

# Balancing the medical and social needs of children during the COVID-19 pandemic

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During the New South Wales Delta outbreak, social factors caused more hospitalisations than medical reasons



Since the beginning of the coronavirus disease 2019 (COVID-19) pandemic, 1–2% of reported severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections have been in children, most of whom had no or only mild symptoms.<sup>1</sup> However, the proportion has risen as highly transmissible SARS-CoV-2 variants emerged and public health restrictions were eased. By mid-July 2022, 946830 of 8966804 SARS-CoV-2 infections in Australia (10.6%) were in people under 20 years of age, and 21 of 10968 COVID-19 deaths (0.2%) were in this age group.<sup>2</sup>



The few Australian publications on COVID-19 in children have reported its often mild nature, but have described only limited numbers of children (36 to 384 per article) infected during 2020 with the original SARS-

CoV-2 strain or one of its early variants.<sup>3–6</sup> In this issue of the *MJA*, Williams and colleagues provide welcome information about infections with the Delta SARS-CoV-2 variant during June–October 2021 in 17474 New South Wales children under 16 years of age, including 11985 managed by the Sydney Children's Hospital Network virtual care team.<sup>7</sup> In a sample including all 165 children admitted to hospital for medical reasons (1.3% of confirmed infections) and a random selection of those who received virtual team care, 110 of 509 children (22%) were asymptomatic, and the others had mild symptoms. Only fifteen NSW children with confirmed infections (0.09%) required intensive care, including seven with multisystem inflammatory syndrome in children (MIS-C). The sole COVID-19-associated death was the result of pneumococcal meningitis. The likelihood of medical admission was greater for infected children under six months of age or 12–15 years old, and for children with other medical conditions, findings consistent with other Australian and overseas studies.<sup>3–6,8</sup>

A total of 294 children (2.4% of infections, and 64% of all hospital admissions) were hospitalised for social reasons; their median length of stay (five days) was longer than for medical admissions (two days). In 69% of these cases, the child had a parent or carer who had COVID-19, but others were unaccompanied minors (12%) or children with special needs whose usual out-of-home care was unavailable because of their infection (14%).



Williams and colleagues may have overestimated the need for hospitalisation, as some children with other medical conditions may have been admitted for observation rather than treatment. On the other hand, the number of SARS-CoV-2 infections was possibly underestimated because not all children with mild symptoms will have been tested, laboratory tests are imperfect, and many infections are asymptomatic. For example, seroprevalence studies indicated that 75% of United States children had been infected with SARS-CoV-2 by February 2022.<sup>9</sup> Prospective longitudinal community-based studies with weekly respiratory sample collections and symptom questionnaires also provide valuable information. In the Coronavirus Household Evaluation and Respiratory Testing (C-HEART) cohort study, which followed 1236 participants (including 652 children) during September 2020–August 2021, infection incidence was similar for children and adults (range, 4.4–6.3 per 1000 person-weeks); however, infections were asymptomatic for about 50% of unvaccinated children (0–17 years) but only for 12% of adults.<sup>10</sup>

The reasons for intensive care admission (apart from MIS-C) and initiating treatment for COVID-19 were not discussed by Williams and her colleagues. Public health measures, including lockdowns, may explain the low numbers of other pathogens detected, and co-infections with SARS-CoV-2 and other viruses can be expected to rise as restrictions ease.

The social disruption caused by the pandemic has harmed children, but it is difficult to draw firm conclusions about its direct and indirect impact on their health and wellbeing. A meta-analysis of 29 studies (80879 participants in twelve countries; 74% in China) found that 25% of children had clinically significant symptoms of anxiety, and 21% of depression during the pandemic.<sup>11</sup> Pooled estimates were higher in studies conducted later in the pandemic, and were twice as high as pre-pandemic estimates. The associations between school closures and mental health symptoms have not been differentiated from those of other lockdown measures or the impact of COVID-19 on families. In Australia, use of online mental health services increased 50%

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during the pandemic, and intensive care admissions following deliberate self-harm rose among children aged 12–17 years.<sup>12</sup>

The impact of the pandemic on children's health also complicates studies of "long COVID", as the frequencies of reported physical and psychological symptoms are similar for children without evidence of infection and those recovering from the illness.<sup>13</sup>

The impact of the pandemic on the education and mental health of children should be further investigated so that public health responses to new SARS-CoV-2 variants can consider potential harms to their broader health and wellbeing. Public health measures in schools, including improving ventilation and installing air purifiers, could keep them open and avert the negative effects that school closures have upon children and their families.

Meanwhile, the increasingly common combination of past SARS-CoV-2 infection and recent vaccination (hybrid immunity) confers the greatest protection against a new infection, although immunity against recent Omicron sub-lineage viruses is short-lived.<sup>14</sup> The next generation of vaccines should provide broader epitope coverage and be better aligned with circulating variants to ensure more sustained and better protection. Until then, relatively simple public health measures (eg, mask wearing) and vaccine boosters will be essential. These measures also apply to children, who can experience severe disease and transmit SARS-CoV-2 to household members at greater risk, in addition to being affected by school closures and when their carers fall ill.<sup>15</sup> Finally, to help place the impact of COVID-19 in perspective and inform future pandemic planning, age-stratified hospitalisations and deaths data for other respiratory infections should be collected using the same methodology.

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