COVID-19 in children: time for a new strategy

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We need to consider offering vaccination to adolescents and young adults

The generally mild course of coronavirus disease 2019 (COVID-19) in children, as observed during the early phase of the pandemic, may not continue to be typical as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) mutates. In this issue of the *MJA*, Ibrahim and colleagues[1] describe the characteristics of children positive for SARS-CoV-2 who presented to 16 Australian hospitals during February – September 2020, when the Wuhan strain of the virus was circulating in Australia. Reassuringly, most of the 393 children did not need hospital care, and there were no deaths.[1] However, 44 children were admitted to hospital (11%), including two who developed paediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2 (PIMS-TS), and 17 were managed with hospital in the home care.[1]

These findings are consistent with medical experience overseas. A systematic review of 24 international studies undertaken during 14 January – 9 March 2020 concluded that children experienced less severe COVID-19 than adults,[2] although the review included one study (from China) that reported a higher rate of severe infection in children (7.6%).[3] This latter figure contrasts with the finding of Ibrahim and her colleagues that only two of 393 children developed PIMS-TS (0.5%, or 4% of hospitalised children).[1] The early Australian experience was that the probable source of infection for most children was, as expected, a member of the child's household rather than someone at their schools or in childcare.[1]

However, during a pandemic it is wise to prepare for changes in clinical presentation, health outcomes, risk of acquisition, and transmission direction. Hospitalisation and intensive care admission rates in the United Kingdom peaked in January 2021 and declined to low levels by May 2021,[4] reflecting the rise and fall in the number of Alpha strain-related cases.[5] British analysis of Delta-related cases has not yet provided information about the relative risk of hospitalisation and death for children.[5-7] The most recent epidemiological analysis by Imperial College London, comparing round 13 community testing (24 June – 5 July 2021)[6] with round 12 testing (20 May – 7 June 2021),[5] found that Delta had become the dominant variant in England more rapidly than the Alpha variant.[6] The proportion of Delta isolates among sequenced samples had risen to about 95% in round 13, despite the vaccination roll-out.[6]

COVID-19 in England is now driven almost entirely by the Delta strain. This should have signalled that lessons learned during the first year of the pandemic might need to be revised everywhere. The case doubling time during round 13 of community testing in England was 6.1 days (95% confidence interval [CI], 4–12 days).[8] The PCR cycle threshold value (Ct) for patients infected with the Delta strain was lower than for those infected with the Alpha variant;[9] 4.0% of people under 50 years of age in whom Delta was identified during 1 February – 21 June 2021 had presented to emergency departments, similar to the rate for those with Alpha (4.9%).[6] The risk of hospitalisation within 14 days of diagnosis, adjusted for age, was greater for people with the Delta strain (hazard ratio, 2.26; 95% CI, 1.32–3.89).[10] It is too soon to assume that the current 28-day fatality rate associated with the Delta variant (0.2%) will continue to be lower than for Alpha (1.9%),[6] given the lag between hospital admission and death. The likelihood of household transmission in England is higher for the Delta than the Alpha variant (odds ratio [OR], 1.66; 95% CI, 1.28–2.14); children under 10 years of age are more vulnerable to Delta transmission by a household contact than people aged 30–39 years (OR, 1.46; 95% CI, 1.23–1.75).[11]

A concerning development was the high prevalence of infections in children during round 13 of community sampling. The highest burden of infection was in young adults (18–24 years of age: 1.4%; 95% CI, 0.89–2.18%), followed by children aged 13–17 years (1.33%; 95% CI, 0.97–1.82%) and children aged 5–12 years (1.05%; 95% CI, 0.71–1.56%).[8] These rates are up to five times as high as for people aged 65 years or more. The risk of Delta by age group was examined in round 12 and reported those aged 5–12 years are 2.61 times as likely (95% CI, 1.32–5.17) to be infected as people aged 35–44 years.[7]

These signals of change in the epidemiology of COVID-19 need to be met with a change in our approach to prevention and control. COVID-19 vaccination in England has been opened to young adults (18–24 years).[12] However, 3 003 767 people in this age group (57%) had received one dose by 20 July 2021, and 899 242 had received two doses;[13] that is, just 17% of young adults were fully vaccinated. Vaccinating children aged 12–17 years to reduce the burden of disease and transmission has not yet been considered in England. The United States Food and Drug Administration has now provided an Emergency Use Authorization for administering the Pfizer–BioNTech vaccine to 12–15-year-old children.[14]

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The Delta variant is the most rapidly transmitted and formidable SARS-CoV-2 variant of concern to date, and the burden of Delta infections is greatest among children and young adults, who are also the main drivers of its spread.[5-7] One-quarter of the COVID-19 cases reported by Ibrahim and colleagues were 12–18 years of age.[1] To assume that COVID-19 will continue to be a mild disease for children is to fail to adjust responses based on knowledge gained earlier in the pandemic. We must appreciate what we do not yet know, and be prepared to adapt.[15] It is time to consider expanding our vaccine roll-out to include adolescents and young adults.

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