



Invited Commentary | Public Health

On the Value of COVID-19 Testing for Children Beyond the Spring of 2021

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As we pass the 1-year anniversary of the start of the COVID-19 pandemic, an analysis by Moghadas and colleagues¹ considers the value of frequent testing of schoolchildren in reducing community transmission rates. Certainly, the US and many countries find themselves in a stronger position than they were in 2020. In the US, the pace of vaccinations is increasing, and hospitalizations are now declining in most regions. This will lead some to wonder what value school-based testing can bring in the coming months, particularly during the 2021 to 2022 academic year.

However, it is unlikely that the next academic year will start with classrooms of fully vaccinated children because vaccine trials are just now commencing for elementary school-age children. It is likely that many children will not be offered vaccination until 2022. Furthermore, required vaccination for school entry is unlikely to be considered widely until full US Food and Drug Administration approval has been granted (the vaccines are currently being used under a Food and Drug Administration emergency use authorization).

With increasing vaccinations of adults, we should nevertheless anticipate that the next academic year will return our youth to normal school days with full-time in-school instruction, even if not all have been vaccinated. The lower risk of severe disease in children and adolescents, and adequate protection of older individuals, will likely make these decisions straightforward. However, a growing reservoir of variant strains and continued vaccine hesitancy may create uncertainty about the safety of crowded classrooms, particularly if the country experiences a higher than expected 2021 to 2022 seasonal peak in SARS-CoV-2 transmission. Although the growing proportion of the population with immunity, from either natural infection or vaccination, is likely to blunt the anticipated peak in COVID-19 infections next winter, some communities and their schools will want additional measures of safety in place as contingency plans if winter transmission rates surpass expectations. Such is the nature of COVID-19 becoming an endemic infection, likely to join influenza as 1 of 2 primary respiratory viruses of concern each winter.² SARS-CoV-2 may become less virulent than it was at the onset of the pandemic because of increasing immunological memory in the population or acquired mutations among variants that may favor increased transmissibility over increased virulence, but it may likely continue to add burdens to our hospitals each year, particularly for older adults.

In this regard, the analysis by Moghadas et al¹ is particularly relevant. Through a very thoughtful simulation, the authors consider minimum thresholds of detecting early infections in children in order for communities to keep transmission at bay (defined as an attack rate <5%). The authors estimate that detecting only 10% to 20% of such infections in schoolchildren within the first 3 days after onset of infection may be enough to prevent widespread community transmission, assuming that a majority of adults are vaccinated in the area.¹

As leaders of a large regional school-based testing initiative, Project ACE-IT, in the Southeast region of Pennsylvania, we cannot understate the value of these findings. Partnering with the US Department of Health and Human Services and the Centers for Disease Control and Prevention to deliver weekly testing to staff and students during the second half of the 2020 to 2021 academic year, we have seen firsthand how challenging it is to deliver school-based testing to reduce school-related transmission among staff and students. Weekly surveillance testing (ie, assurance testing) has, in large part, remained voluntary, in contrast to the required participation that many colleges and universities have imposed on their students, a now-proven strategy to achieve consistent viral reduction over time.³ In our region, some kindergarten through grade 12 teachers and families have

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opted out of testing, and many school leaders have been reluctant to require testing beyond those children participating in scholastic sports or extracurricular activities, given the uncertainty of legal authority for mandatory testing for all staff and students. This has led some to question the added utility of testing students and staff weekly, if there is a large group that is not participating.

What the study by Moghadas et al¹ reveals to us is that we should not allow the perfect to be the enemy of the good. Weekly assurance testing may still be valuable despite incomplete participation. The goal of a strong school-based testing program is both assuring the community that schools can be safe and achieving a modest viral reduction by identifying some of the potentially contagious individuals early and thereby preventing in-school exposures. Short of full participation, this analysis¹ reveals that from a public health perspective, viral reduction on the margins can be extremely valuable, particularly as vaccine coverage grows in other areas of the community. Yes, we should encourage and incentivize full participation in such testing programs but we should not abandon them if some opt out.

Ultimately, this analysis by Moghadas et al¹ reveals the potential benefit of using school-based testing, even in the face of widespread adult vaccination, to minimize risk to communities as schools repopulate following the COVID-19 pandemic. The goal of 10% to 20% reduction of early contagious individuals in schools is attainable and can help persuade participation by reluctant school districts that may be building back their school-based health programs after years of neglect. The world has suffered greatly since early 2020, but there are lessons that will endure past this epidemic, and we can only hope that school-based testing for transmittable disease will grow and be sustained after the pandemic is beyond its worst days. The article by Moghadas et al¹ gives us a vision for what that might look like, and it is one that can occur in parallel to schools resuming normally next year, with limited disruption from other safety protocols of the COVID-19 pandemic year.

ARTICLE INFORMATION

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