Back to school, Part 1: An infectious-disease expert on reopening safely [1]

TVO.org speaks with Zain Chagla, an associate professor at McMaster University, about hygiene, classroom quarantines — and what the science says

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EXCERPTS

This is the first instalment in a series on reopening Ontario's public schools. Watch for Part 2 on Wednesday.

As Ontario moves into Stage 3 of reopening, critics of the Doug Ford government have sounded the alarm that the province will be allowing relatively high-risk activities, such as service inside bars and restaurants, to resume before the province has sufficiently flattened the curve. A resurgence of COVID-19 now, it is feared, would jeopardize the reopening of schools in September. A common criticism of the Tories has been that they have developed only general guidelines — not a plan to reopen schools — and that time is running out. What would such a plan look like? This week, TVO.org is asking experts and insiders for their views on what a safe reopening for schools would mean and what challenges it would entail. Today: Zain Chagla, an infectious-disease expert and associate professor at McMaster University, in Hamilton.

Matt Gurney: So, doctor, as you well know, with Stage 3 arriving in most parts of the province, and more coming this week, we're hearing a lot about what will open. Bars. Restaurants. Gyms. But we're not hearing a plan for schools, and there are 2 million kids in this province. So let's start with the big picture and work our way down into the details. You're an infectious-disease expert — what jumps out at you right away about combatting something like COVID-19 in a school setting?

Zain Chagla: A lot of things. It's a complicated environment. But the first thing that jumps out at me is the cohorting of kids. You'd have groups of kids in a classroom together, often in a place that is not necessarily well ventilated. Some classes are going to be in old portables, and we know the air can be pretty stagnant in those environments. So that kind of situation — close quarters, stagnant air, constant physical proximity — is one where the spread of infectious disease can be of theoretical concern. But in practice, in real life, the concern isn't theoretical. We see illnesses transmit in schools all the time. We know every year there are outbreaks of colds and flus and diarrhea in schools, particularly in the early grades and kindergarten classes. These are not low-risk environments for transmission, and that's not even speaking specifically about COVID-19.

Gurney: See, that's interesting. I was literally going to ask about that in my next question, but you've addressed it already. You're drawing a distinction between the older grades and the younger kids.

Chagla: Yeah, absolutely. This is important. Above say, Grade 3 or 4, you can probably expect reasonably good adherence to rules. You can teach physical distancing and good hand hygiene and mask wearing. It's actually a good opportunity to build good life-long habits. But much younger than that, and it's going to be much harder.

Gurney: Well, look. I have a five-year-old and a seven-year-old, and they're barbarians. It's like living with Klingons. Not my kids in particular, even. Mine are relatively well behaved. But kids that age and younger are pretty gross. I love 'em, but every parent knows this. And every teacher, I'm sure!

Chagla: [laughs] Well, you can't draw arbitrary lines, of course, but, sure — the older kids, in high school, you'll be able to count on them more than the young ones. And you'll also be better able to come up with virtual options for the older kids.

Gurney: Yeah. Again, as the father of young kids, this is something I'm thinking a lot about. The kids that are going to be the most problematic in terms of hygiene and respecting physical distance are the ones you absolutely need to have in school. And not just for their sake. The economic restart really does require a functional school system.

Chagla: School matters for all ages. Even the older kids benefit from the routine and social environment. They'll have career aspirations and personal lives and social needs that need school. And, obviously, like I said, there are no arbitrary lines. Individual students are going to have individual needs and abilities. Some older kids will need a classroom setting to thrive, and some young kids are more independent. And this isn't getting into students with significant special needs. But in general terms, yeah, you're right. The older kids are less of a worry but also will need less. The kids that will be the biggest worry are the ones we'll need in classrooms. The younger kids need good social and

cognitive development, and that happens at school, in classrooms and the schoolyards. So, yes, there's an economic case for getting the youngest kids back in school, certainly, but they need to be there for their own sake, too. It's a tough population, but it's essential.

Gurney: In the specific context of COVID-19, you've already mentioned ventilation in schools as being particularly challenging. What about surface contact? I know that touching isn't considered to be a huge vector for transmission, but, as we just established above, okay, the young kids can be … well, gross. [laughs] Does that change the calculus?

Chagla: The balance of the evidence is saying there probably is some transmission off of surfaces, but it's not the big driver of the pandemic. The driver is really close contact — droplet contact, specifically. So, in a school, how do we combat that? Do we need a real deep clean, 360 degrees, every day in every classroom? Probably not. Properly wiping down high-touch surfaces like a doorknob is probably enough on a daily basis. And, like I said above, good hand hygiene — there are good global programs to teach that, even to young kids. So cleaning high-touch surfaces and good hand hygiene will handle a lot of the surfaces. The challenge is going to be those kids that are in contact with each other with the heavy breathing, sneezing, coughing, all kinds of close droplet exposure. This is going to drive the transmission as schools open.

