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GTA

COVID-19 and transit: What we think we know may be wrong

By **Ben Spurr** Transportation Reporter

Thu., June 18, 2020 | ⌚ 7 min. read

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According to everything we know about [COVID-19](#), public transit seems like a perfect breeding ground for the disease.

During normal times, a functioning transit system requires thousands of people to crowd together in an enclosed space, spend several minutes breathing the same air, and then spread back out into their workplaces and communities carrying whatever they picked up on board with them.

Combined with economic shutdowns prompted by the pandemic, the fear of contracting the virus on subways and buses has helped decimate ridership on systems, creating revenue crises that pose an existential threat to transit operators around the world.

The effects could be long-lasting. In Toronto, where ridership has dropped to as low as 14 per cent of pre-pandemic levels and the TTC is losing about \$21 million a week, one in 10 riders say they won't take transit again even as provincial authorities deem it safe to reopen the economy, according to [a recent survey](#) commissioned by the agency.

But is transit as dangerous a vector as it appears? Recent international data show a lack of confirmed cases connected to transit use that is striking even when taking ridership declines into account. Some experts say this can be explained by gaps in contact tracing methodologies, but others argue the risk of transmission on public transportation may not be as severe as initially feared.

"There's so much that we don't know about the coronavirus and how it spreads. But we've seen enough new evidence to suggest that public transportation hasn't been the super-spreader that many have assumed," Janette Sadik-Khan, the influential former New York City transportation commissioner and current principal at the Bloomberg Associates, said in an email.

She cited a study in France that determined none of 150 COVID-19 infection clusters identified in Paris from early May to early June originated on the city's transit network. She also pointed to Japan, a country that has experienced only about 17,000 COVID-19 cases, despite having one of the world's busiest rail networks. Canada has now recorded more than 100,000 cases.

Figures like those present a sharp contrast to the conclusions of [a study by an MIT economics professor](#) that was widely circulated in the early days of the crisis. It warned the subway network "was a major disseminator – if not the principal transmission vehicle – of coronavirus infection" in New York City.

The study's methodology and conclusions have been widely criticized, not least because in New York infection rates have been lower in subway-rich Manhattan than in transit-poor boroughs like Staten Island. But Sadik-Khan said its findings and similar proclamations early in the pandemic "scared people and may hold them back from returning to transit."

For transit agencies now plunged into financial crisis, “this fear of transit may ultimately be more damaging than the potential threat of riding it,” she said.

Conclusive evidence linking COVID-19 transmission to transit use appears to be rare in Canada.

As of June 12, 65 TTC employees out of a staff of more than 15,000 [had tested positive for the virus](#). But it’s not known whether they contracted the infection on the job.

Toronto Public Health hasn’t traced any of the city’s more than 13,500 COVID-19 cases to public transit. However, TPH spokesperson Dr. Vinita Dubey cautioned that doesn’t necessarily indicate that infections aren’t occurring in settings like the TTC. Because the virus has a 14-day incubation period and can be spread by people who aren’t exhibiting symptoms, “it is difficult to determine exactly where someone acquired their infection,” she said.

The picture is similar in other Canadian jurisdictions.

Public health authorities overseeing Edmonton, Calgary, Montreal, and Ottawa all told the Star this week that no cases in those cities had been linked to transit. A spokesperson for Vancouver Coastal Health said “we don’t comment on specific cases,” but the agency “hasn’t had need for any public notification to transit users.”

Tom McMillan, a spokesperson for Alberta Health, said the agency “has not identified any cases to date where transit is considered the source of exposure.” But the agency is drafting guidelines for operators like Calgary Transit and Edmonton Transit Services to keep riders and workers safe.

Dr. Isaac Bogoch, an infectious disease specialist at the University of Toronto and Toronto General Hospital, said he wasn’t surprised by the lack of cases linked to transit.

Even in jurisdictions where transit operators haven’t made safety measures like mask use mandatory for riders, Bogoch said passengers appear to be taking it upon themselves to take precautions like wearing face coverings, washing their hands, and keeping their distance from one another, which has likely helped to reduce the spread. Wearing a mask will become mandatory on the TTC as of July 2, with exceptions for young children and people with medical conditions.

Some commentators have speculated transmission on transit hasn’t occurred at high rates because unlike in settings like bars where patrons risk spreading the infection in airborne droplets by talking close to one another, transit riders largely don’t speak to other passengers. And while transit vehicles are enclosed spaces, their doors open regularly, circulating the air.

Bogoch said it’s possible such factors have mitigated the spread of the virus, but their effects are difficult to quantify. He argued what’s more important is the infection rate of the societies in which transit systems operate, which he said bodes well for Toronto.

Even though the city lags behind the rest of Ontario in reducing caseloads, it still has a rate of about 400 per 100,000 people, [according to Ontario Public Health data](#). By comparison, New York state’s rate is about 2,000 per 100,000 people, according to data compiled by the New York Times.

The “general low burden of infection” in Toronto, coupled with measures such as mask use, make transit in the city a “low risk” environment, Bogoch said.

He cautioned that doesn’t mean the probability of transmission on transit is nonexistent, especially as the province continues to open up and more people return to the system. “We’re going to have outbreaks in the GTA, and certainly someone’s going to be infected by this virus on a bus or on a subway,” he said.

Dr. Colin Furness, an epidemiologist and assistant professor at the Faculty of Information at the University of Toronto, warned the lack of evidence connecting infections to public transit can’t be taken as proof the virus isn’t being spread there, and instead could be attributed to blind spots in contact tracing.

He said chains of infection are more easily recreated in homes, workplaces, and other settings where people know each other and can be identified after they come in contact with someone who has the virus. Accurately determining the rate of transmission on transit would be “enormously difficult” because “people don’t live on public transit, people don’t know each other on public transit,” Furness said.

Until there is conclusive proof the virus isn’t spreading on transportation networks, Furness warned any assertions that systems are safe would be overly optimistic.

“It’s going to be pretty hard for me to come to the conclusion that buses and subways and streetcars aren’t risky,” he said. “A responsible person is going to say, look, if we’re not sure, we should not downplay the risk ... So yes, it’s too early to jump for joy.”

TTC spokesperson Stuart Green said it was up to Toronto Public Health to determine how safe the transit system is, but the TTC agrees with the health authority’s position that “the TTC remains a safe system.”

Green said the TTC is “certainly aware of examples from around the world that suggest there are no links between mass transit ridership and viral spread,” but “we are not taking that for granted.” He said “as the city reopens and ridership returns, we will take all steps possible to continue to protect the health and safety of everyone in our system.”

In addition to mandating mask use, the TTC is also cleaning its vehicles several times a day, deploying additional vehicles to busy bus routes to decrease crowding, and is readying crowd management plans for subway stations.

While there remains uncertainty about exactly how risky it is to ride, passengers will continue to have real fear about taking transit while the virus remains a threat, and the TTC will need to address those anxieties to coax customers back.

“We absolutely understand that perception matters for our customers and employees,” Green said. “We want them not only to feel safe, but to actually be safe.”



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