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with COVID-19. The absence of an increased incidence of asthma and COPD has been noted in several countries that have described the clinical characteristics of patients with COVID-19.1,2 Globally, China has the highest burden of COPD, yet in a pooled analysis of 45 000 patients with COVID-19, fewer than 2% had a respiratory illness.3 In early reports from Wuhan Province, China, only 1·1% of people with COVID-19 were noted to have COPD, while asthma was not even reported in this report.4 These observations for ICS—while certainly not forming a complete picture—should not be ignored, especially since one would expect patients with pre-existing, serious lung conditions to be over-represented, not under-represented, among those with COVID-19 disease.

Whether use of ICS protects against COVID-19 is still unknown, but to dismiss this hypothesis as nonsense is premature. ICS as a therapeutic intervention still need to studied and clinical trials assessing their efficacy in COVID-19 are ongoing in various clinical settings, the results of which are eagerly awaited (NCT04416399 [UK]; NCT04355637 [Spain]; NCT04193878 [USA]; NCT04331470 [Iran]; NCT04377711 [USA]; NCT04330586 [South Korea]).

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COVID-19, asthma, and return to school

Social distancing and lockdown measures have included the suspension of children and young people’s education for several weeks to months. Although the precise educational and societal effects of closing schools are unknown, they are likely to be substantial and will almost certainly have exacerbated inequalities. In countries in which society is reconfiguring to a new normal, the priority must be preparing for reopening schools because of the potential lifelong impact on children and young people. However, with this return to school rapidly approaching, there should be particular considerations regarding children and young people with asthma.

There is an annual seasonal autumnal spike in asthma attacks in children and young people (the so-called September epidemic) due to colder weather, common viral infections, aeroallergen exposure, and reduced asthma medication compliance.5 It is unclear where various countries will be with respect to ongoing community spread of COVID-19 in the autumn, but we anticipate constraints in ongoing health-care resource allocation in many parts of the world; for example, prioritisation of respiratory care in people with moderate to severe asthma, including limitation of exposure to aerosol generating

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procedures such as spirometry. These constraints might reduce access and follow up for children and young people with milder asthma, who are at high risk of asthma exacerbations and emergency department visits. However, as stay at home orders have had a substantial impact on children and young people, including decreased vaccination rates, delayed management of health conditions, prolonged exposure to indoor home air pollutants, and impacts on mental health, it is possible that in some children and young people a return to school might improve overall asthma control.

It is important to reassure families that severe COVID-19 infection is rare in children and young people, irrespective of underlying asthma. Despite this, children and young people with asthma might be at high risk of missing out on education when schools reopen. Asthma can be confused with COVID-19 respiratory symptoms, and children and young people with cough and wheeze at school are at greater risk of being sent home. To minimise this disruption, rapid testing services, which are likely to be stretched, should be prioritised for children and young people wherever possible. Primary, secondary, and tertiary care services can also mitigate this problem by adhering to evidence-based approaches to childhood asthma. In particular, a focus on asthma control, risk stratification, and medication adherence will be essential, including ongoing review of inhaler technique and a personalised written asthma action plan, whether in-person or virtually. Prioritising less (or no) short-acting bronchodilator use, as recommended in the Global Initiative for Asthma (GINA) 2019 and 2020 strategy, and clear stepwise action plans might improve asthma control and management among people with mild asthma. An ongoing cycle of assess, adjust, and review, as recommended in the GINA guideline, is essential because a return to school this year might impact asthma in ways that are unpredictable at present. An appreciation of the effect of social determinants of health among families of children and young people with asthma, whether this be housing quality, adequately heated and ventilated homes, access to transportation, poverty, health literacy, access to medications, or access to health care, will be important, since economic depression is anticipated to worsen. Broad access to influenza vaccination will be an important public health strategy to further decrease risk, and particular effort must be made to educate families about the benefits of vaccinating children and young people with asthma.

Little guidance exists on how to transition children and young people with asthma back to school and how to counsel their caregivers on mediation of risk. Although returning to school is of utmost importance for education and social development, mental health, and mitigation of food insecurity, ensuring that those with asthma return to school safely will require diligence and ongoing monitoring. In addition to the broader public health recommendations (screening, physical distancing, mask wearing, and hand hygiene), specific recommendations might be especially salient for families of children and young people with asthma. For example, regular environmental cleaning is recommended to reduce the presence of severe acute respiratory syndrome coronavirus 2 on surfaces in schools, but various household cleaning products have been associated with an increased risk of asthma and wheeze across all age groups. Consequently, cleaning products used in schools should be free of organic compounds, irritants, or fragrances. Improving classroom ventilation will be important overall, but there is a fine balance between opening windows and maintaining thermal comfort, and care must be taken to reduce exposure to outdoor seasonal aeroallergens, such as mould or pollens, in children and young people with atopic asthma.

Although large-scale studies are scarce, available data indicate that indoor air quality in schools is often poor, with pollutant concentrations frequently exceeding EU and WHO guideline values. Indoor air quality monitors that measure carbon dioxide and humidity might be useful adjuncts. Schools could use strategies to reduce traffic pollution, including anti-idling policies at drop-off and pick-up times for those driving cars, encourage as many students as possible to arrive on foot or by bicycle, and arranging deliveries outside school hours.

Those who work in health, school, and government should be mindful and considerate of the concerns of children with asthma and their parents. Urgent guidance, incorporating views of various stakeholders, including children and young people, is required to prepare families, physicians, and schools for reopening in the autumn. Formal health need assessments,
weighing up the risks and benefits of school attendance for children with asthma, are required to properly inform such guidance moving forward. Involving schools in ongoing recognition of asthma symptoms will be essential. In the interim, focusing on asthma control and medication of risk might allow children and young people with asthma—and all children—to return to school safely.

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