close-knit family structures in a country where adolescents tend to have frequent contact with their grandparents and often travel abroad for school.

Data show that children, and particularly adolescents, can play a significant part in coronavirus transmission, says Catherine Bennett, an epidemiologist at Deakin University in Melbourne, Australia. And concerns about transmission by children and adolescents are growing as new coronavirus variants emerge. It's possible that more-transmissible variants will develop a way to push through whatever it is in a young person's immune response that makes them more resistant to infection, says Bennett, making it all the more important that they are vaccinated.

Hopes of achieving herd immunity quickly through immunization have waned, so countries need to do the best that they can to keep transmission low, she adds: "You only need one poorly vaccinated population to generate global variants."

Is vaccinating children fair?

Chile, another country with a high COVID-19 vaccination rate, is also rolling out vaccines to those aged 12 and older.

But Miguel O'Ryan, a former member of two advisory committees to the government there who has pushed for aggressive vaccination campaigns, now finds himself wondering whether it's time to slow down. "Other countries, even our neighbours, are struggling very hard to get enough vaccines for their high-risk groups," says O'Ryan, who is a paediatric infectious-disease specialist at the University of Chile in Santiago.

In May, World Health Organization chief Tedros Adhanom Ghebreyesus said that wealthier countries that are vaccinating children are doing so at the expense of health-care workers and high-risk groups in other countries. But advocates for vaccinating children and young adults argue that it need not be a case of one or the other. Sam-Agudu points out that some wealthy countries bought more than enough doses to fully vaccinate their populations, and that sending vaccines abroad "should not preclude vaccinating children in higher-income countries".

By Heidi Ledford

News explainer

DEATHS FROM COVID 'INCREDIBLY RARE' AMONG CHILDREN

Studies find that overall risk of death or severe disease from COVID-19 is very low in kids.

By Heidi Ledford

A comprehensive analysis of hospital admissions and reported deaths across England suggests that COVID-19 carries a lower risk of dying or requiring intensive care among children and young people than was previously thought.

COVID-19 caused 25 deaths in that age group between March 2020 and February 2021, researchers reported in a series of preprints published on medRxiv[1–3]. About half of those deaths were in individuals with an underlying disability with high health-care needs, such as tube feeding or assistance with breathing.

The studies did not evaluate rates of less severe illness or debilitating 'long COVID' symptoms that can linger months after the acute phase of the infection has past. "The low rate of severe acute disease is important news, but this does not have to mean that COVID does not matter to children," says paediatrician Danilo Buonsenso at the Gemelli University Hospital in Rome. "Please, let's keep attention – as much as is feasible – on immunization."

In one of the preprints, the researchers trawled for published accounts of COVID-19 among children and young people, and ultimately analysed data from 57 studies and 19 countries[3]. They then picked apart risk factors for severe disease and death from the data.

Study findings

Some conditions – including obesity and cardiac or neurological conditions – were associated with a higher risk of death or intensive-care treatment, the researchers found. But the absolute increase in risk was very small, study author Rachel Harwood, a paediatric surgical registrar at Alder Hey Children's Hospital in Liverpool, UK, said at a media briefing.

For the other two preprints, the researchers focused on England, where they found that of 6,338 hospital admissions for COVID-19, 259 children and young people required treatment in intensive-care units.

Black children were more likely than their white counterparts to require intensive care, both for COVID-19 and for paediatric multisystem inflammatory syndrome, a rare syndrome associated with coronavirus infection. But overall, the need for intensive care was "incredibly rare" among these patients, says study author Joseph Ward at the University College London Great Ormond Street Institute of Child Health.

DAN KITWOOD/GETTY

A child performs a lateral-flow COVID test.

Of 3,105 deaths from all causes among the 12 million or so people under 18 in England between March 2020 and February 2021, 25 were attributable to COVID-19 – a rate of about 2 for every million people in this age range. None had asthma or type-1 diabetes, the authors note, and about half had conditions that put them at a higher risk than healthy children of dying from any cause.

In some cases, efforts to shield children thought to be vulnerable to severe complications from COVID-19 might have "caused more stress and anxiety for families than benefit", says Elizabeth Whittaker, an infectious-disease specialist at Imperial College London.

The work does not tackle the spectre of long COVID, but other studies suggest that it does occur in children – including in those who had mild initial symptoms or were asymptomatic – but less frequently than in adults.

Buonsenso still hopes that schools will embrace measures such as masks and improved ventilation, and that parents will focus on immunization – for either their children, where possible, or themselves.

1. Ward, J. L. *et al*. Preprint at medRxiv https://doi.org/10.1101/2021.07.01.21259785 (2021).
2. Smith, C. *et al*. Preprint at medRxiv https://doi.org/10.1101/2021.07.07.21259779 (2021).
3. Harwood, R. *et al*. Preprint at medRxiv https://doi.org/10.1101/2021.06.30.21259763 (2021).