

It's Time to Put Children and Young People First During the Global COVID-19 Pandemic

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Children have been relatively spared from the effect of clinical coronavirus disease 2019 (COVID-19). The newly described inflammatory syndrome^{1,2} is rare in terms of the total population of children, and severe acute forms of COVID-19 are



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even rarer in children and young people.³ Despite this, both experts and the public have struggled to come to terms with the fact that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is also different from all other known respiratory viral infections: there is significant uncertainty regarding children and young people's ability to catch, transmit, and spread the virus. With no immediate vaccine or cure available, the only effective public health response has been widespread lockdown, including school closures now approaching more than half of the calendar year at considerable detriment to the long-term education and mental health of an entire generation.^{4,5} With the start of the academic year in northern hemisphere countries, there is an urgent need to understand children's role in transmitting SARS-CoV-2.

While the precise role of children in the transmission of SARS-CoV-2 has been difficult to ascertain, a new article by Viner et al⁶ helps bring us a step closer to understanding these dynamics. A meta-analysis of contact tracing data reveals a significantly lower proportion of children acquiring the infection than adults from infected index cases within the household (odds ratio, 0.41; 95% CI, 0.22-0.76). Looking specifically at studies of household contacts, perhaps the most reliable indicator of relative infection susceptibility, these data suggest young children in particular (age <12-14 years) are less than half as likely to acquire infection with SARS-CoV-2 than adults, given an equivalent, or at least very similar, exposure. These findings are supported by national testing data, including seroprevalence, which have generally found lower proportions of children with evidence of prior infection with SARS-CoV-2. Also in line with national data, this difference is much less marked for older children or adolescents. While some of these findings may be influenced by school closures reducing social contacts, it is important that children have a similar or lower seroprevalence than elderly individuals, despite higher levels of household exposure to infected contacts. In spite of everything we have known and understood about respiratory viral infections to date, it does now appear that children overall are relatively less susceptible to becoming infected as well having less severe infection itself.

How infectious children are once they have acquired the SARS-CoV-2 virus remains unclear. Studies have confirmed children carry viable virus in their nasopharynx, so children

are almost certainly infectious.⁷ While some evidence suggests that symptomatic younger children may have higher viral loads and therefore be more infectious than older children and adults,⁸ this is at odds with other preprint studies demonstrating similar or lower viral loads in mixed cohorts of children and adults.^{9,10} Contact tracing studies from schools have generally been reassuring, including data from Australia, Singapore, and Ireland.⁶ Early data from England generated during the early phase of school reopening also found most cases to be isolated: of 30 outbreaks (consisting of 2 or more cases), 22 involved only staff-to-staff or staff-to-pupil transmission.¹¹ On the other hand, studies in secondary education in France¹² and Israel¹³ during periods of high community transmission have demonstrated outbreak potential.

How to interpret these data is still not clear as 1 fundamental question has not yet been answered. So far, the direction of spread has been difficult to elucidate in that it has been impossible to determine the relative proportion of teacher (adult)-to-child spread compared with child-to-child spread. Studies looking at secondary attack rates from children compared with adults have also shown mixed findings. A study from South Korea showed markedly lower rates from young children as index cases,¹⁴ whereas preprint data from Italy show slightly higher rates,¹⁵ which the authors suggest may be caused by inability to isolate infected children from caregivers. These studies are also affected by crossover of the exposure, as many children have shared the initial infection exposures with supposed secondary contacts. This means the adults and children have actually become infected at the same time,¹⁶ and there has likely been some misclassification of index cases, as this is often determined by who becomes symptomatic first. This remains hard to investigate in a disease where the true proportions of asymptomatic infection according to age remains unknown.

Studies into the precise role of transmission in schools are ongoing, but there will be no definitive answers forthcoming in the immediate future. There is experience from countries such as Denmark, Norway, Iceland, and the Netherlands where schools opened early but carefully and did not see resulting increased levels of community transmission. Equally, there is a warning from Israel where schools opened concurrently with most of society and were linked to a substantial number of cases.

How individual governments make their decisions regarding when and how to open schools and keep them open must avoid further politicization and reductionism of the debate. The current generation of children are too important to be used as a political football, and all leaders have a responsibility to

focus on children and young people's well-being and long-term future even at the potential cost to some sections of the economy. Are teachers and their families any more at risk than health care workers and people working in the food and supply chains?

Difficult decisions will undoubtedly need to be made, taking into account local community transmission (national trends can hide highly variable local differences), the resources available for schools to provide reasonable infection prevention measures, social and cultural considerations of the acceptability of various interventions, and just as importantly the needs and viewpoints of the children and families whose long-

term futures are damaged by prolonged school closures. It is not so simple as to say that children are not affected and cannot transmit, nor to say that schools should be closed or risk near certainty of propagating a second wave of infections. Schools cannot be opened with impunity in the setting of moderate to high community transmission, nor can they be kept closed indefinitely. The public has borne the huge cost of the pandemic without extreme panic, in part because children and young people are not dying or becoming severely ill in large numbers. The education and well-being of the current generation of children and young people should be the highest priority in any national strategy to reopen society.

ARTICLE INFORMATION

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Published Online: September 25, 2020. doi:10.1001/jamapediatrics.2020.4582

Conflict of Interest Disclosures: Dr Faust reports personal fees or grants for contract commercial clinical trials were paid to his institution (with no personal payment of any kind) from AstraZeneca/MedImmune, Sanofi, Pfizer, Seqirus, Sandoz, Merck, GlaxoSmithKline, and Johnson & Johnson outside the submitted work. Drs Faust and Munro are funded in part by the UK National Institute for Health Research (NIHR) Southampton Clinical Research Facility; Dr Faust is an NIHR senior investigator.

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