

CELL COUNT SPECIAL BULLETIN

January 2022, Issue #95

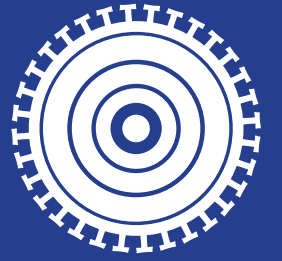


Illustration by Chad Potvin

This Cell Count Special Bulletin on COVID-19 contains current updates, information, resources and content for people inside about the virus, variants and vaccines. With this bulletin, we hope we can address some of the tension, misinformation and concerns regarding COVID-19 and the vaccines that you may have while incarcerated.

A WORD FROM THE EDITOR

Dear Cell Count reader,

Unprecedented times call for unprecedented responses to everchanging situations. This issue of Cell Count is a first of its kind: designed to address the current spike in COVID-19 infections and outbreaks that have been happening in prisons and jails across Turtle Island. This is a time when many people we know personally, either those we are doing time with, our families, friends and communities are testing positive or feeling upper respiratory tract symptoms that could indicate an infection.

The amount of information about COVID-19 and its variants has been overwhelming at times, and changing at seemingly lightning speed. This opens the door to a lot of confusion, fear, panic, misinformation and consequently, distrust of our public health officials and directives.

The truth is, because this is a new virus that transmits so quickly and easily and requires us all to take precautions to keep ourselves and others safe, we are all having to constantly adapt to new findings that can lead to new measures and guidelines. As we all know by now, the virus can mutate into variants that can either result in severe symptoms, like Delta, or spread very quickly and easily, like Omicron. This has resulted in new measures to try and keep hospitalizations and ICU numbers low so our healthcare system does not become overwhelmed, or even worse, result in a collapse.

For example, we here at PASAN went from being physically in the office and able to take phone calls from those of you who are incarcerated 4 days a week, back down to two days a week to keep our team from getting sick. We were also starting to visit some of the prisons again to deliver health and harm reduction groups and one-on-one supports, but Omicron has caused us to pause our visits again.

We are also closely monitoring the COVID-19 outbreaks that have been happening inside. We are thinking of you all as you go through more lockdowns, transfers, getting sick inside and being exposed to the virus in ways that are completely out of your control. We also commend you for taking as many precautions as possible to keep yourselves and others around you safe, especially in an environment where social distancing is often impossible, adequate PPE has been inconsistently available and access to information is constricted.

As many of you know, PASAN and Cell Count were formed in the early 1990's as a response to another crisis caused by a different virus: HIV/AIDS, which was being transmitted at a much higher rate in prisons than on the outside, but was largely being ignored by government officials and the general public. We worked to bring attention and change to help reduce transmission rates, increase access to testing, support those who became positive, combat stigma and ensure that people's health needs were taken care of. Over the years, through our support of not only prisoners living with HIV, but also those living with HepC, those who are vulnerable to overdose and other chronic health issues, mental health, and general wellbeing of people who are incarcerated, we have earned your trust over the last 3 decades. Our priority is the health and wellbeing of people who are currently or formerly incarcerated.

We put together this COVID-19 resource to deliver the most up-to-date information we could find to help you make the best decisions for your health. Our hope is, that with all of the work we have done to show we are solid and trust we've built with you, that you know you can rely on us to give you this information. We chose articles and resources that best reflect our stance on the various issues surrounding COVID-19.

We also understand that there has been

a lot of mounting tension between those who are vaccinated vs those who are not. As if we all needed another thing to fight about, right? But violence will not solve our problems nor disagreements about the right way forward. All we can do is encourage people to seek out reliable sources of information. If you know someone who could use this kind of information, hand them this issue of Cell Count or encourage them to subscribe or get in touch with us toll-free at 1-866-224-9978 or write to 526 Richmond St E, Toronto, ON M5A 1R3.

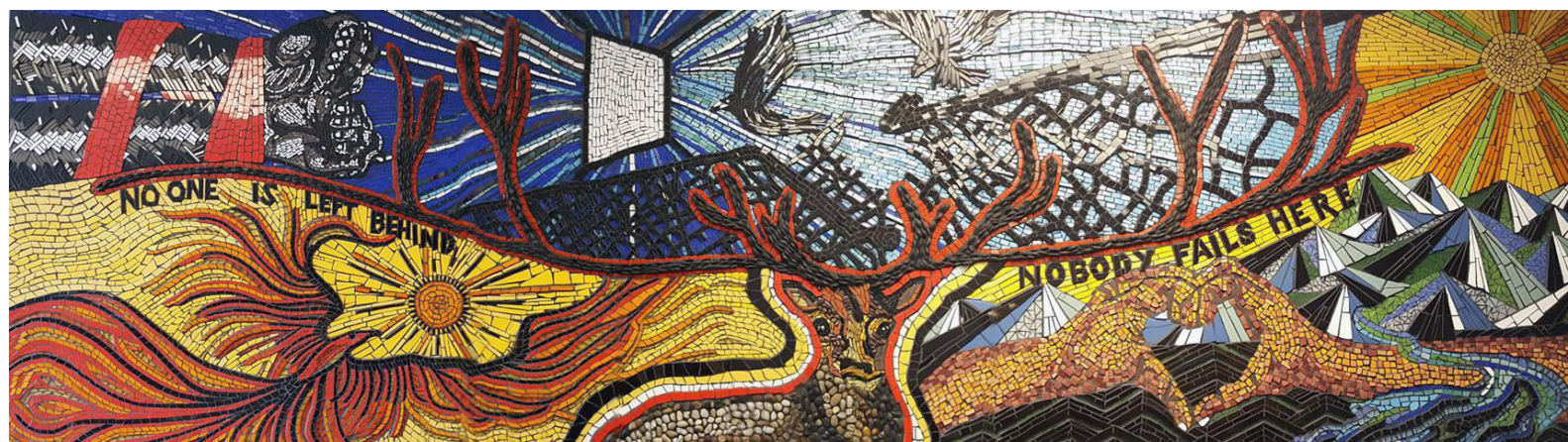
One thing we can agree on is that we are all pretty tired of it at this point. Just when we thought things were getting back to some level of normal, we get another curveball thrown at us with Omicron. It's times like these when it's most important to acknowledge the impact this pandemic is having on our mental health. Things we used to enjoy or little pleasures in life, maybe things we used to take for granted, are suddenly harder to do or access. The level of isolation has increased, especially for those of you inside. Programs are limited or not happening, delays to completing required parts of your correctional plan are throwing your parole eligibilities into question, court dates are being delayed, etc. All of these things take a toll on your mental health and wellbeing. Chris McNab, one of our federal workers, has been assembling worksheets to help get in touch with where you're at mentally and emotionally. If you have

someone you can trust to share some of what you're experiencing, please do. Depression, anxiety, grief, sadness, anger, frustration, boredom, these are things you don't have to hold in or deal with on your own.

We here at PASAN care about you a lot and we've been doing the best we can to continue to support you through these trying times. We hope you know you can turn to us when you need to, and that we can serve you to the best of our ability.



Cute dogs: This is Adele (orange) and Lassi (white). Here they are at PASAN's office, where they provide a lot of joy to our day.



PASAN is a community-based harm reduction/HIV/HCV organization that provides support, education and advocacy to prisoners and ex-prisoners. PASAN formed in 1991 as a grassroots response to the HIV crisis in the Canadian prison system. We strive to provide community development, education and support to prisoners and ex-prisoners in Ontario on HIV, Hepatitis C (HCV), overdose prevention and other harm reduction issues. Today, PASAN is the only community-based organization in Canada exclusively providing HIV and HCV prevention, education and support services to prisoners, ex-prisoners and their families.

