, safe, affirming re: GBTMSM+ sexual health
  - Familiar enough with community to understand hesitancy through historical lens (HIV)
- Recommendation of trusted clinician, as always.

➢ Dual role workers carried a large burden in this area; we owe them gratitude and support





**“I trust the scientists and public health officials to do their job and determine that they are safe and effective.”**

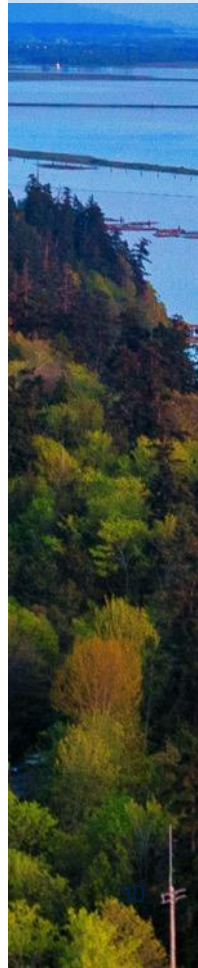


**“I absolutely would [return to the same clinic in the future]. A lot of folks that were there were lots of queer, or at least queer coded in their presentation. A lot of the nurses were really, really nice, and gave us all the information that we needed, and they were very understanding.** They went over the criteria.

**I remember this very vividly, because** we went over the criteria, and we were discussing the fact that even though the criteria had specifically stated bisexual men and men who sleep with other men, **the fact that I didn’t identify as a man was not something that stopped me from getting the vaccine,** and the nurse was like, ‘Yeah, this is a basic guideline,’ but obviously, it was within her judgments that I would also fall into the priority population for the vaccine.”

# Convenient Access

- Pop-up vaccination opportunities appreciated by many, reached people who would not have otherwise been vaccinated.
  - *Note:* There were some mixed feelings about community outsiders staffing or attending these pop up clinics creating an increased feeling of vulnerability.
- Clinics run or co-run by trusted community orgs.
- Co-administration (e.g., with COVID-19 vaccine) ideal for convenience.



Here in Montréal, there was a COVID vaccination center on Maisonneuve Boulevard, and that's where they were giving the monkeypox vaccine. **It worked out well because I needed to get another dose for COVID. I took advantage of the opportunity** and decided to get both, one in each arm, while I was at it .