Gurney: Based on what we know about COVID-19, if we aren't doing a deep cleaning, what should the cleaning targets and priorities be?

Chagla: That's really important. A lot of our discussion in the health community right now is about taking the lessons we learned the hard way in the hospitals and applying them elsewhere, including schools. School settings are, in many ways, similar to hospitals, so we can learn a lot and apply a lot of those lessons. And a big one we learned in the hospitals was that the staff were infecting each other. When medical staff were getting sick, people assume they were getting it from patients infected with COVID. And, obviously, that happened, of course. But you'd have medical personnel who were infected but asymptomatic, and they'd be in a breakroom or something, a common staff area, and that's where the outbreak would be. This is global data — health-care workers were more likely to infect each other than be infected by patients. So this has obvious and huge implications for schools.

Gurney: Schools just aren't kids. People keep forgetting that. They say, hey, kids are immune or they don't spread it, so schools are safe. But a lot of adults work in schools, too.

Chagla: Yeah, right. There are common areas. Bathrooms. Breakrooms. Lunch areas. Shared office space. The photocopier room. And these teachers will also be in the community. Nurses go grocery shopping. So do teachers. That risk can't be eliminated. So you could have a school outbreak among teachers that never involves the students. So what do you do? Well, at certain times of the year, take your break outside. Eat lunch outside. Stay two metres away from people at all times. Wear your mask indoors. We might have to look at staggering lunch hours and break times. And, in terms of cleaning, it's those high-touch surfaces. Bathrooms. Sinks. Doors. Food-prep areas. Light switches. And hand hygiene is going to be important for the teachers, too. It needs to be religious — two metres apart, washing your hands, wiping down those high-touch surfaces. And, as natural as it is to commiserate with colleagues, for everyone, not just teachers, we'll have to change routines. A lot of lunches will be eaten alone, I think.

Gurney: That's a key point. I don't want to derail this, but what you're talking about isn't infection control. It's psychology. For doctors and nurses and teachers alike. You gird up for battle against the virus, right? You get your PPE on, and you scrub your hands, and you are so, so careful when you're dealing with patients and students. You're on guard. But you have to let your guard down at some point, and where do you do that? In the breakroom. The virus is out there, but you don't worry about it inside your inner sanctum.

Chagla: That's what we saw. And as an infection-control guy, I know that's a terrible idea. But I get it. Your colleagues are your compatriots. You know them, and you feel safe around them. You think they're low-risk compared to the students or the patients. But these people are risk factors, too. So an infection that begins in a breakroom can spread through a facility. That's what we saw in these health-care-worker outbreaks in the United Kingdom, for example, and elsewhere in Europe. That's what the data showed.

Gurney: Obviously, we're all hoping that this is successful — that we hit Stage 3, the cases stay low, and we reopen the schools without incident. But any responsible plan needs to have a plan for failure. So let's talk about outbreaks. Again, we've seen them in the health-care sector, and we've seen them in schools. And we'll see more in schools. I don't want you to feel pressured to invent policy on the fly, but, in general terms, if there's an outbreak, what does a logical response to that look like? Consider a hypothetical case of a class of young students with one kid getting a confirmed diagnosis. What do we do?

Chagla: In a health-care setting, one case wouldn't trigger a shutdown of a facility or unit, but it would trigger a risk analysis. What was the level of exposure? How sustained was the exposure? Were people wearing masks? Do we have high confidence that there were good practices overall, with physical distancing and good hand hygiene? These are important factors. So someone who had very limited contact with that group probably wouldn't be quarantined. But if it was a classroom of young kids, we'd probably expect that physical distancing hadn't been perfect, or hand hygiene.

So what is likely is that we'd put that class and the teacher in isolation. And it's going to be important to keep these classrooms isolated from each other so that you can do that — just pull one classroom unit out of the school but leave the others. If it was, say, a Grade 10 setting, where there'd been good adherence to masking and hand hygiene, maybe we evaluate that as low-risk and don't isolate them. It would depend on the circumstances.

You've probably seen this report about the hairdresser who had COVID, but she wore a mask, and her clients wore masks, and there were zero cases linked back to her. So, as long as everyone follows the rules and sticks to their units, outbreaks could be very limited and quickly traced. But, yeah, if it's a daycare with toddlers or a classroom of little kids, and everyone is in everyone else's face every 10 seconds, you'd probably need to pull that unit out. But quarantines could be at a classroom level, instead of shutting down entire schools.

Gurney: We talked above about cleaning. Let's stick with this hypothetical. A confirmed outbreak in a class of young students. We send the kids home; we send the teacher home. What do we do with the classroom?

Chagla: You clean it. A deep clean. We've been doing that in hospital outbreaks. And it's also important to be able to say you've done it, because you want people to feel comfortable going back into that room or sending their kids back to that room. But we are having issues with space, right, in our long-term planning for schools. We are going to have to get creative with space. So I could even see that classroom being used to further spread out other classrooms, after it's been cleaned, while those students and the teacher are in their isolation period. So there's no harm in deep cleaning it.