SUPPORT SERVICES

- Individual support, informal coun-

selling, case management, pre-release planning, and referrals for those in custody living with HIV and/or HCV

- We assist our clients in accessing adequate medical care and support while incarcerated
- You can reach us via our toll free number at 1-866-224-9978. If you can't get through to us from our toll-free number, we also accept collect calls from prisoners across Canada at 416-920-9567, but we prefer people use our toll-free number
- Provide ongoing support, community development, resources and training for community groups across Ontario.

OUTREACH AND EDUCATION

- Conducts HIV/HCV and harm reduction workshops inside many of the provincial and federal adult institutions in Ontario
- Produces a newsletter, Cell Count, which contains article, poetry and art produced by current and ex-prisoners
- Facilitates Prison Life 101, HIV/HCV

prevention and harm reduction/overdose prevention trainings for agencies working with prison populations

- Assist agencies to start prison in-reach and support and act as a referral "hub" for HIV/HCV positive prisoners who are transferred from one region to another, to ensure continuity of support
- Peer health/harm reduction workers where ex-prisoners assist those who are currently incarcerated, about to be released, or already released to get medical and health needs met.

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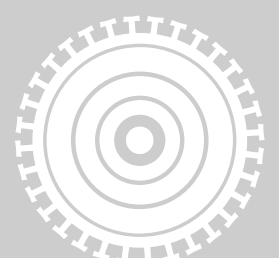
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Cell Count Contributors to this issue
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Front cover art: **Chad Potvin**

If you would like to contribute art, poetry, articles or another creative works you think will fit well in Cell Count, please submit your work to: Cell Count, 526 Richmond St E, Toronto, ON M5A 1R3. We will resume our regular version of Cell Count next issue, and will be taking submissions for our next issue until February 15th, 2022. The theme for next issue will focus on Black History Month, so we encourage submissions around that topic, but we will accept work about other topics as well.



WHAT IS OMICRON?

UNICEF, December 17, 2021

What is the Omicron variant?

The Omicron variant of COVID-19 has been called a variant of concern by WHO based on the evidence that it has several mutations that may have an impact on how it behaves. There is still substantial uncertainty regarding Omicron and a lot of research underway to evaluate its transmissibility, severity and reinfection risk.

How did the Omicron variant develop?

When a virus is circulating widely and causing numerous infections, the likelihood of the virus mutating increases. The more opportunities a virus has to spread, the more opportunities it has to undergo changes.

New variants like Omicron are a reminder that the COVID-19 pandemic is far from over. It is therefore essential that people get the vaccine when available to them and continue to follow existing advice on preventing the spread of the virus, including physical distancing, wearing masks, regular handwashing and keeping indoor areas well ventilated.

It is also crucial that vaccines and other public health measures are accessible everywhere. Vaccine inequity leaves lower income countries – many of them in Africa – at the mercy of COVID-19. Well-supplied countries must urgently deliver the doses they promised.

Where is the Omicron variant present?

The Omicron variant has now been detected in many countries around the world. WHO reports that Omicron is probably in most countries, even if it hasn't been detected yet.

Is the Omicron variant more severe than other COVID-19 variants?

Early findings suggest that Omicron might be less severe than the Delta variant, but more data is needed and WHO warns that it should not be dismissed as "mild". Studies are ongoing and this information will be updated as it becomes available.

It is important to remember that all variants of COVID-19 can cause severe disease or death, including the Delta variant that is still dominant worldwide, which is why preventing the spread of the virus and reducing your risk of exposure to the virus is so important.

Is the Omicron variant more contagious?

Omicron is spreading more quickly than other variants. Based on the information available, WHO believes it is likely that Omicron will outpace the Delta variant where there is COVID-19 transmission in the community.

However, being vaccinated and taking precautions such as avoiding crowded spaces, keeping your distance from others and wearing a mask are critical in helping to prevent the spread of COVID-19, and we know these actions have been effective against other variants.

Does the Omicron variant cause different symptoms?

There is no information to suggest that Omicron causes different COVID-19 symptoms from other COVID-19 variants.

Are the COVID-19 vaccines effective against the Omicron variant?

Researchers are looking into any potential impact the Omicron variant has on the effectiveness of COVID-19 vaccines. Information is still limited, but there may be a small reduction in the effectiveness of vaccines against severe illness and death, and a decline in preventing mild disease and infection. However, WHO reports that so far it looks like the currently available vaccines offer significant protection against severe disease and death.

It is also important to be vaccinated to protect against the other widely circulating variants, such as the Delta one. When it's your turn, make sure to get vaccinated. If your vaccination involves two doses, it's important to receive both in order to have the maximum protection.

Is a prior COVID-19 infection effective against the Omicron variant?

WHO reports that early evidence suggests that previous infection could offer less protection against Omicron in comparison to other variants of concern, such as Delta. Information is still limited though and we will share updates as it becomes available.

You should get vaccinated even if you've previously had COVID-19. While people who recover from COVID-19 may develop some natural immunity to the virus, we do not yet know how long it lasts or how well you are protected. Vaccines offer more reliable protection.

Do current COVID-19 tests detect the Omicron variant?

The widely used PCR and antigen-based rapid diagnostic tests continue to detect infection of COVID-19, including Omicron.

Are children more likely to contract the Omicron variant?

Research is ongoing into Omicron's transmissibility and we will update as more information becomes available. However, people who are mixing socially and those who are unvaccinated are more susceptible to contracting COVID-19.

How can I protect myself and my family against the Omicron variant?

The most important thing you can do is reduce your risk of exposure to the virus. To protect yourself and your loved ones, make sure to:

- Wear a mask that covers your nose and mouth. Make sure that your hands are clean when you put on and remove your mask.
 - Keep a physical distance of at least 1 metre from others.
 - Avoid poorly ventilated or crowded spaces.
 - Open windows to improve ventilation indoors.
 - Wash your hands regularly.
 - When it's your turn, get vaccinated.
- WHO-approved COVID-19 vaccines are safe and effective.

How can I talk to my child about the Omicron and other COVID-19 variants?

News about COVID-19 and now the Omicron variant is flooding our daily lives and it is only natural that curious young children will have questions – lots of them. Here are some pointers to keep in mind tips for helping to explain what can be a complicated topic in simple and reassuring terms.

- Children have a right to know what is going on, but it should be explained to them in an age-appropriate way.
- Invite your child to share what they have heard and listen to their responses. It is important to be fully engaged and take any fears they have seriously. Be patient, the pandemic and misinformation has caused a lot of worry and uncertainty for everyone.
- Make sure that you are up to date on the latest information yourself. Websites of international organizations like UNICEF and the World Health Organization are great sources of information about the pandemic (for those who don't have access to the internet, contact health organizations you can trust like PASAN at 1-866-224-9978 Mon - Fri 9am - 5pm EST or 526 Richmond St E, Toronto, ON M5A 1R3)
- If you don't know the answer, don't guess. Use it as an opportunity to explore the answers together.

- Remember that kids take their emotional cues from adults, so even if you are worried for your little one knowing that they might be uncomfortable, try not to overshare your fears with your child.

NOT EVERY OMICRON CASE FEELS MILD, WARN SOME B.C. RESIDENTS WHO HAVE TESTED POSITIVE FOR COVID-19

By Michelle Ghoussoub, CBC News, Jan 12, 2022

When Darrin Rigo, 31, and his partner tested positive for COVID-19 in late December, they assumed because they were double vaccinated and likely caught the Omicron variant, their symptoms would ease within a few days.