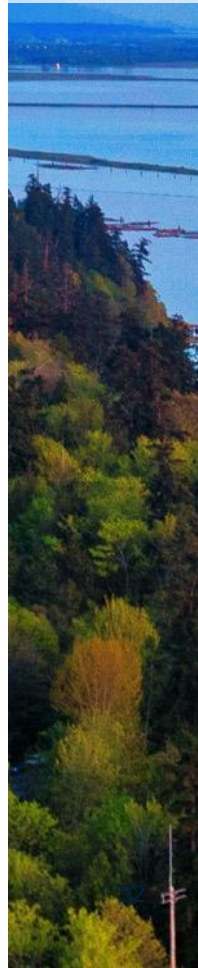
# Community Solidarity

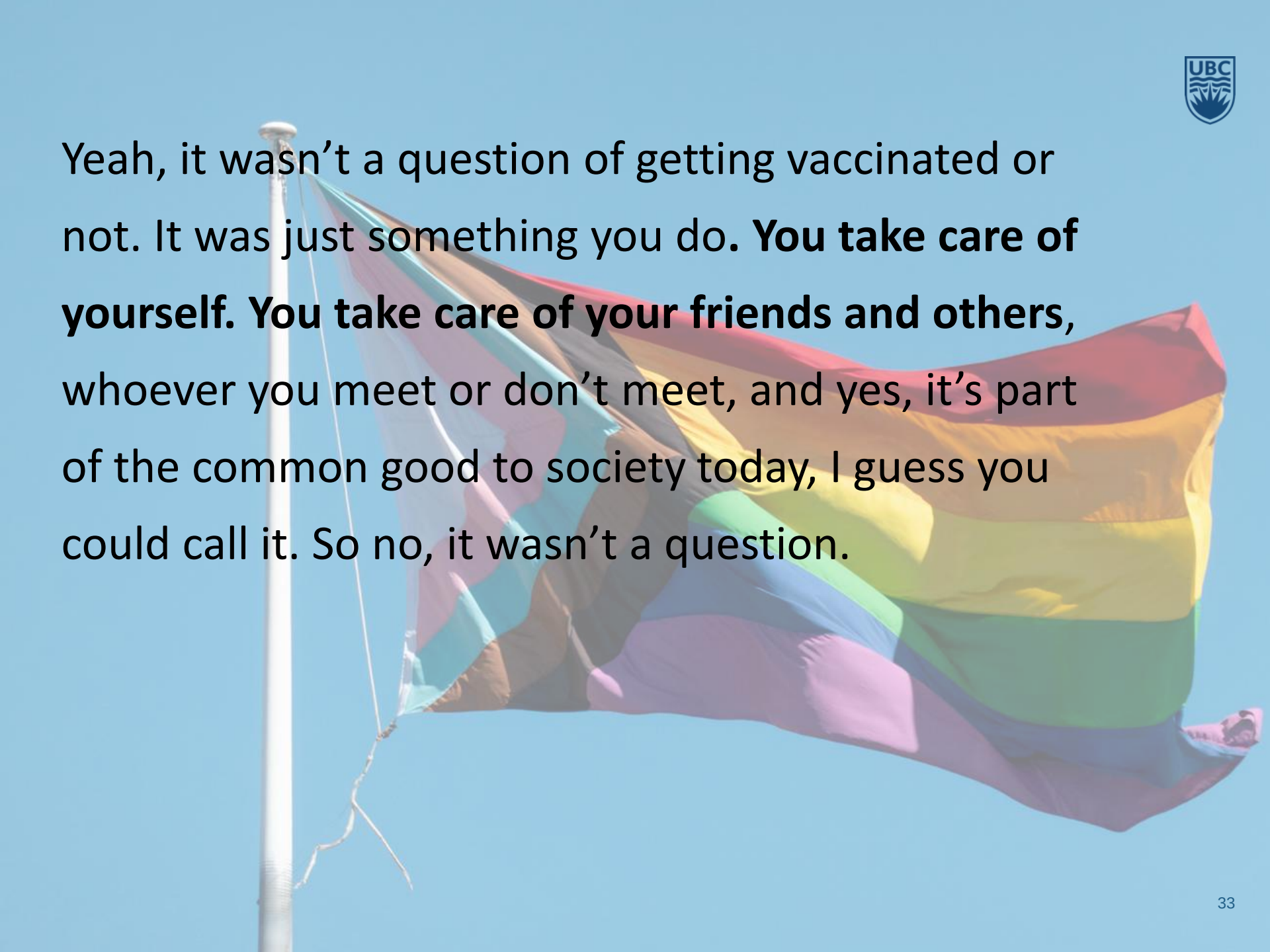
- Again, legacy of HIV and past stigmatization was influential to community solidarity.

- Mpox vaccination framed as tool of empowerment for individual and community, important for preserving the queer spaces necessary for people to be out and safe.

- Partners supported vaccination intentions and urgency.







Yeah, it wasn't a question of getting vaccinated or not. It was just something you do**. You take care of yourself. You take care of your friends and others**, whoever you meet or don't meet, and yes, it's part of the common good to society today, I guess you could call it. So no, it wasn't a question.