Gurney: What about supplies? I see the way my daughter plays with her friends, and I'm just imagining there being one crayon of death being passed among all of them.

Chagla: Yeah, for sure. Individualized supplies are going to be important. And I think that's achievable. It's relatively low cost to equip your child with their own paper and pencils and crayons and whatnot, and we can find ways to help low-income kids have any supplies they need. So the school boards will want to minimize the sharing of personal items. But it's the personal space that is important, too, with physical distancing. I don't foresee personal items being as much of a challenge as the space. In hospitals, people are in confined areas, but we make sure they all have their own equipment and supplies, and we clean the areas. That can work in schools.

Gurney: I'm going to be talking with some people later in the week who are going to speak to this issue more directly, but I'm curious as to your thoughts on this: A friend of mine is a labour lawyer. And they are sort of a mix of horrified and excited at what's about to start happening. Because not all teachers are created equal. Some are going to be 26-year-olds in fantastic physical condition. Others are going to be much older with a ton of accumulated risk factors. And they're both expected to show up to work in September. We're going to have a ton of really hard decisions coming up about workplace safety, employment standards, liability, insurance … it's going to get complicated.

Chagla: It is going to be very difficult. Where to draw the line and say, this is someone that's too unhealthy to work, is hard. But that same person will still be doing their own errands and shopping. We are starting to understand the risk factors better. But not everyone with high blood pressure is going to die of COVID if they get it. There's going to be a spectrum of risk, and people will have to make value judgments and personal choices.

And you're right, there are going to be other factors, like insurance and liability for employers. Employers and school boards are going to have to consider whether there is a subset of people that can't come back to a full-time classroom because of their own personal health concerns. Maybe they get reassigned to something like a virtual position. There's not a cut-and-dry answer if a person should actually be at work. We can't predict what's going to happen. Individuals will make up their mind or at least get a sense of whether or not they want to return. Employers will need to be supportive of the people that think that they are too high-risk for a plan that's imperfect. How can they maintain an income and contribute while maybe not being on site? It's going to be complicated. There could be a whole new field here, and I could even foresee how we think about workplace risk being changed because of COVID.

Gurney: There's an issue we've danced around a bit, but I want to really drill down into it. Our understanding of the role kids play in this pandemic has been evolving. At first, we thought they were basically immune and didn't transmit. Now we know neither of those things is true — children have died of COVID-19, and they've spread it. But they don't seem to do either of those things all that much. But, certainly, our reopening plans in Ontario need to be mindful of the fact that there have been confirmed outbreaks in schools and daycares in other places. And one thing I think about a lot is the notion of a social bubble. I have one with my parents, my in-laws, my sister and her family. And we've been good about it. But the first day of school bursts the bubbles. Now we're in a bubble with 30 other families and their bubbles.

Chagla: Right. The bubble concept breaks down in daycares and schools. The data on kids is evolving. It's honestly all over the place. At first, like you said, it looked like it wasn't going to be a problem. It's more complicated than that now. This conversation is really in three different domains. What's COVID's impact on kids? They can get it, and they can get sick. Some have died. But we do see far fewer complications with children, and better outcomes. So that's one domain, and that's relatively good news.

Next, if they're infected, which we know they can be, can they transmit it to others? There's some evidence that says yes, but it's very variable. How much do they spread it, and in what settings? This is still an active area. And we need to be specific about "kids" — are we talking toddlers or 17-year-olds? Because teenagers are a lot more like adults, behaviourally and biologically, than they are toddlers.

And the third domain is the broader community context. We are seeing more school outbreaks in areas of high community transmission. Right now, we're looking at Israel, where there is a surge and now high community transmission. We are seeing outbreaks in schools, and potentially teachers being infected by students. But, since there's so much happening outside the school walls, it's hard to tell the role of what's happening inside those walls.

So I think the jury is really still out for a lot of this, unfortunately. I would say that children are probably transmitting, especially the older ones, who are more like adults. But we can definitely say, just like in the hospitals, that the more transmission we see in a community, the more we'll see in our institutions.

Gurney: That's very interesting. Mildly terrifying, but interesting. There's still a lot we don't know.

Chagla: There is, but this is a fascinating moment in history. We've never had something quite like, where specialists in different areas are being asked to come up with strategies outside their fields. We have to break down these silos. Our school boards and education ministries have enormous expertise in education and hiring teachers and developing course work, but now they're trying to develop infection-control plans. And we have huge expertise in exactly that in the health-care system. We need to draw on that and find a way to bring that expertise into other institutions and environments. There's a ton of time pressure. Schools open in six weeks. But it's a fascinating time. We need to

bring our knowledge into a different silo and make a plan that will work.

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