But while Rigo's partner continued to improve around day seven, Rigo's condition deteriorated swiftly, and he continues to experience lingering symptoms 14 days later.

"I regressed pretty hard ... I began having really intense sinus headaches and really bad sinus pressure, to the point that I really felt like my head was going to explode. I was tired and my brain felt like sludge," he said, speaking from his home in Prince George.

"With the duration and the lasting effects too, I would be pressed to call this a mild illness. I do have this anxiety about everyone kind of getting it over the next month or so and I do think we're going to feel the effects of that."

The highly transmissible Omicron variant has been described by public health as near-impossible to avoid but far milder than previous COVID-19 variants.

However the World Health Organization has warned that while the Omicron variant produces less severe disease than the Delta strain, it should not be categorized as "mild."

In response to the arrival of Omicron, the B.C. government has fast-tracked the province's booster program and reduced the isolation period to five days for vaccinated people testing positive without symptoms, allowing them to return to work sooner.

But a return to the office so soon after getting sick wasn't possible for 41-year-old Marie Strom, who is double vaccinated.

Strom, based in Vancouver, came down with COVID-19 symptoms on New Year's Eve which she presumes are from the Omicron variant — and which she continues to experience.

"I was just unable to move — everything hurt. It hit me like a bus. It's been 12 days and I still have fatigue. The aches and pains stayed for days but then it was just fatigue, lightheadedness when I try to walk too much," she said, adding she did not expect her symptoms would be so severe.

"A lot of people are going to be surprised by it — surprised at how sick they are, surprised at how they can't move, and can't do anything and they can't take care of their children."

Rigo and Strom say they are grateful to have avoided hospitalization thanks to vaccines, but that their experiences have made them more concerned about large numbers of people falling ill at once, especially

if their symptoms last 10 days or more and they are unable to get sick leave.

"Logically it makes sense that everybody is going to get it ... but if we all get it at once that's a lot of people that are sick and not able to work for two weeks," said Strom.

Provincial Health Officer Dr. Bonnie Henry warned in early January that B.C. businesses should be prepared to see at least one third of their staff out sick with Omicron.

But she signalled in a year-end interview with CBC News that the rise of the Omicron variant could shift the pandemic into a phase where it becomes endemic.

Other experts warn that letting Omicron burn through the population to build up population-level immunity is a game with an uncertain end.

"Using the word 'endemic' — it's not necessarily a good thing. It's basically acknowledging that we're not able to eliminate this viral threat," said Steven Hoffman, a professor of global health at York University.

He says uncontrolled spread is likely to lead to more potentially dangerous variants.

"We need to make sure that not everyone gets this virus at once. Any efforts to spread out the spread of this virus, to ensure that as few people as possible get it now, will ensure that ... those who do get severely sick will have hospital care."

Thirty-five-year-old Doaa Magdy began to experience COVID-19 symptoms in early January and soon found herself gasping for air when she tried to speak in full sentences.

Magdy, who is double vaccinated, has asthma. She says she developed a blood clot in her lung that could have threatened her life if she hadn't been able to access emergency medical care.

"I honestly think that labelling Omicron as 'mild' is a huge understatement," said Magdy, now recovering at home in Vancouver.

"I think the major thing is to understand that whatever is mild for one person is not guaranteed to be mild to the person in front of you."



COVID-19 OUTBREAKS NOW REPORTED AT 7 FEDERAL PRISONS, MORE STAFF THAN INMATES INFECTED

By Erika Ibrahim The Canadian Press, Dec 31, 2021

More federal prisons are reporting COVID-19 outbreaks, with the surge in new infections affecting not only inmates but also a large number of correctional officers and staff.

New outbreaks were reported Friday at four Correctional Service Canada facilities: the Atlantic Institution in New Brunswick; Drumheller in Alberta; Stony Mountain in Manitoba; and the Kent Institution in B.C. Those follow outbreaks earlier this week at three other federal institutions.

While the new outbreaks have led to dozens of inmates having become infected with COVID-19, the number of cases among prison staff has been much higher.

Correctional Services spokeswoman Marie Pier Lecuyer said Friday a total of 248 staff have tested positive for the novel coronavirus, compared with 107 inmates. The previous day, the agency had reported infections in 160 staff members and 88 inmates.

Drumheller alone accounted for 41 of the new staff infections reported Friday, along with 13 inmates.

At the Kent Institution in Agassiz, B.C., 18 staff had tested positive for the virus.

The latest outbreaks, which have also affected the Nova Scotia Institution for Women, the Warkworth Institution in Ontario, and La Mazaca Institution in Quebec, come as Canada faces a surge in new COVID-19 cases driven by the highly contagious Omicron variant.

As the number of cases among inmates and staff continues to grow, Lecuyer said Correctional Services is reviewing staff levels at its institutions to make sure there are enough officers to continue operating in a safe manner.

"In addition, we have contingency plans, which indicate additional measures that can be taken to address staffing levels issue, such as approving staff overtime and having managers replace correctional officers, as needed," she said.

Some provinces have made the difficult decision in recent days to keep essential workers such as police officers, paramedics and hospital workers on the job even after they have tested positive for COVID-19, amid a nationwide explosion in new cases.

Lecuyer said while correctional officers are not returning to work until they are fully recovered, the agency does have a protocol in place allowing the return of asymptomatic staff who have completed "the majority" of their 10-day isolation period.

Such staff members will be subject to ongoing rapid testing and other "work-isolation measures," she added.

Jeff Wilkins, national president

of the Union of Canadian Correctional Officers, said it is concerning that federal prison staff are having to deal with COVID-19.

However, while the union has been pushing the federal government to instigate hazard pay for correctional officers, Wilkins said he was generally satisfied with the measures put in place to protect them.

"Of course, nothing can be perfect, but I do believe that the things that we have put in place have managed to keep the numbers as low as they are," he said.

Wilkins added there is no "one-size-fits-all" solution to a staffing shortage, but one solution might be to bring in staff from another institution that is close by and not experiencing an outbreak.

CALLS GROW FOR INMATE RELEASES AS COVID-19 CASELOADS CLIMB IN JAILS AND PRISONS

Sarah Smellie, The Canadian Press, Jan 05, 2022

Experts and advocates are calling on governments to release some inmates in provincial jails and federal prisons as outbreaks of COVID-19 driven by the fast-moving Omicron variant spread through the country's correctional facilities.

People in tightly-packed living facilities are already more vulnerable to outbreaks, and the methods used in corrections to mitigate those risks — such as prolonged lockdowns or time in segregation — are inhumane, said Martha Paynter, a registered nurse and chair of Wellness Within, a group advocating for health equity in Nova Scotia.

Staff also risk contracting the virus in these facilities and spreading it in the community, she said. "Really, we've gotten ourselves into an untenable, unjustifiable and just purely unethical situation," Paynter said in an interview Tuesday.

"It comes back to what we've been saying for two years now, which is the only solution is decarceration."

Correctional Service Canada (CSC) has reported outbreaks at 16 federal prisons since the beginning of December 2021, when the Omicron variant first took hold in the country.

By comparison, the agency reported outbreaks at 12 institutions over the previous six months.

"More than 80 per cent of the federal inmate population is considered fully vaccinated. Nevertheless, consistent with rising community transmission rates, we are seeing a surge in cases in correctional facilities," Correctional Investigator Dr. Ivan Zinger told CBC News in a media statement.

