

United States House of Representatives Select Subcommittee on the Coronavirus Crisis
Public health considerations for reopening schools for in-person learning

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Current situation

Exactly three months ago, I testified in front of the House Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies. At that time, the United States was facing 25,000 to 30,000 new cases and 2,000 deaths each day. States were considering reopening but had mostly not moved to do so.

I said at that hearing that what I feared most was that we would become complacent to the worst horrors and injustices of this pandemic. I feared complacency in becoming numb to those 2,000 deaths per day. Complacency in accepting that healthcare workers did not have the protective equipment they needed to do their jobs safely. And I said at the time that we risked complacency in recognizing that without continued vigilance, we would again create the conditions that led to us being the worst-affected country in the world.

In the intervening three months, our testing capacity has expanded considerably, and we are now registering around 750,000 new tests per day – a number I once considered a weekly goal. We have added new therapies and treatment modalities to our arsenal, which can help people who are seriously ill. And worldwide, we now have 12 vaccines in Phase II trials and 6 vaccines in Phase III trials, with hopes that at least one will be found to be safe and effective in the coming months.

But in other ways, the complacency I warned of has come to pass. In the face of “response fatigue” and economic consequences following stay-at-home orders, many states reopened before criteria had been met to ensure that viral transmission was low enough to control the spread of disease. And, they reopened more fully and quickly than experts recommended. As a result, case numbers have rebounded. After falling in June, our daily death toll is now back up to well over 1,000 lives lost each day and rising. We marked 100,000 deaths at the end of May, and then recently 150,000 deaths.

Our case counts are worse now than they were in early May. In July, the US registered almost 2 million new cases. Some of our big case numbers are attributable to a more robust testing supply, but much of it is not. Some states are setting new records for daily cases, while hospitalizations and deaths (which are not a result of increased testing) are also on the rise in many states.

We still don't have sufficient testing capacity right now to enable the isolation, contact tracing, and quarantine that will help us to get ahead of our outbreak. Last week, around 8% of diagnostic tests in the US came back positive – well above the 5% recommended by the World Health Organization. In the US overall, we find one case for every 12 or so tests that we do. The best-performing countries find one case for every 100 tests, or more. And in some states, like Mississippi and Alabama, the percent of tests that come back positive is more than 15%. The problem is that the greater the prevalence of disease, the more tests you need. Our testing capacity can't keep up because our case load isn't slowing down.

And the most troubling thing to me is that it is not clear how we will get to a better place. We have not yet been able to bring our outbreak under control. So, we should be asking ourselves, where do we hope to be in September, December, February, and what do we need to do to get there? If we do not have in our sights a clear goal, and if we do not pursue that goal with all of the brilliance and tenacity and resources that this country has to offer, it's hard to imagine that things will look much better in a few months' time.

Which brings us to schools. We have been looking ahead to school reopening since they first closed in March. And now, in August, the time we knew would come has indeed arrived. Schools are preparing for a new school year, but, irrespective of whether they are virtual or in-person, this year will present unprecedented challenges to teachers, administrators, students and their families. Our outbreak is simply not under control like we hoped it would be by this time.

Public health considerations

I recently had the honor of serving on a National Academies of Science, Engineering and Medicine committee for K-12 education on responding to COVID-19. That experience highlighted for me the multiple essential roles that schools fill in our communities. They educate our children, preparing them to become informed citizens - a cornerstone of our democracy. Schools set children up for lifelong economic stability by providing a foundation for future work. And they provide services like meals, mental health support and basic healthcare. Schools also provide childcare for working

parents, including for essential workers, allowing parents to contribute to communities in other ways. In so many ways, schools are the flywheel of our society.

But we are not here today because anyone disputes the value of schools. Schools did not close in March because they faded in importance. They closed because of the pandemic. They closed because we care a great deal about protecting children, and teachers, and families at home, and ensuring their health and safety is a top priority.

We know more about the virus now than we did then. We know that children are much less likely to experience severe illness than adults, and often their infections are so mild that they aren't even detected. Nationwide, less than 10% of recognized coronavirus cases are in children. But we also know that is the tip of the iceberg, with many more infections in children than are detected. Serology studies looking for evidence of past infection find that children are infected at rates similar to adults – maybe a little less, but not nearly as dramatic of a difference as symptomatic case numbers would suggest.