# Collaboration is Key

## Public health, buy-in from gay and bisexual men helped get Canada's mpox outbreak under control

Outbreak peaked this summer but is now 'receding,' WHO doctor says

Ben Andrews · CBC News · Posted: Dec 27, 2022 1:00 AM PST | Last Updated: December 27, 2022

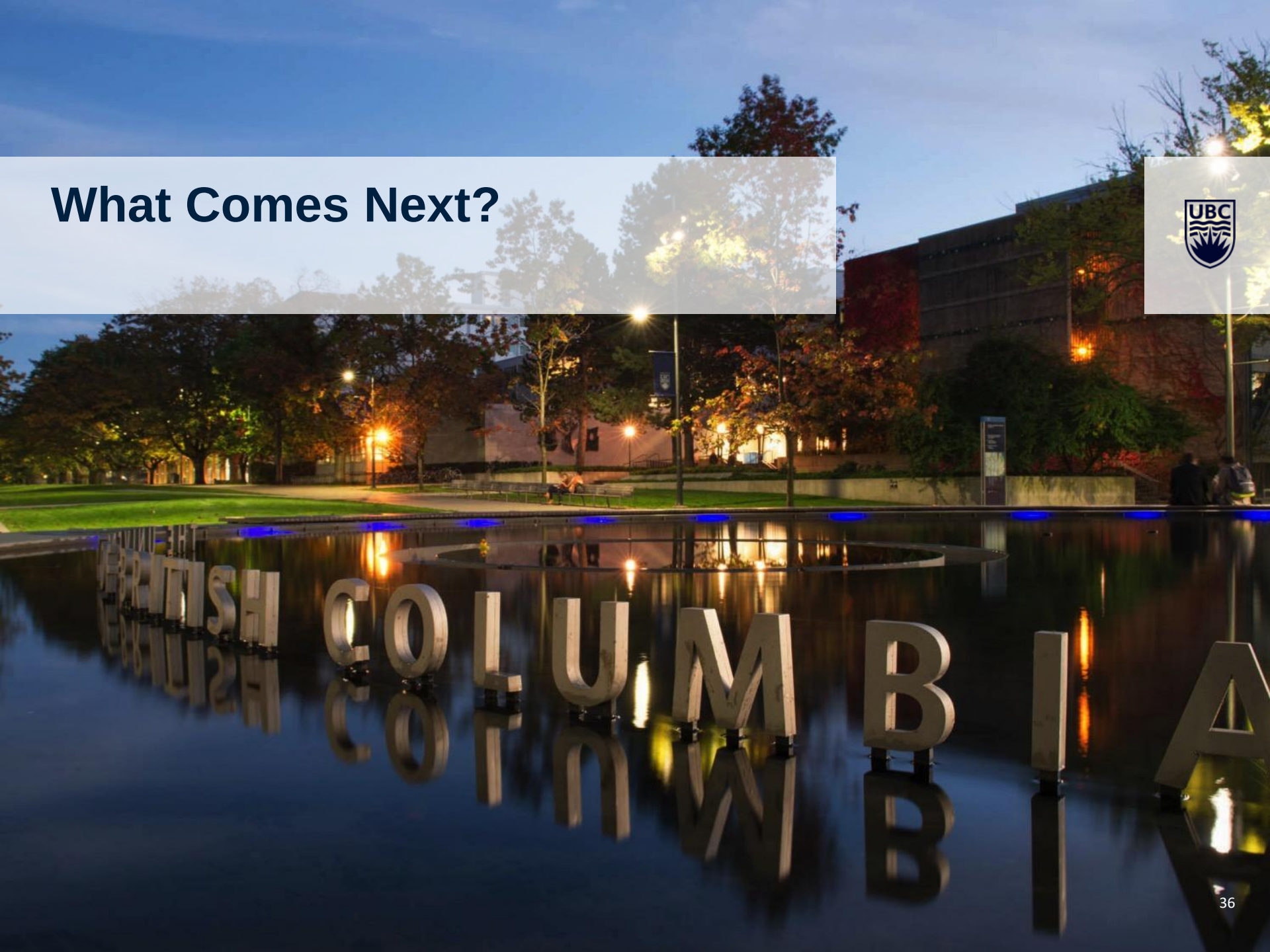
Listen to this article
Estimated 6 minutes


In Canada, the U.S and around the world, the current outbreak of the disease has overwhelmingly affected men who have sex with men. (Dado Ruvic/Illustration/Reuters)