A spokesperson for CSC told CBC News that there are now COVID-19 outbreaks in eight federal institutions:

- Drumheller Institution - Medium Security Unit
- Nova Institution for Women
- Stony Mountain Institution
- Atlantic Institution
- La Macaza Institution
- Warkworth Institution

- Kent Institution

Regional Reception Centre, Que. There were 108 cases active in federal prisons as of Dec. 31, according to the department's website on Tuesday.

Trial delays

Outbreaks at provincial institutions are more difficult to track.

There were 74 cases detected among inmates at the Central Nova Scotia Correctional Facility in Dartmouth, N.S., as of Tuesday, according to the provincial government. That's more than 30 per cent of the 233 inmates held there.

For Paynter, "decarceration" involves granting early parole to inmates held in federal institutions. Many people in provincial jails are on remand awaiting trial, and that process could be accelerated, she said.

For those who have been sentenced, she said, justice departments could find safe community alternatives, like house arrest.

"Number one, stop putting people in jail," Paynter said. "Stop taking people into custody over petty bail violations, probation violations, et cetera."

Amelia Reimer, a board member with Newfoundland and Labrador's Elizabeth Fry Society, said the outbreak at the Central Nova Scotia Correctional Facility is a clear sign of the risk posed to inmates, staff and their communities by the Omicron variant.

Her group is asking the Newfoundland and Labrador government to release non-violent offenders and people held on remand within the province's prisons.

"There are so many people who are currently incarcerated who could actually be appropriately managed in community," Reimer said in a recent interview.

Reimer's group wrote a letter in late December to the provincial government about the situation.

Reimer said provincial Justice Minister John Hogan told the group that his department was continually reviewing or issuing temporary absences on a case-by-case basis, and that there are regular vaccination clinics inside provincial jails.

Reimer said she was heartened by that response. "I think we're all taking this really seriously," she said.

In an emailed statement, a Department of Justice spokeswoman repeated Hogan's comments and noted there has not been a single case of COVID-19 among inmates in the province.

Prison population down 16 per cent

During the first wave of the pandemic, thousands of inmates were released from federal and provincial facilities. Justin Piche, an associate professor of criminology at the University of Ottawa, helped track those numbers as part of the Prison Pandemic Partnership, a research group examining how prisoners are affected by COVID-19.

The number of people in both federal and provincial institutions dropped by about 19 per

cent during the first wave, from 37,976 inmates in February 2020 to 30,580 people in June of the same year, according to data from Statistics Canada.

By December 2020, there were 31,981 people incarcerated across federal and provincial facilities. That's still about 16 per cent below pre-pandemic levels.

Piche's data show Nova Scotia and Newfoundland and Labrador led the country in inmate releases between February and June of 2020, with 40 and 39 per cent drops in jail populations respectively.

"Actions were taken early on, especially at the provincial level, where there was a lot more bail releases that were happening, because it was seen as an urgent situation," Piche said in a recent interview.

"Since then ... governments have taken their foot off the gas, and prisoners and prison staff have paid the price."

COVID-19 OUTBREAK INFECTS 30 AT HAMILTON DETENTION CENTRE AS CASES SPIKE IN ONTARIO JAILS

Dan Taekema, CBC News, Jan 06, 2022

A COVID-19 outbreak involving 30 inmates at the Hamilton-Wentworth Detention Centre (HWDC) is fuelling calls for more prisoners to be released from Ontario jails as the Omicron variant contributes to a spike in cases behind bars.

As of Tuesday, 30 Barton jail inmates tested positive, according to statistics from the Ministry of the Solicitor General.

It's part of a surge in infections at correctional institutions across Canada that has seen 1,212 prisoners and staff contract the virus in December alone, said Justin Piché, a criminologist at the University of Ottawa who has been building a database of figures that includes government data.

"COVID is skyrocketing behind bars in Ontario," he said.

"It's a public health and a community safety disaster. We need urgent action to depopulate our jails to the extent that we can."

City data shows two staff members at the Arrell Youth Centre in Hamilton have also tested positive, and the ministry reports there is one inmate case of COVID-19 at the Niagara Detention Centre. According to Ontario Public Health data as of Wednesday, there were 17 outbreaks at correctional facilities in the province.

Jails and prisons across Canada have counted 11,254 cases since the pandemic began, with roughly 10 per cent of that number being tallied last month, said Piché, an associate professor at the university.

He said the rise in cases mirrors what's happening in the broader community, with the Omicron variant leading to record case counts in Canada.

He urged the Ontario government and law enforcement officials to follow the same steps they took in the first wave of the pandemic. Back then, inmate populations were cut by about

30 per cent in a matter of weeks to limit spread in confined settings where prisoners often aren't able to keep distance from each other.

"Rather than applying those lessons throughout the pandemic, the [Premier Doug] Ford government, the courts, police have taken their foot off the gas right when we need them to accelerate with more transmissible variants," he said.

Ministry says it's taking precautions

A spokesperson for the ministry said each correctional facility has a pandemic plan in place and it will continue to work with public health to protect staff and inmates.

"Any inmate that tests positive for COVID-19 is placed on droplet and contact precautions and isolated from the rest of the inmate population while they receive appropriate medical care," wrote Andrew Morrison in an email.

He said inmates and staff undergo testing and the ministry has its own supply of COVID-19 vaccines, which are made available to eligible prisoners.

Morrison listed other steps provincial jails have taken, such as providing masks if required, increasing cleaning and housing new inmates away from the general population for 14 days.

Lockdowns lead to 'torturous conditions,' says prof But Piché said those measures aren't enough.

An outbreak can also lead to "torturous conditions of confinement" that see prisoners locked in their cell for all but half an hour a day, he said.

Similar concerns were raised by advocates with the Barton Prisoner Solidarity Project, which first revealed the outbreak at HWDC in a post on Facebook.

The group criticized the ministry and jail officials for not communicating openly about the outbreak, and raised concerns from inmates about crowding and access to masks, sanitizer and soap.

"So far the jail has responded to outbreaks by increasing isolation, locking folks in cell for long periods," the post reads.

"With the cells so crowded and unsanitary though, without even space to take a few steps, this is in itself harmful to prisoners' health. Lockdowns are not public health measures, isolation is part of the disease."

Cutting the number of people in jails would keep those inside safer and help limit spread in the community too, by reducing the risk of exposure to staff who then leave the facility, visit stores and interact with others, said Piché.

"What happens behind bars does not stay behind there," he said, adding the situation should be alarming for everyone.

"If you don't care about prisoners ... you should at least in your own self interest care about what's going on in terms of infections among staff because that has reverberations for their families and for our communities."

**THINK YOU MAY HAVE OMICRON?
HERE ARE THINGS YOU CAN DO**

Symptoms to watch for and when to seek hospital care

CBC Radio, The Dose, Jan 07, 2022

The Omicron variant is so transmissible and so widespread across Canada that it's likely that you know someone who has it right now, or you have it yourself.

The variant is shattering case records and sending test positivity rates soaring. As of Thursday, Ontario's COVID-19 test positivity rate is 29.2 per cent, while Quebec's health minister said the health-care system is missing about 20,000 workers who have been infected with or exposed to the virus.

"I think that people [are] having a very hard time wrapping their head around how much that Omicron has changed the rules of the game and how we have to change how we handle it in terms of our own individual risks, as well as our behaviour within a society," said Dr. Matthew Oughton, in an interview with Dr. Brian Goldman, host of CBC podcast The Dose.

The incubation period for Omicron is shorter compared to previous variants, and is about three days, says Oughton, an infectious diseases specialist at Jewish General Hospital in Montreal.

Rules and guidance around what to do are changing rapidly, but there are a few key things you need to know right now.

How to know if you have Omicron

In many parts of Canada, it can be extremely difficult to get access to PCR testing to determine if you have COVID — and that's if you meet the criteria. Rapid antigen tests may be just as hard to find.

