

How can we make schools safer next fall? It will take more than vaccine ^[1]

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EXCERPTED

It was a lousy school year for Canada's elementary and high school students, as well as its teachers. As COVID waves crested and fell, schools opened and shut, then opened and shut again. Ontario's nearly two million elementary and high school students received the least amount of in-person learning of students across the country: Most got just five months under their belts.

And for some, that may be the sum of their school year. "I have some kids that haven't shown up in my virtual classes at all," says Parmeet Singh, an elementary school teacher in Brampton, Ont., which has consistently been one of the country's infection hotspots.

Focussing on improving the situation in hard-hit places like Brampton would help get all of Canada's kids back in class in September, for good. And while the country's vaccination program is going well and will do much of the heavy lifting for us, it can't do all of it.

While there's no crystal ball when it comes to the pandemic, there is a rearview mirror. If ending (and mending) the disruption to education is actually important to us, we'll do what wasn't done last year: Invest in smaller class sizes and improved ventilation, changes that over the long term pay out in more than just infection control.

Here, experts and educators share their thoughts on safe schools in the age of COVID-19.

Were schools safe last year?

University of Ottawa epidemiologist Raywat Deonandan doesn't think "safe" has ever been defined clearly when it comes to schools. "For the most part, schools have always been 'safe,'" he says, since outbreaks are relatively few, and students are unlikely to have severe outcomes. That said, while kids have largely escaped serious consequences in Canada, over 400 youth ages 19 and under have been hospitalized with COVID-19 in Ontario since January 2021 alone. Four have died in that time period, including 13-year-old Brampton teenager Emily Viegas.

The real question, Deonandan says, should be "do schools drive community transmission?" For a long time, the Ontario government's official answer was a firm no. "Transmission is not happening within school," said Minister of Education Stephen Lecce in the legislature in November 2020, as Covid-19 case rates rose in Ontario.

But as internal documents obtained by the Toronto Star later revealed, ministry officials weren't as confident. One wrote in a memo, "Is there any transmission happening in schools? We don't know." A few months later, Ontario schools would record their highest case counts since schools opened in fall.

Anna Banerji, a pediatric infectious disease specialist at the University of Toronto, believes the fact that kids are largely safe from serious complications unfortunately led some governments, school boards and boards of health to weaken policies that could have protected everyone from increasing transmission.

In September 2020, for example, Ontario students required a test to return to school if they had any COVID symptoms. But when long lineups drew complaints, "they changed the policies so that kids with runny noses or headache didn't need to be tested, they could just stay home for a day or two and then go back," says Banerji. In effect, the policies created a blindspot for schools when it came to transmission. It also reduced pressure on the province to create better access to rapid testing or support for parents who had to take time off.

Even as the Ministry of Education and the premier's office refused to publicly connect the dots between their respective policies and transmission rates, evidence increased to suggest that school openings and closures do affect community rates. In November 2020, an article in the science journal *Nature Human Behaviour* analyzed the effectiveness of various government interventions around the world. The findings suggested that school closures reduced the reproduction rate of the virus by between 16 to 20 per cent. (Banning small gatherings was the most effective intervention.)

It's not clear why closing schools is effective, but University of Toronto epidemiologist Ashleigh Tuite speculates it's a combination of how it limits contacts for kids and, perhaps more significantly, adults. Miserable work-from-home parents with kids in virtual school are less likely to circulate widely, which you can take as a silver lining in a pandemic, I guess.

That effect, however, comes at a "tremendous cost," she says. That cost is borne by kids who are pulled out of class with their friends and dropped in front of screens alone, and by parents (mothers, mostly) who have to stop working, work less or operate like some kind of parent-teacher-schoolmate machine.

Tuite doesn't think school closures are a "good tool for controlling transmission," but during Ontario's dire third wave they were a necessary one. "There are other ways [to control transmission], but we didn't do them," she says. For many months, the Ford government resisted calls to implement mandatory paid sick leave, for example, and there is still minimal political will to focus on workplace safety for high risk occupations, such as food processing.

Instead, the Ontario government has decided that schools do contribute too much to community transmission. In late May, an Ontario Science Table presentation suggested a return to in-person learning this June would have increased daily cases by six to 11 percent. It was a rise the table deemed worth the risk, given the disruption to education and the psychological effects school closures can have on kids. The mantra "first to open, last to close" was also invoked, one that has never been put into practice in Ontario.

Regardless, Ford declined to reopen schools to in-person learning, arguing that it would increase daily case counts to 2,000 to 4,000 new cases by the end of July.

The role of the vaccine rollout

Ontario's kids never really had a powerful ally focused on their best interests and following expert advice. Now they do—vaccines that work.

As of June 16, over 9.5 million Ontarians age 12 and up have been given a first dose of a Covid-19 vaccine, and it's looking likely that most in that age group will be able to get their second dose before September.

Vaccinations, in addition to falling case rates, bode well for a safer fall re-opening for schools, says Amy Greer, Canada Research Chair in Population Disease Modelling at the University of Guelph. She's optimistic that we have a real chance to enter into fall "with very low rates of community transmission, which sets schools up in a way that previously we did not have."