# Partnerships, relationships, and competencies

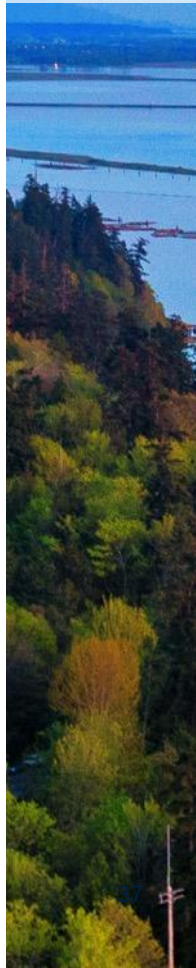
- Strong partnerships with community orgs are key—but you must maintain the relationships between crises!
- The most-marginalized populations may only trust grassroots, face-to-face, local and established relationships.
- Public health comfort and competencies can improve; this will benefit workers as well as service recipients.
- Be aware of what histories are shaping services and community trust (e.g., COVID-19, HIV)

# What Comes Next?



# Building Competencies, Addressing Stigma

- Need to consider and deal with STBBI stigma, both for highly-affected population access and general population acceptance.
  - Building immunizer and primacy care comfort and knowledge discussing 2S/GBTMSM+ sexual behaviours and recommending vaccination.
  - Destigmatizing STBBI in general population may help vaccine uptake for multiple pathogens.

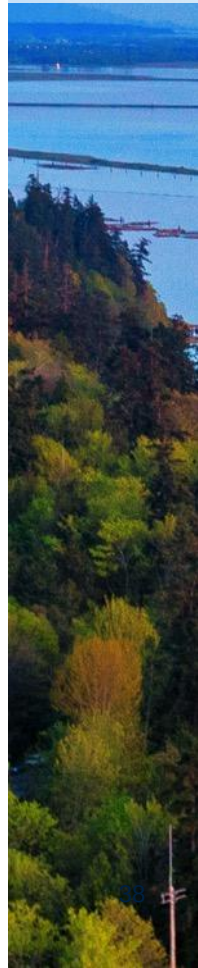


# Building More Inclusive Vaccination Systems

- Relationships strengthened through mpox response can be leveraged for other STBBI vaccination, but must be maintained and nurtured to do so.
  - Kudos HIM and BCCDC for co-developing a provincial STBBI response roundtable that includes vaccination!

- How can we apply this kind of relationship-building to other communities (e.g., farm workers and poultry hobbyists for HPAI)?



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Thank you! Questions?

# Methods: recruitment

Recruitment for qualitative interviews with community members and workers included the following methods:

1. Posting advertisements on social media platforms (i.e., Facebook, Instagram), which were shared by community partners.
2. In-person presence at community partner venues
3. Sharing ads via professional networks.



# Methods: eligibility

Folks were eligible to take part in this study if they:

- Resided in British Columbia, Ontario or Québec;
- Were 18 years of age or older;
- Speak and understand spoken English (BC and ON) or English or French (QC);
- Identified as either **A)** a member of a group offered pre-exposure (preventive) mpox vaccination in 2022 or 2023 in Canada, or **B)** were a worker (paid or volunteer) who was involved in communicating about, organizing, or providing pre-exposure mpox vaccination in BC, ON, or QC in 2022 or 2023.



# Methods: data collection

1. We conducted semi-structured video interviews using Zoom & recorded audio. A handful of community member interviews were conducted in-person at a community partner venue.

2. Interviewees completed socio-demographic surveys, which included questions about the participants and their mpox vaccination status.

3. Interviewers wrote notes, which included reflections before, during and after the interview.



# Methods: data processing

Interview audio files transcribed → Transcripts accuracy checked → Transcripts are member checked → Transcripts imported into NVivo for coding

Observation notes typed up → Finalized notes into NVivo for coding

Online Surveys (REDCap) → Data summarized in graphs and tables

# Methods: data analysis

1. Familiarization with the data

2. Systematic inductive coding, starting at granular “line coding” level, around the research questions plus other things that came up for us.

3. Theoretical coding, or finding the relationships among the codes, to identify the “story” in these data.



# STUDY PARTICIPANTS
## Socio-demographic information

# Descriptions of community participants

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