


25^{es} journées annuelles de santé publique

Mayo boo Monitoring for COVID-19 in Eeyou Eenou Istchee

Dr. Catherine Dickson Medical Advisor Public Health
Reggie Tomatuk Environmental Health PPRO
Cree Board of Health and Social Services of James Bay

Montreal
March 14, 2023



Outline

- ▶ Background on wastewater testing
- ▶ How our system is set-up
- ▶ Community-driven surveillance
- ▶ Applications of our data
- ▶ Challenges and limitations
- ▶ Future applications of wastewater surveillance in Eeyou Istchee



**Community-driven project.
Requested by community
leaders.**

**Supported by National
Microbiology Laboratory.**

The case for wastewater surveillance in remote communities

- ▶ The need for information to guide local decisions.
- ▶ Limited testing capacity.
- ▶ Testing fatigue.
- ▶ Rapid tests now mean less information is reported.

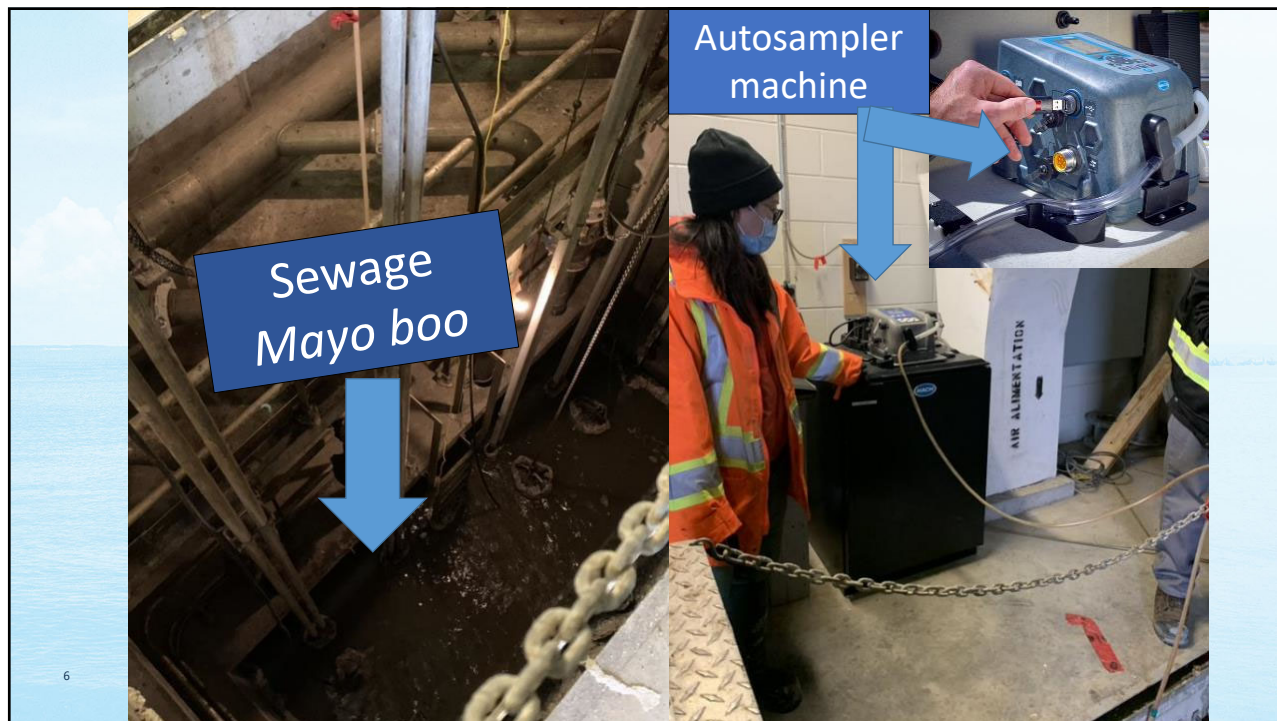


Covid-19 Wastewater Surveillance in Remote Locations

- ▶ Wastewater testing typically requires multiple instruments and specially trained individuals (Daigle et al., 2022).
- ▶ These resources are often limited to large laboratories.
- ▶ Shipping delays may also reduce the ability of surveillance systems in remote locations to act as early warning systems.
- ▶ The GeneXpert system has been proposed as an alternative to conventional labs for wastewater testing in remote locations (Daigle et al., 2022).



5



The samples are shipped by Cree Health Board charter flights from communities to Chisasibi for laboratory testing.

The environmental health lab in Chisasibi is located next to the wastewater lagoon.