If you have the symptoms of an upper respiratory tract infection, "right now the chances that it's Omicron are very, very high," said Oughton.

Those symptoms include sore throat, runny nose, aches and pains, a dry cough, fever, nausea and diarrhea. Oughton noted that he is seeing fewer people who experience a loss of taste or smell with Omicron as compared to previous variants, although it is still happening to some.

If you do have access to a rapid test, test yourself a day or so after a suspected exposure, and don't assume that your negative result means you're in the clear.

"Especially if you have compatible symptoms, take a negative result with not just one grain of salt, but with maybe a whole truckload of salt," said Oughton.

If someone else in your household has tested positive or has symptoms, it's probably safe to assume you do, too.

"What we're seeing with ... pretty early data is household attack rates are very, very high with Omicron, even compared to other variants of SARS-CoV-2, and that was already fairly high," said Oughton.

If you can, it's important to get

vaccinated or boosted.

For healthy people with two or three doses of vaccine the symptoms are fairly mild and tend to be over within a few days from when people tested positive, says Dr. Erin O'Connor. She's the deputy medical director of the emergency departments at the University Health Network in Toronto.

"Many patients we're seeing are actually testing positive before they have symptoms, so they're testing positive on a rapid antigen," she said. Those patients go on to develop symptoms two or three days later, and then often find their symptoms start improving three or four days after that.

How to treat Omicron at home

If you know or think you've got Omicron, stay home. If you can, isolate from the rest of your household.

"If you have the luxury of a living arrangement where you can have your own sleeping quarters and bathroom and ideally, sort of a sectioned off area of the house, I guess that's ideal," said Oughton.

"But of course, that's really not the reality for many, maybe even most Canadians who are facing this."

So, he recommends masking at home, and opening windows to improve ventilation when you can, to help limit transmission. Oughton is mindful many places across Canada may be experiencing cold weather, so open windows may be a limited solution.

Stay warm and drink plenty of liquids, says Dr. O'Connor. She recommends taking ibuprofen (also known by the brand name Advil) or acetaminophen (also known as Tylenol), or cold and flu medication that includes those painkillers. Be sure to check with your pharmacist if you are taking other medications that those painkillers might interfere with.

"At the moment, we don't have medications that we can prescribe that someone can take at home. For those patients with asthma who are having a wheeze with this, we may prescribe puffers for them to help out," she said.

O'Connor says that some people with greater medical risk are being sent home from UHN hospitals with home oxygen monitors, also known as pulse oximeters. She notes they can also be purchased online.

The device monitors blood oxygen levels. Most people will have a saturation of between 97 and 100 per cent, she says.

"It can drop a little bit lower than that and still be safe. But at 92 per cent, we'd be wanting you to come in for further examination," she said.

When you should seek hospital care

Severe chest pains and worsening or severe shortness of breath are signs you should head to the hospital.

Very sick patients often feel short of breath, says Dr. Lisa Salamon, an emergency physi-

cian with Scarborough Health Network in Toronto.

"Sometimes they don't realize how short of breath they are until it's too late, particularly in younger patients," she said. "It was really surprising, a lot of these sick patients that I was seeing, their oxygen saturations were extremely low and they just realized how short of breath they were when they came in."

Dr. Oughton says other warning signs include persistent fever that lasts at least two days, if not more, and heart palpitations.

"If your heart [is] missing beats or skipping beats or if your heart's really racing, those would be the other warning signs that really should be taken very seriously," he said.

O'Connor says that many emergency departments across Canada are offering virtual consultations, and she suggests people try that first before coming to hospital.

"If you do have the option, please use the virtual ED type of models to speak to a provider who can give you some advice about whether you need to head in or not," she said.

Salamon also noted it's important for people who are seriously ill with COVID, or another medical condition, to seek care at the hospital without hesitation.

"People have to understand, if they feel sick, we don't want them not coming to the emergency department because they're scared. We want them to seek the appropriate medical care," she said.

How to choose a mask that protects

If you're still wearing a single-ply cloth mask, it won't offer you enough protection and it's time to search out something better.

The best masks are N95s or equivalents, such as Canadian-made FN95 masks, as well as KN95s and KF94s.

Oughton cautions that the U.S. Centers for Disease Control recently warned about counterfeit respirators, like N95 masks, and says he wouldn't be surprised if Canadians experience the same problems.

Marketplace also found some N95s held up better than others in testing.

In the meantime, you can adapt existing masks for better protection to filter particles in the environment.

"If you use the cloth mask as an overlay over top of a surgical mask or a medical mask ... that sort of improves the quality of the fit on your face," said Oughton.

WHAT TO EXPECT WHEN YOU'RE GETTING OUT IN ONTARIO**Ontario COVID-19 public health measures and advice Overview**

In response to recent trends that show a rapid increase in COVID-19 hospitalizations, Ontario is temporarily moving into Step Two of the Roadmap to Reopen with modifications that

take into account the province's successful vaccination efforts.

As of January 5, 2022 at 12:01 a.m. the following measures will be in place for at least 21 days (until January 27) subject to trends in public health and our health system.

Gatherings and events Social gatherings are permitted under the following conditions: indoor gatherings limited to five people or fewer outdoor gatherings limited to 10 people or fewer

Organized public events are permitted under the following conditions:

indoor events limited to five people or fewer outdoor events have no limits on number of attendees, but face coverings and/or masks must be worn when distancing (two metres or more) cannot be maintained

Weddings, funerals, religious services, rites and ceremonies are permitted under the following conditions:

indoor services are limited to 50 per cent the capacity of the room outdoor services are limited to the number of people who can maintain two metres distance

drive-in (motor vehicle) services permitted social gatherings associated with these services must adhere to the social gathering limits

Retirement homes Retirement homes are exempt from organized public event and social gathering restrictions if the home is in compliance with the policies or guidance, if any, issued by the Retirement Homes Regulatory Authority.

Work from home

Businesses and organizations must make sure that all work is conducted remotely, unless the nature of the work requires workers to be on-site at the workplace.

Retail

All retail must operate under the following conditions:

- 50 per cent capacity
- music played is not above a decibel level where normal conversation is possible
- active screening at photography studios and services
- safety measures for vehicle test drives sales, such as a maximum of 10 minutes for a test drive, a maximum of two people in a vehicle, including one sales representative, windows must be rolled down, active screening, masking, etc.
- safety measures for shopping malls, including capacity limits, no loitering, distancing in line ups, food courts closed and active screening.

Camps

Day and overnight camps are closed.

