

Covid 19 Delta outbreak: Classroom air quality an 'incredible blindspot', researcher says

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October 20 2021 The number of new Covid-19 cases dropped to 60 today but Dr Ashley Bloomfield warns that infections are likely to keep rising. Fifty-six of the new cases are in Auckland and four are in Waikato.

RNZ

By Phil Pennington for [RNZ](#)

Air quality experts are looking to the Government's pandemic school plan today to do more to protect students in fuggy classrooms.

They met officials yesterday to push for air monitoring and, if necessary, filtering of classroom air to keep Covid-19 at bay.

The UK is trialling high-efficiency (hepa) filters at 30 schools, Victoria began installing 51,000 filters ahead of reopening schools this week, and the US has very detailed advice that also

covers early childcare centres.

By contrast, the Ministry of Education's very limited online advice on ventilation majors on opening windows, not deploying filters.

The virus is able to remain suspended in the air for long periods before being inhaled, triggering new infections, especially in crowded indoor spaces inhabited for long periods - classrooms, say. Infection of young people has been ramping up, here and abroad.

The Government is giving details of schools reopening today.

Julie Bennett, who has championed ventilation versus the virus in schools, met yesterday with the ministries of Education and Health, to lay out the measures they can take, beginning with putting carbon dioxide monitors in rooms.

"I would hope that the indoor air quality in schools is looked at more carefully," the University of Otago researcher said afterwards.

This should involve coming up with a strategy to deal with classrooms ranging from small to large and open-plan.

The meeting was a starting point, she said.

"There is a lot to do. We haven't invested in our school buildings over a long period of time."

Research shows a typical classroom only meets Building Code ventilation standards for less than half of the school day - that not all have opening windows, and where there are, few teachers open them due to noise and wind.

Half of classrooms in a 2013 Auckland study found "very poor" ventilation by measuring carbon dioxide levels.

The Education Ministry says it "recently began talking with the Ministry of Health about the ventilation options they believe can best minimise infection risk in indoor learning areas".

International advice was that fresh air was the best option, so schools should keep windows open all day, it said.

The approach may differ from other countries with different climates and school designs, it

added.

Its statement does not mention air purifiers or monitoring.

The ministry's 2017 air quality standards apply to new buildings, not existing ones.

The Government response is too slow for Auckland GP Dr Sandhya Ramanathan, a YouTube star of Covid explainers - including the latest titled 'Is your school ready?'

"I think we're way behind the eight-ball," Ramanathan told RNZ.

"We should have been looking around the world and preparing for this inevitable reality."

Germany began on this a year ago.

Back in February, doctors at Imperial College London warned there was "an urgent need" for guidelines on schools using ventilation to reduce transmission. Fast forward, and six out of 10 UK principals surveyed want more action on ventilation.

Spurred on by her son returning to class to do Cambridge exams this week, Ramanathan has got together with some other medical professionals to give Auckland school principals advice - such as not to use the air conditioning unless it's switched to fresh air, and don't use A/C at all if it only recirculates the air.

The ministry's advice lacked details, she said, "because not many people know, for example, the difference between an HVAC system and just a heat pump".

"We can protect our children. Because we know that kids can safely return to school, if you use the multi-layered approach" - masks, vaccination and ventilation - she said.

Monitoring machines can cost over \$10,000, though \$400 monitors were developed locally several years ago.

As for hepa filters, a New South Wales researcher has estimated a cost of \$700 per classroom - or \$50m all up in NSW which has 8 million people.

The US has developed some purifiers for just \$200 each.

Germany got on to this at a time the World Health Organisation was fixated on surface-borne Covid-19 transmission.

Professor Lidia Morawska of Queensland University of Technology was hugely influential showing airborne Covid-19 is the greater threat.

She said Germany has had carbon dioxide monitors in its classrooms for years - but New Zealand, Australia and most countries remained largely oblivious to ventilation risks for years, an "incredible" blindspot, she said.

"In October or November last year ... the German government presented a very big financial package in terms of improving ventilation in public spaces," Morawska told RNZ.

"They were prepared for this so ... when the infection risk was acknowledged, they knew what to do."

Others were now playing catch-up - but sometimes by jumping ahead to purifiers, without first monitoring the air.

"The first thing is to understand what is the situation with ventilation," Morawska said, then try to fix a problem by opening windows, and if that didn't work, purifiers might.

But ultimately, classrooms had to be redesigned to ensure their air was not only safe, but fresh, no matter the big upfront cost for a decade or two, she said.

"We are working for our future.

"If we don't start thinking about this now and acting now, we will be in the same situation during the next pandemic."