Return to School for Children With Tracheostomy or Requiring Noninvasive Ventilation Lessons From the First Lockdown in the United Kingdom

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The contribution of education to long-term health has been documented in many epidemiological cohorts. For children with long-term conditions, education impacts positively not only on the development of learning outcomes and social skills, but also on their physical health outcomes. During the first national lockdown from March to June 2020, schools were closed. Most children remained at home and engaged with remote education, based on digital platforms and virtual communication with their teachers. The aim of this intervention was to protect children from contracting COVID-19 disease and to limit community transmission. Emerging epidemiological data showed that children were less susceptible to COVID-19 disease compared with adults, and their risk of developing severe disease was low. Therefore, return to school was rightly expedited after the first lockdown. This commentary describes the reflections of working in a multidisciplinary approach between community pediatricians, pediatric respiratory doctors, and education professionals to encounter the difficulties of the return to school for children with tracheostomies or requiring noninvasive ventilation.

Children with tracheostomies or on noninvasive ventilation were deemed vulnerable to COVID-19 disease, and their return to school after the first lockdown was dependent on case-by-case assessment of any possible underlying health conditions and of their requirements for care at school. Although this is a small group of children (approximately 1,000 children in the United Kingdom and 1,500 children in North America, based on epidemiological data), they are high utilizers of health care. Even when children were deemed ready to return to school, some parents opted to keep them at home because of anxiety about COVID-19 disease. The tracheostomy care and the suctioning of secretions in children on noninvasive ventilation caused concern amongst education professionals because of issues of transmission of SARS-CoV-2 virus, given that guidance about aerosol-generating procedures (AGPs) suggested that teachers should wear the highest level of personal protective equipment (PPE) and should ideally use separate rooms. Schools were having problems following guidance because of restricted rooms, reduced staffing in view of shielding, access to PPE of the suggested quality, and issues around safe transport to and from school. In addition, the guidelines around use of advice from the National Tracheostomy Safety project suggested that aerosol PPE was not required for tracheostomy cares.

ABBREVIATIONS: AGPs = aerosol-generating procedures; PPE = personal protective equipment

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More specifically, no aerosol PPE or separate room would be required during suctioning of asymptomatic children attending school. Table 1 summarizes US and UK guidelines informing the use of PPE and the need for separate rooms for suctioning at educational settings.

Based on the government’s second National Lockdown, the decision was made for schools to close, and remote learning was again underway. Now that children have returned to school, similar issues could occur again. Evidence suggests that the new coronavirus variants are more transmissible, and future variants potentially could be more dangerous. Virus sequencing showed that the affinity of the new variants for the angiotensin-converting enzyme 2 receptor is higher. Also, emerging epidemiological evidence around transmission of COVID-19 disease at school settings was raising questions. Early data released from the Department for Education—collected since October 2020—showed that for teaching assistants and teachers the rate of COVID19 infection was seven times higher in special schools (Impact of COVID on school workforce | NEU) compared with primary schools and nurseries. However, whether these infection rates reflected community transmission was unclear. These figures raised concerns about reducing transmission of COVID-19 in schools in general and in special schools. Special schools provide education for children with a special educational need or disability. Many of these children also have complex medical needs. The staff at these settings are trained to provide holistic support to these children, including managing their health care needs at school. The incidence and morbidity of COVID-19 disease in children has always been considered low compared with adults.

Children with disabling long-term conditions have heightened risk for abuse or neglect. School is a place of safety for them, and the return to school, when safe with respect to COVID-19, is a public health priority. Lessons from the first lockdown must be learned. In a survey performed before and after the lockdown, parents of children with special educational needs and disabilities reported emotional difficulties, and teenagers with mental health disorders reported that lockdown and

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### Table 1: Table Describing Existing UK and US Guidelines Regarding the Recommended Protection for Staff Working at Educational Settings Who Will Perform AGPs in Children With Tracheostomy or on Noninvasive Ventilation

<table>
<thead>
<tr>
<th>Guidelines (Source)</th>
<th>Personal Protective Equipment (PPE)</th>
<th>Use of Separate Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health of England (PHE) COVID-19 infection prevention and control guidance (publishing.service.gov.uk)</td>
<td>Aerosol PPE 1. “Fit-tested” FFP2/3 respirator 2. Gloves 3. Long-sleeved fluid-repellent gown 4. Eye protection</td>
<td>Any AGP to be carried out in a designated room at school with the doors closed and any windows open Urgent tracheostomy tube suction can take place in the same room after individual risk assessments</td>
</tr>
<tr>
<td>British Paediatric Respiratory Society (BPRS) BPRS Guidance for management of children with tracheostomies and those on long-term ventilation during the endemic phase of the coronavirus (COVID-19) pandemic (3).pdf</td>
<td>Droplet PPE on asymptomatic children on noninvasive ventilation or with tracheostomies Aerosol PPE for children at high risk of generating aerosols, particularly at times of high circulating prevalence of SARS-CoV-2 in the community</td>
<td>Tracheostomy changes should be performed in a separate well-ventilated room at school away from other children Cough assist procedures should be undertaken at home rather than school For use of the cough assist in school, this should be undertaken in a well-ventilated room at school away from other children</td>
</tr>
<tr>
<td>National Tracheostomy Safety Project (NTSP)(UK and Ireland) Updated NTSP Paed Tracheostomy LTV during COVID_19 Jan 2021.pdf</td>
<td>Droplet PPE for tracheostomy cares in the setting of a well, asymptomatic child who is able to attend school</td>
<td>AGPs (such as suctioning) can be carried out in the same room at school but on current data this is certainly not essential.</td>
</tr>
<tr>
<td>American Academy of Paediatrics (AAP) Guidance on the Use of Personal Protective Equipment (PPE) for Paediatric Care in Ambulatory Care Settings During the SARS-CoV-2 Pandemic (aap.org)</td>
<td>Aerosol PPE and eye protection for AGPs (including suctioning during tracheostomy cares)</td>
<td>AGPs (eg, airway suctioning, airway clearance procedures, tracheostomy changes, noninvasive ventilation, manual ventilation, and nebulizer treatments) in separate areas (ideally with negative pressure flow)</td>
</tr>
</tbody>
</table>

AGP = aerosol generating procedure; FFP2/3 = Filtering Face Piece Class 2/3.
remote schooling made their lives worse.\textsuperscript{5} The impact of schools’ closure and delayed return for this group of children should not be underestimated.

This commentary suggests a number of arrangements that need to be prioritized to ensure safe return to educational settings for children with tracheostomies or on noninvasive ventilation.

- Multiagency professionals need to work closely together with education systems so that the necessary provisions are in place to respond to emerging risks.
- It is important to ensure coherent health guidance around AGPs at school and the level of protection needed.
- If guidance clearly indicates that aerosol protective equipment is required, then teachers must have access to the appropriate PPE. If aerosol PPE is required, this should be planned so that this does not constitute a reason for delaying getting children back to school.
- Availability and use of PPE should reflect the role being carried out and the level of risk being taken, rather than the employer.
- Vaccination of education professionals should be prioritized, particularly for those who might be required to perform AGPs.

Return to school for children requiring noninvasive ventilation or who have a tracheostomy should be possible, with concise and practical plans and proper support for teachers. Society owes a duty of care to those who may be taking risks to support children, and more needs to be done at a national level. Teachers and community and respiratory pediatricians should work closely to help resolve any arising issues. In the meantime, additional data collection around the route of transmission, especially in view of novel virus strains, is important to inform policy, commissioning, and rigorous practice response.\textsuperscript{6}

References