Meeting and events spaces, and food and drink establishments Restaurants, bars and other food or drink establishments, including those with dance floors (such as nightclubs) and strip clubs must operate under the following conditions:

- indoor service closed

- take out, drive through and delivery allowed

- outdoor areas open with restrictions including, but not limited to:

- no more than 10 people per table

- patrons must remain seated

- no dancing or singing

- active screening

- limited hours for the sale, service and consumption of liquor

Meeting and event spaces, including conference centres and convention centres must operate under the following conditions:

- indoor areas closed with exceptions, such as child care, court and government services, social services, health services, collective bargaining and mental health/addiction services up to 10 people, in-person exams for limited fields/occupations up to 50 people

- outdoor areas open with restrictions including, but not limited to:

- no more than 10 people per table

- patrons must remain seated

- no dancing or singing

- active screening

- limited hours for the sale, service and consumption of liquor

Sports and recreational fitness activities

Indoor areas of facilities used for sports and recreational fitness activities, including gyms, sporting events and personal training must operate under the following conditions:

- indoor closed with limited exceptions and conditions (such as athletes training for Olympics and Paralympics, select professional and elite amateur sport leagues who will operate via an approved framework from the Office of the Chief Medical Officer of Health and persons with disabilities for physical therapy)

- outdoor open with spectators limited to 50 per cent capacity and other restrictions

- proof of vaccination required for facilities with a usual capacity of 20,000 or more people

Recreational amenities

Recreational amenities must operate under the following conditions:

- indoor recreational amenities closed

- outdoor recreational amenities open

Entertainment

Concert venues, theatres, cinemas, museums, galleries, zoos, science centres, landmarks, historic sites, botanical gardens and similar attractions, amusement parks, waterparks, tour and guide services including boat tours, fairs, rural exhibitions and festivals must operate under the following conditions:

- outdoor open with restrictions (such as masking on rides)

- spectators at seated events at 50 per cent capacity

- outdoor tours and boat tours at 50 per cent capacity

- drive-in and drive through events permitted with restrictions, such as distancing between cars, only permitted to leave a vehicle in limited circum-

VACCINE HESITANCY IN BLACK & INDIGENOUS COMMUNITIES IN THE US & CANADA

By Nicole Mantella, June 14, 2021, Trauma Psychology News

Since the beginning of the COVID-19 pandemic, Black and Indigenous communities, in the US and Canada, have been disproportionately impacted with more infections and deaths [1, 2]. The arrival of effective vaccines gave the whole of the planet some much-needed light at the end of the COVID tunnel. However, vaccines the beginning of the rollout has revealed considerable ambivalence about getting the lifesaving shot in both Black and Indigenous communities. It would be facile to attribute this hesitancy to a lack of education and a general distrust of authorities, as this focuses responsibility exclusively on Black and Indigenous individuals and is conveniently dismissive of the long history of medical racism and trauma perpetuated on these communities.

Historical Trauma

It is vital for medical professionals and policy makers to understand that vaccine hesitancy in these communities is not founded on baseless fears, solely born of antivaxer scaremongering. The US and Canada have a long history of medical racism, in particular, cruel nonconsensual medical procedures and experimentation on Black and Indigenous persons.

Black Medical Trauma

Racist beliefs about biological differences have existed since the Enlightenment when naturalists were cataloguing the natural world and extending this categorization to people. They fanatically measured and compared, and specifically sought out 'data' to support the notion that White people were 'naturally superior'. Early examples include: "lighter weight of brain; exceedingly thick cranium; a thick epidermis" [3]. The racist myth that Black people experience less pain dates from this era, this belief, has been shown to persist until this day, even among medical residents, such that Black people's pain is systematically underestimated and undertreated [4].

One of the most horrific and well-known medical abuses of Black people is the Tuskegee Syphilis Experiments (1932-1972), where government researchers purposefully withheld treatment from a sample of Black men infected with syphilis, in order to track the course of the disease when left untreated [5]. Researchers prevented participants from accessing viable treatments (i.e., penicillin) by prohibiting medical screenings during the WWII draft and directly intervening with other health care providers who tried to treat participants. Additionally, researchers neglected to discuss mechanism of disease transmission which caused harm to participant's sexual partners and children. Over this long study, a succession of researchers justified their actions on scientific grounds such as the need to understand the progression of the disease. The multitude of unethical actions in this study are astounding and the erosion of trust that this event created continues to reverberate today.

Other notorious traumas include gynecological experimentation on enslaved Black women. Following the 1808 federal ban on importing slaves, a newfound White enthusiasm for the survival of slave children led to a surge in gynecological experimentation. Much of this experimentation was conducted without anesthesia, despite its availability, justified by the 'less physical pain' myth [6]. A more recent example from the 1950s, is the nonconsensual sampling, of Ms. Henrietta Lack's cells, which were then shared with other scientists and created into a standard set of cells (HeLa cells) that continue to be widely used in medical research today. In addition to the lack of consent, none of the companies that profit-

ed from Ms. Lack's cells provided any compensation to her family, and, for decades after her death, scientists compounded this injustice by publicly revealing her name, sharing her medical records, and even publishing her cells' genome online [7].

Many states in the South, and California, have been shown to have employed forced sterilization as a means of controlling Black bodies. "Mississippi appendectomies" were unnecessary hysterectomies performed at teaching hospitals in the South primarily on poor Black women as practice for medical students. North Carolina's eugenics program under the guise of population management, specifically targeted Black citizens for forced sterilization. Finally, there is mounting evidence that forced sterilization, primarily of Black women, continued for decades in women's prisons in California, and that it is still happening today [8-10].

Indigenous Medical Trauma

For generations, Indigenous people have transmitted cultural knowledge by verbally passing down traditional teachings, stories, songs and codes of conduct. So too have the traumas sustained by their ancestors been passed down through the generations. The atrocities of Wounded Knee, The Trail of Tears, and the residential school system are just a few of the historical traumas that have impacted Indigenous ways of life through colonization, forced assimilation, and imposed medical procedures and experimentation.

The residential school system in Canada (1870-1990s) removed around 150,000 children from their families and sent them to church-run schools under a deliberate policy of assimilation. The physical, mental and sexual abuse of many of these children is well documented, with mortality rates up to 60% at some schools [11]. Survivors have repeatedly reported the occurrence of unethical medical interventions, in particular several nutritional experiments. For example, after discovering severe malnutrition in some residential schools, researchers decided to study the effects of chronic-severe malnutrition on child development, by randomizing the children into a control group receiving no interventions or an experimental group from whom nutrition was further limited for 2-years to stabilize a baseline, lowering their intake to well below the recommended daily levels. Additionally, within several Northern Indigenous communities in situations of malnutrition, authorities desirous to study their efficacy, introduced vitamin supplements rather than increasing nutritious food supplies [12].

During the 1930s, the Canadian government tested tuberculosis vaccines on impoverished aboriginal communities instead of fixing poor living conditions that fostered the disease [13]. Not to mention experimental surgical and drug treatments given at the racially segregated 'Indian hospitals' during post-war times [14]. To add insult to injury, multiple breakthroughs from research on Indigenous children were later used to treat the wider Canadian population, yet these same medicines were withheld from Indigenous children. Also, in the 1930s, legislation was introduced in the US and Canada allowing for forced abortion and sterilization of selected populations. There is considerable evidence showing such practices persisted for multiple decades. It's estimated that as many as 25-50% of Indigenous women in the US were sterilized between 1970 and 1976 [15, 16].

Current issues of medical racism

The myth of biological differences in pain tolerance continues today. For example, a 2016 US study found that 25% of medical residents agreed that Blacks have thicker skin and therefore less pain. Stories of Black and Indigenous individuals having their complaints of pain ignored by medical personnel abound in the recent press, for

example Dr Susan Moore, a US Black doctor, Joyce Echaquan, a Canadian Indigenous woman from the Atikamekw Nation, and David Bell, a US Black man, all died recently following dismissal of their pain and illness [17-19].

Racial disparities are particularly stark in obstetrics. Today, Black and Indigenous women are 2-3 times more likely to die from pregnancy-related causes, and their infants are more than twice as likely to die as White infants. A 2020 study found that Black newborns in the US are more likely to survive childbirth if they are cared for by Black doctors, but three times more likely than White babies to die when their doctor is White [20, 21].

At the outset of the COVID-19 pandemic, both countries' administrations issued guidelines encouraging social distancing, and frequent hand washing, however many Indigenous communities were left asking how to implement such measures when, in Canada nearly a quarter of Indigenous people live in overcrowded homes and 61 Nations do not currently have access to clean water, and in the US Navajo Nation for example, 1 out of 3 households don't have indoor plumbing. Navajo Nation president Jonathan Nez, in testimony at a water rights hearing in Oljato on the Arizona-Utah border, said there is "a single spigot on a desolate road, miles from any residence, which serves 900 people" [22].