If COVID-19 does manage to squeak by a well-vaccinated community into a school, it will encounter a significant population of vaccinated adults (and, in high schools, students). While some people will get the virus anyway, either because they aren't vaccinated or as a result of breakthrough infections, those cases will be easily contained.

"When we have fewer cases, public health units will be able to rapidly test and contact trace when we do get positives," says Greer.

There are caveats, however. Elementary schools won't be as protected, since kids under 12 won't be vaccinated for fall and aren't likely to be eligible until early 2022. That runs up against the presence of variants, particularly the Delta variant, B.1.617.2, which appears to be both more severe and more transmissible than the B.1.1.7 or Alpha variant, which brought on Ontario's third wave.

While it's not entirely clear how variants could impact kids' health, a recent study from Scotland found younger, unvaccinated populations to be the most vulnerable to infection from Delta. More recent research reveals that kids and youth are leading the case surge in the UK.

In Canada, the Delta variant is already proving worthy of concern. In early June, the remote First Nation community of Kashechewan, on the coast of James Bay in northern Ontario, saw rising numbers of Covid-19 cases occurring mainly in children, since most of its adult population was vaccinated. One child's case was reportedly serious enough to warrant an airlift to hospital. In the Yukon, another outbreak is linked to high school grad parties, an elementary school and adults in a bar.

Stop ignoring ventilation

Unvaccinated kids and the looming threat of the Delta variant make a strong case for maintaining masks and distancing measures in schools for at least some part of the fall. That reality also underscores the importance of improving ventilation, an infection control measure that has been mysteriously neglected in Canada and beyond.

Ventilation refers to how you bring fresh outdoor air indoors. It is a fundamental public health measure we could take to make schools safer even aside from Covid-19, says Jeffrey Siegel, an air quality expert and professor of civil engineering at the University of Toronto. Good ventilation helps protect people from inhaling everything from pollutants to other airborne viruses.

"We know that if we have improved air quality, students will have improved cognitive function and higher test scores; they'll have fewer chronic health issues and less absenteeism," says Siegel. "This is an investment, and we are foolish for not making it."

And now we have Covid-19, and its infectious, respiratory droplets that can hang in the air in poorly ventilated spaces, even bypassing some types of masks. Increasing ventilation in indoor spaces is a necessary infection-control measure that, along with mask use and distancing, can reportedly reduce transmission by nearly 40 percent. (The Elementary Teachers Federation of Ontario would like to see masks for teachers upgraded to N95s, in addition to ventilation upgrades.)

While you can bring in outdoor air by opening a window or door, the most effective way to increase ventilation is mechanically through an HVAC system. In addition to heating or cooling a building, an HVAC system can bring fresh air inside, to dilute pollutants and infectious particles.

The Ministry of Education did commit \$100 million to upgrading ventilation in schools for the 2020-2021 school year, an amount it says resulted in some improvements in 95 per cent of school boards. (The federal and provincial government jointly kicked in another \$450 million, bringing the total to \$550 million.) But what those improvements are is hard to figure out.

Ryan Bird, a representative for the Toronto District School Board, said that over 11,000 HEPA air purifiers have been installed since last fall, in Toronto schools that don't have HVAC systems. Those with HVAC systems need time to upgrade them, said Bird, who couldn't provide the number or names of schools doing so.

To find out your child's school has done an upgrade, Siegel recommends asking the principal. "The actual answer may not be helpful but the willingness to engage on the subject tells you a lot," he says.

Banerji would like schools to get proactive about ventilation, too. If they can't improve their systems before September, she says they should think outside the building. "Take them somewhere else that has better ventilation, like a community centre, so the kids are safe," she says.

Optimism for fall

Most experts are optimistic about fall, but always with caveats. They all agree that we can't rush to end the public health restrictions currently in place as we race to vaccinate the population. We must continue to view infection control measures, such as masks, social distancing and working from home, as important for school openings as we head into fall, even if community rates among vaccinated adults suggest otherwise.

Tuite believes caution is warranted when it comes to planning for kids' safety next year.

"Assumptions about kids being okay are getting more complicated as we push further into the pandemic," she says. "Even with pretty strong mitigation measures, 1,200 kids have been hospitalized in Canada. That's something to think about as we relax mitigation measures and at the point when it's becoming more transmissible and more potentially serious."

Greer wants to see provinces rely on a transparent, scientific and data-based framework for de-escalating infection controls at schools, such as taking off the masks and restarting assemblies and music classes. "Those sorts of decisions are in some ways harder to make than escalation measures," says Greer. She doesn't know what the basis of those decisions are yet, but she believes we should spend the next few months establishing clear, science-driven metrics for determining when and what makes it safe to do these things.

With everything we know now, it is impossible to pretend that a poorly ventilated classroom packed with 28 kids is okay, especially if it's located in a community in which parents are likely to work in poorly ventilated environments themselves, without mandated Personal Protective Equipment or sufficient sick leave. It's even less okay if we put unvaccinated kids in this situation as Delta moves through Canada.

All of the knowledge gained should strengthen governments' resolve to open better and smarter than they did last year. This time, there are no excuses for ignoring the lessons learned, or failing our children.

Region: Canada ^[3]

Tags: school age child care ^[4]

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