Children are much less likely than adults to die; less than 1% of coronavirus deaths in the US are in kids. But less than 1% is not zero. Tragically, 270 people between the ages of 0 and 24 had died of COVID-19 as of August 1, according to the CDC. If we look only at children ages 0 to 14, there were 45 young lives lost. There is also emerging evidence that children can develop a rare but serious inflammatory syndrome that can damage multiple organs, including the heart, lungs, kidneys, and brain. As of mid-July, there were reports of 342 cases of pediatric multisystem inflammatory syndrome and 6 deaths in 37 jurisdictions according to the CDC.

Schools are not attended only by children. They are also workplaces for teachers and staff, who are at higher risk of severe illness because of their age. And children return home to family members, many of whom may be older adults or have underlying health conditions. An analysis published in CDC's *Morbidity and Mortality Weekly Reports* found that overall, 47% of U.S. adults are at increased risk of severe COVID-19 because of underlying health conditions. We must consider these groups in our calculus as well.

Although many gaps in our understanding remain, it is becoming increasingly clear that children are able to spread the virus. Multiple outbreaks, some quite sizeable, have been described in childcare settings. Most recently, a report of an outbreak at a summer camp in Georgia found that nearly half of campers were infected. The camp had to close just a few days after opening.

Viral load studies find that symptomatic children have as much virus in their nasal passages as adults. Although viral load does not always correlate to infectiousness, it's an important clue. What still has not been determined is whether asymptomatic

children are capable of transmitting the virus as efficiently as adults. That's a critical area of research we should be pursuing to assess the safety of school settings. But even without that piece, we can say with confidence that outbreaks in schools are likely.

This risk underscores the importance of mitigation measures to slow the virus's spread. On that front we also know more now than we did in March. In addition to physical distancing and hand hygiene, it is now clear that universal masking and indoor ventilation and air circulation are important for reducing risk. And limiting the number of contacts any person has, which in the school context could mean hybrid approaches or pods, is an important option as well. But above all, the most important factor in determining whether schools can safely reopen is the prevalence of disease in the community. Communities that have a lot of virus circulating will have a much tougher time safely reopening in-person learning than places where things are under control.

A recent analysis by a research group at the University of Texas at Austin found that more than 80% of Americans live in a county where at least one infected person could be expected in a school of 500 students and staff, within the first week. Currently, most states have at least one county that could statistically expect to see a half dozen or more infected students in a school within the first week of reopening. Those places will have a difficult time staying open safely, even with robust mitigation measures.

Recommendations

How these factors come together – the importance of schools, the risk of the virus to children, teachers and families, local disease prevalence, mitigation measures – is probably the most complex decision of this pandemic. We all want in-person learning, but when and how can we make that happen, as safely as possible?

These decisions should be left to communities. How communities weigh the risks, benefits, and resources available to support in-person learning will vary significantly from place to place. That decision-making process should include coalition of staff, families, health officials, and other community stakeholders.

But communities can't decide alone, and they can't implement alone. School leaders and families are not expert in pandemic preparedness or epidemiology. They need clear guidance and technical support from our public health authorities at the federal, state and local levels. For example, CDC documents on school reopening distinguish "substantial controlled" from "substantial uncontrolled" spread, urging consideration of school closures for the latter. Additional guidance on what indicators and thresholds might differentiate the two categories would help communities to better assess their

local conditions. Districts also need supplemental funds to implement the mitigation measures needed to slow spread, or to support the technologies and support services needed to deliver and support effective remote learning. And above all, they need to be able to make decisions appropriate to their local disease prevalence, risk tolerance and capacity to implement mitigation measures, without fear of having funds withheld, or their decision undermined.

Although we have learned a lot about the virus in the last few months, there are many questions unanswered. The federal government should put in place now the necessary research studies to collect data on our most pressing questions, like whether asymptomatic children are infectious, which mitigation measures are most important, how remote learning can be most effective and how best to approach these issues with respect to underlying educational inequities. Bill S.4377 was recently introduced to the Senate Committee on Health, Education, Labor and Pensions that would direct the National Institutes of Health, together with CDC, to study transmissibility in children and adults, the vulnerability of children and adults to severe illness, and personal protective equipment. That research would be helpful in refining our understanding of the risks of reopening school buildings for children, teachers, families, and the larger community.

The more we can learn about this virus, the better informed our decisions will be – and we can be sure that there will be many more difficult decisions, including those on schools, between now and when we find a safe and effective vaccine that is accessible to all Americans.