Even the vaccine developers have compounded the situation. Moderna had to slow down vaccine trials due to a lack of BIPOC data and the Lummi Nation exited the AstraZeneca trials over communication difficulties which resulted in the Nation Chief stating that it was "not a good fit for their community" [22, 23].

Path forward

There is however reason to be hopeful. In the US, communities have taken direct action to specifically address fears and mistrust. For example, the Health Advocates In-Reach and Research network, an initiative that started with training barbers in Maryland to be lay health advocates for colorectal screening, has implemented on-site testing services and facilitated multiple information town halls. In Florida, a statewide, Black-led community task force aims to increase community immunization rates by facilitating access to vaccination sites in BIPOC communities. Minnesota Community Care a nonprofit clinic created videos and flyers to dispel COVID-19 myths. After receiving vaccine doses through the Federal Indian Health Service, Indigenous nations have in ambitious vaccination rollouts, setting their own eligibility criteria and encouraging their communities to consider vaccination as an act of protection towards community Elders. Some of these plans have been so successful that they have been extended to included local non-Indigenous persons [25-28].

In Canada, the federal government has prioritized vaccine distribution to hard-to-reach northern Nations in collaboration with local leaders, ahead of the general population. These communities have limited access to local healthcare and are therefore at higher risk. However, one complex issue with targeted prioritization policies, is that they can stimulate fears of 'experimentation'; it is therefore essential that the Canadian government continues to work in partnership with Nation leaders and healthcare professionals to provide public messaging and information that is inclusive of Indigenous worldviews. For example, messaging needs to focus not only on individual protection, but also on the protection of communities, the land and the next seven generations. Indigenous persons in urban areas are also

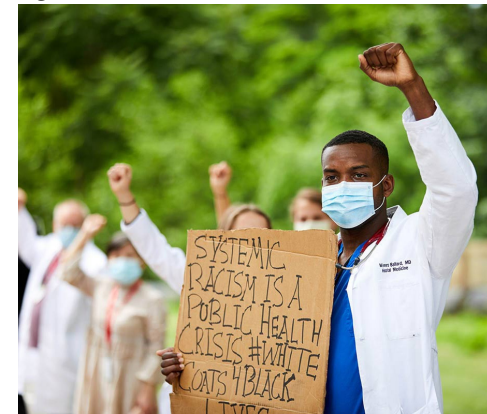
being prioritized. Information campaigns and community leaders and experts are also mobilizing within the Black community, for example, last week a town-hall style event brought together a consortium of Black health care professionals to address community concerns and answer vaccine related questions [29, 30].

Very recent data suggests that these active community approaches are gradually working. For example, a January Harris Poll showed acceptance in Blacks increasing from 43% in October to 58%; a further survey by the Urban Indian Health Institute with 318 tribes across 46 states, showed 75% of participants were willing to be vaccinated, also participants indicated that the primary motivation for getting vaccinated was a strong sense of community, including protecting Elders and traditional cultural ways [31, 32]. Things have been slower moving in Canada, due to a lower availability of vaccines, however, recent data is showing that vaccination rates in Indigenous communities are currently significantly higher than those reported elsewhere, with 25% of Indigenous adults having received at least one shot, a rate that is six times higher than in the general population [33]. Currently, reported hesitancy is still high within the Black community however grass-roots information campaigns are ramping up [29].

The new US administration has adopted a direct hand-on approach creating a COVID-19 Health Equity Task Force whose mission is to provide recommendations to POTUS, for mitigating inequities caused or exacerbated by the pandemic, as well as suggestions for preventing future discriminations. The task force is composed of healthcare providers, public health experts and members from a breadth of minority communities, as well as state, local, territorial and Tribal representatives. At its head is Dr. Marcella Nunez-Smith, an epidemiologist with considerable experience in health equity research. In a recent interview with the NY Times, she identified several key issues including developing more sensitive data collection to get a more comprehensive and accurate picture of which populations need to be specifically targeted to reduce vaccine hesitation and lag; and the identification and removal of structural barriers (e.g., transportation to vaccine centers, days off work for vaccination and /or recovery etc.) that disproportionately impact BIPOC communities [34].

Finally, as we slowly climb out of the pandemic, it is not just about access and confidence in vaccines, it is also about making sure that Black and Indigenous communities have access to 'equity in the recovery' which hopefully means coming out the other end with something more than just a 'return to previous functioning' for all.

References can be found here, they're not included with this article due to space constraints: <https://traumapsychnews.com/2021/06/vaccine-hesitancy-in-black-indigenous-communities-in-the-us-canada/>



7 // COVID-19 VACCINES



WILL WE ALWAYS NEED COVID-19 BOOSTERS? EXPERTS HAVE THEORIES

By Helen Branswell, Dec. 15, 2021, STAT (STAT delivers trusted and authoritative journalism about health, medicine, and the life sciences. Millions of new readers turned to us as we sounded the alarm early on about the Covid-19 pandemic. Our journalists go deep in tough-minded coverage of the business of making medicines, health tech, science, and public health.)

With the world facing the latest in a seemingly endless stream of coronavirus variants — and with bullish talk from manufacturers about a need for even more vaccine shots — you wouldn't be alone if you were wondering: Are Covid boosters always going to be a fixture in our future?

The simple truth is that, at this point, there's no definitive answer to that question.

But virologists, immunologists, and vaccinologists have opinions that are anchored in an understanding of how the immune system works and in emerging data on how Covid vaccines engage with this complicated enterprise that has evolved to help humans fend off disease threats.

STAT asked a number of these experts whether they think we face a future of endless Covid boosting. In the main, their answers were more reassuring than we expected.

Some said they think three doses of vaccine may protect many people for some time against the worst of Covid's potential ravages. Many said they think the benefit of the third shot, given after a six-month interval, will turbocharge immune responses.

Interestingly, a number said they think that even if we end up needing more boosters down the line, the messenger RNA vaccines — the Pfizer and Moderna vaccines that have been the cornerstone of the U.S. vaccine effort to date — may not be the vaccines we use for that purpose. Vaccines that cause fewer side effects may be needed if public health authorities want to persuade people to get regular or even sporadic boosters.

Here are some observations and informed theories from nine leading experts in this field.

The immune response to these vaccines is impressive

Ali Ellebedy, an associate professor of pathology and immunology at Washington University School of Medicine in St. Louis, studies what happens in the lymph nodes and bone marrow of people who have been vaccinated against Covid-19. He's been amazed at how long the first two doses of mRNA vaccine act on the immune system; half a year after the second shot, the response is still maturing. He

wouldn't have predicted that, Ellebedy admitted.

"There is an ongoing reaction in our lymph nodes that's going for six months. And that reaction, we are showing, that it is actually enhancing the potency of the antibodies," he said. "Even before the third dose."

The maturation of the immune response — which would be accelerated by a third dose, given after a longer interval — brings big benefits. The antibodies we make improve in quality through a process called affinity maturation. They become more capable of recognizing their viral target, even if that target has made changes to its appearance, in the way variants have done.

"If you wait six months or more between a priming and boost, what you see is not just a boosting of the immunity that you got from the first vaccine, but you see a broadening of the immune response so that it recognizes other viruses or other variants. Your immune response becomes much more cross-protective," said David Topham, an immunologist at the University of Rochester Medical Center and director of the New York Influenza Center of Excellence.