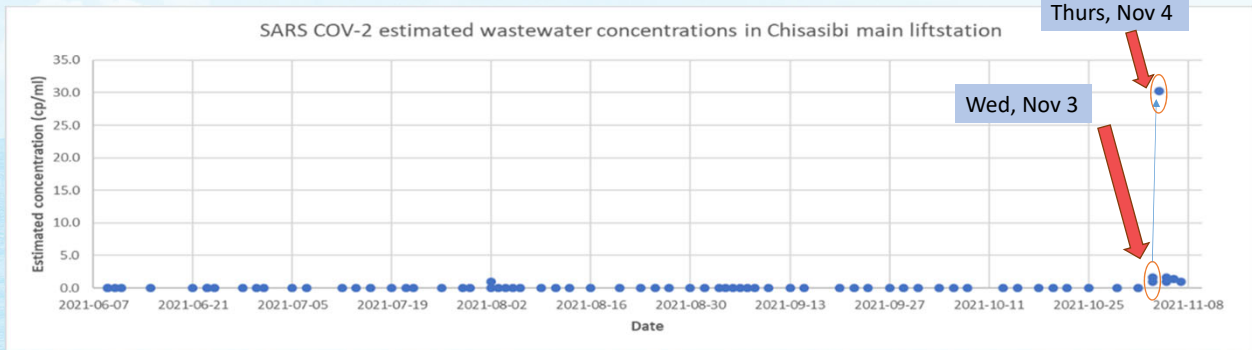
Our team of 3 Cree local lab technicians run the samples through the GeneXpert PCR. Results are available within 2 hours.

Samples are shipped to the National Microbiology Laboratory (NML) for validation and typing.

Sewage sample

PCR = Polymerase Chain Reaction

COVID-19 detection in a COVID-zero state



9

Cree Nation of Chisasibi
November 5 at 3:41 PM · 🌐

ATTENTION Chisasibi Members and Residents!
You must get tested for COVID-19:

- 👉 if you have any COVID-19 symptoms (such as cough, shortness of breath, fever, runny nose); or,
- 👉 if you entered Chisasibi between October 29 and November 3, 2021 and haven't been tested yet since your arrival.

BOOK YOUR TEST HERE: <https://bit.ly/3wjOx37>

👍 6 18 Shares

👍 Like 💬 Comment ➦ Share

Cree Nation of Chisasibi
November 4 at 7:41 PM · 🌐

A Special Message from CNC Emergency Operations Committee 📢
Thursday, November 4, 2021 10:15 pm

Cree Nation of Chisasibi
Chisasibi (Quebec)

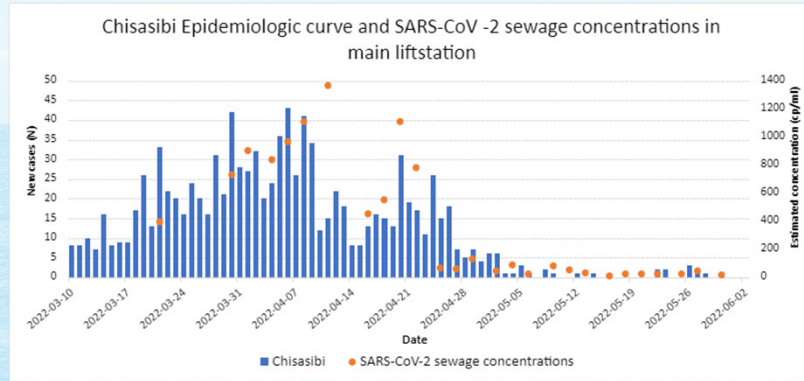
A MESSAGE FROM
EMERGENCY OPERATIONS TEAM

SPECIAL COVID-19 STATEMENT

November 4, 2021

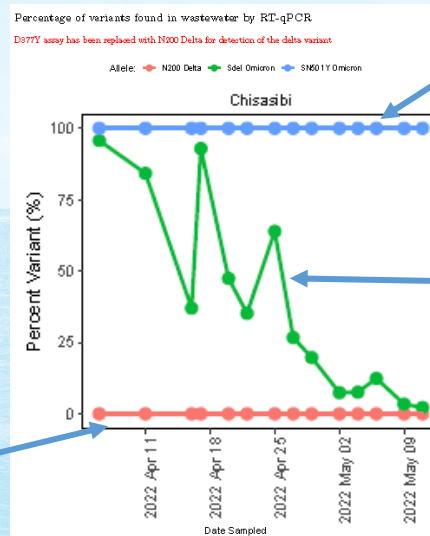
10

Monitoring data trends to inform interventions



11

Information about variants



Delta variant, not circulating

Either Omicron original or B2 subvariant. We know all or most of the COVID is one of these.