Florian Krammer, a professor of vaccinology at the Icahn School of Medicine at Mount Sinai Hospital in New York, had been reluctant to get a booster shot, figuring he had solid protection from the two doses of Pfizer he received earlier this year. Better to allocate scarce doses to low-income countries that have had limited access to date to vaccine, he thought.

The emergence of the highly mutated Omicron variant has changed his thinking on the advisability of giving booster shots. But Krammer is not sure what the long-term impact of the third dose will be. "We see that you get your booster and you get up to two times, three times the [antibody] level that you had after the second dose. But the question is: How long does it last? How far will it fall? Will the set point be the same?" he asked.

"Even with booster doses... there might be breakthrough infections at some point," said Krammer. "And I think the real goal is to get so much immunity in the population that the virus is annoying but not problematic."

Third doses may get us to that spot

Barney Graham has long thought that a delayed third dose would be needed to complete a Covid vaccine series.

An immunologist who was deputy director of the National Institutes of Health's Vaccine Research Center until his retirement at the end of August, Graham led the NIH team that worked on the prototype of the Covid spike protein that many vaccine manufacturers used in their vaccines.

The antibodies induced by delayed third doses will be of higher quality, generating a broader immune response that can more reliably recognize even mutated viruses, such as new

variants, he said.

"Once you give the [antibody-producing] B cells a chance to mature and then boost them later ... that type of response tends to make immunity across all these different variants more similar," he said.

Graham also believes as we go forward, our immunity against SARS-CoV-2 may be naturally topped up by occasional exposures to the virus; that's called anamnestic boosting. Neutralizing antibodies will probably decline after the third dose, as they did after the second, so we may get infected by SARS-2 from time to time. But the other facets of the immune response will kick in to stop the virus from descending into the lungs, where it can do serious damage.

"So I think that the whole question about durability of immunity is going to have to be determined by three years from now, are people still getting sick or are they relatively well-protected against severe disease — regardless of whatever their antibody level is in serum. Because that may wane, but you still have a lot of memory B cells that can rapidly respond," Graham said.

Marion Pepper and her laboratory at the University of Washington have been working to come up with real world evidence on how well the immunity we've been acquiring protects against SARS-2. They have been following a cohort of people who were vaccinated or who were infected — and in some cases were both infected and then vaccinated. Among those vaccinated, some have received two shots; some have received a third. It is an observational study; they did not randomly assign the people they are following to these groups.

Pepper said from what her group is seeing, she expects boosters to give "an important window of enhanced protection." But she doesn't think there is limitless benefit from boosting again and again, using the same vaccine strain. She and her team saw, for instance, that people who had been infected, vaccinated, and then boosted did not get much additional benefit from the third dose of vaccine.

"I think there is a misconception that the immune system can constantly be repetitively elevated such that you don't go back to that same starting point," she said. "And in some people, maybe if they didn't have a good first immune response, it will enhance their cell numbers. But for the large majority you end up hitting a set point of memory that doesn't just keep getting bigger every single time you get the same boost."

She suggested vaccinating with another strain of the virus — something like the Omicron version, for example — might draw new immune cells into the fray and broaden the scope of the protection the vaccine offers. There are, however, many weighty factors to consider in making a decision to change the Covid vaccine.

The Omicron wildcard

Other experts have concerns about whether we're as far along as Graham and some others hope. Paul Bieniasz, head of the laboratory of retrovirology at Rockefeller University, said the work he and his team have done suggests there is still room to top up immunity in vaccinated people — and unfortunately plenty of unvaccinated people who still need protection.

Bieniasz had thought, like some of the others cited here, that with booster doses people would start to get the upper hand on the virus. But the emergence of Omicron has shaken his faith that our immune systems are going to take the lead in what he called "a genetic arms race."

"I was much more confident a couple of weeks ago that the antibodies would have the edge in being able to outstrip the evolutionary capacity of SARS-CoV-2. But I don't think that's completely clear now," he said.

Topham too thinks viral evolution may dictate whether we have future dates with booster shots.

"If next week we see the emergence of a variant that can escape the current vaccine, then yes, we're going to have to get another shot of an improved vaccine as soon as they can make it," he said.

People likely won't agree to take mRNA vaccines indefinitely

The Pfizer-BioNTech and Moderna vaccines have been game-changers in this pandemic, proving that new vaccines can be designed, tested, and mass-produced within a hitherto unthinkable time. The first syringes containing the Pfizer vaccine began to slide into arms in the United Kingdom and the U.S. about 11 months to the day from when a Chinese scientist posted the genetic sequence of the SARS-CoV-2 virus on internationally accessible databases.

The vaccines are extraordinarily protective. They're also reactogenic; they can come with a real kick. Some people experience no side effects of note while others have only a sore arm. But a significant portion of people experience headache, fatigue, and malaise; others spike fevers, experience muscle aches, and are wracked with chills. And of course, there is an elevated rate of myocarditis and pericarditis — inflammation of heart muscle or tissue around the heart, respectively — in some males in their teens and early 20s who get vaccinated with these shots.

In the throes of the pandemic, people have seen these vaccines as the best hedge against a potentially fatal encounter with Covid-19. But as our immunity against the new virus rises, experts like Ellebedy don't think folks will be willing to put up with potentially feeling lousy for a day or two after getting a booster.

"People in a pandemic can accept things, but I think if you're talking about a regular vaccine that's not really needed because of a pandemic, I'm not sure if people would be more accepting

of that," he said.

John Wherry, director of the Institute for Immunology at the University of Pennsylvania, agreed. "I don't think we're going to see just a yearly wild-type spike mRNA vaccine every year ad infinitum," he said, suggesting people will likely be drawn to other types of vaccines as boosters down the road, if we need them.

"If you get two vaccines and both work and one you know makes you feel sick for a day, and the other one doesn't, you know who wins, right?" Krammer said of the prospects for another type of vaccine to make inroads in the U.S. booster shot market.

Akiko Iwasaki, an immunologist at Yale University, thinks we will likely need vaccines that are administered differently if we want to prevent Covid infections. She and colleagues last week published a paper in Science on pre-clinical study of an intranasally administered vaccine.

"Early data from Israel is showing that the third dose, even though it provides a very effective protection, it also does wane," Iwasaki said. "So it's not like the third dose will fix antibody response forever. That's kind of hard to ask any vaccine to do that."

Developing a vaccine that aims to arm the mucosal tissues of the upper respiratory tract with immune protection would stop SARS-2 at its point of entry, not after it is rampaging through our cells. "It's really like putting the guard outside the door as opposed to inside the door," she said.

One last thought about the Covid vaccines

The early estimates of the efficacy of the mRNA vaccines to prevent infections — in the 95% range — created unrealistic expectations about what Covid vaccines would be able to do over the long-term in blocking all infections. As months pass from vaccination, we've seen declines in neutralizing antibody levels and an increase in breakthrough infections among the vaccinated — a phenomenon that seems to be accelerating with the spread of the Omicron variant.

But make no mistake. The vaccines are working. In the vaccinated, hospitalizations and deaths triggered by Covid infections have plummeted. Those are the performance metrics we need to be keeping our eyes on, said Wherry.

"We are currently hyper-aware — hyper-aware — of infections. And the reaction to these infections in at least vaccinated people is disproportionate with their consequences right now," he told STAT. "To me, it's the wrong mindset."

Wherry said he knows people who have been vaccinated and have later become infected. "I'm walking the dogs and they complain to me, 'Great vaccine.' And I just turn and say... 'When did you have Covid?' And they said 'Two days ago.'"

His response? "Really? Yeah, it's a great vaccine."