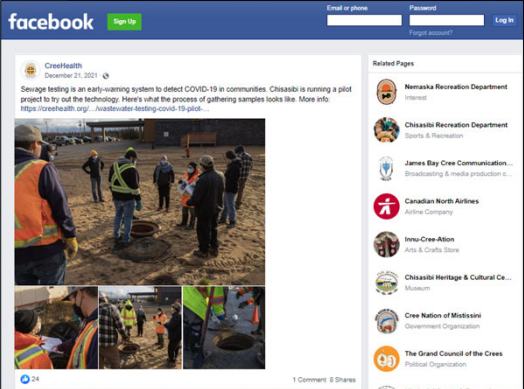
Only original Omicron variant. It's going down so B2 subvariant is now the dominant strain.

12

N200 Delta detects R203M which is associated with the delta variant.
 Sdel Omicron is associated with Omicron BA.1
 SM611 Omicron is associated with Omicron BA.1 and BA.2
 Please note percentages are a measurement of independent tests and will not equal 100%



Communications around wastewater testing.



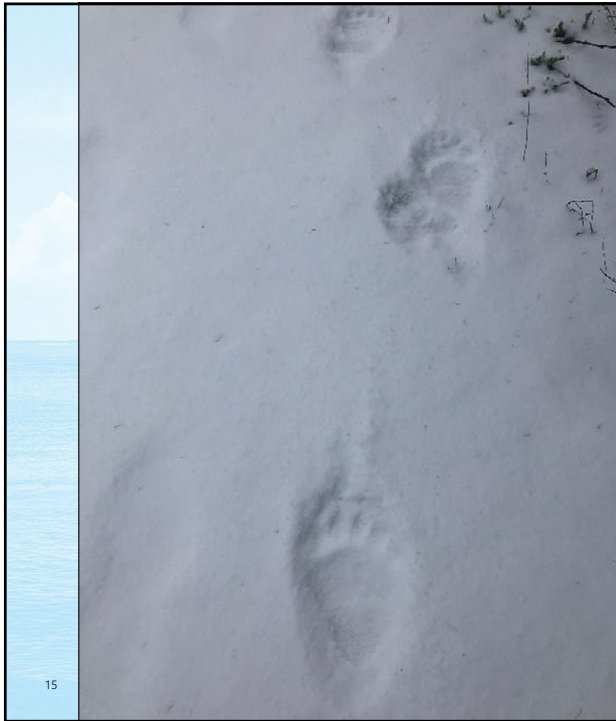
13



Wastewater workers training



14



15

You can not get COVID-19 from sewage.

When we find dead bits of virus DNA in the sewage, it's like finding a bear's tracks, not a live bear.



16

High school science class visit



The Sunday Magazine

Wastewater surveillance provides crucial COVID data, but also carries privacy concerns: scientists



Researchers say data from your poop is anonymous. Steve Hruddy says we need more assurances

Jonathan Ore - CBC Radio - Posted: May 29, 2022 4:00 AM ET | Last Updated: June 5



Challenges and limitations



17

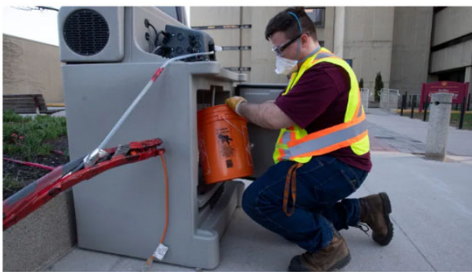
Ottawa

Wastewater testing a 'potentially powerful tool' in tracking the flu, epidemiologist says



'We're just adding some precision, some layers of data'

Udley Rana - CBC News - Posted: Aug 03, 2022 4:00 AM ET | Last Updated: August 3



Student Patrick D'Aoust places a wastewater collection container inside a pump station on the University of Ottawa campus on Thursday, April 8, 2021. (Adrian Wjod/Canadian Press)

18

Future applications of wastewater surveillance





Partners:

- Cree Board of Health and Social Services of James Bay regional public health
- Cree Nation Government
- Cree Nation of Chisasibi
- Cree Nation of Waskaganish
- Cree Nation of Mistissini
- Cree Nation of Waswanipi
- National Microbiology Laboratory

Meegwetch! Merci! Thank you!
Questions?



19