

CDC releases first US data on COVID-19 cases in children

Enlarge / NEW YORK, NEW YORK – MARCH 24: A child with a pacifier looks out a window as the coronavirus continues to spread across the United States on March 24, 2020 in New York City. The World Health Organization declared COVID-19 a global pandemic on March 11th. (Photo by Cindy Ord/Getty Images)

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In all of the grim statistics of COVID-19's devastation, one seemingly bright spot has been that children seem to be *largely* unaffected. They consistently make up small percentages of confirmed cases and nearly all have a mild form of the disease. But as more data accumulates, we're getting a clearer picture of what COVID-19 looks like in children—and when its youngest victims are not spared from the worst.

On Monday, April 6, public health researchers at the US Centers for Disease Control and Prevention released the first data set on pediatric COVID-19 cases in the United States. The report looked at more than 2,500 cases in infants, children, and adolescents under age 18, collectively referred to as "children" in the study. The data was published in the CDC's Morbidity and Mortality Weekly Report.

The data largely echoes that of pediatric cases seen in China and elsewhere. Children made up a sliver of COVID-19 cases overall and their symptoms appeared largely mild.

The CDC researchers found the 2,572 pediatric cases among 149,082 cases in total. That is, pediatric cases made up just 1.7 percent of the cases examined. This is a significant underrepresentation of that age group in the US. Children under 18 make up 22 percent of the country's population.

Of the 2,752 pediatric cases, nearly 60 percent were in children aged 10 to 17. Youngsters under one year, those aged one to four, and five to nine, made up 15 percent, 11 percent, and 15 percent of the cases, respectively. Among 2,490 cases with sex information, 57 percent were male.

The data also suggested that the cases were largely mild, though they only had data on symptoms from 291 of the 2,572 pediatric cases. Of those 291 cases, 78 (27 percent) did not have fever, cough, or shortness of breath (the most common symptoms in adults). And of those 78 cases, 53 didn't report any symptoms. That said, researchers could not dub these cases asymptomatic because it was unclear if all of their potential symptoms had been recorded. One case was reported as asymptomatic.

Patchy data

The researchers had data on hospitalization status for just 745 cases. Of those, 147 were hospitalized. That's nearly 20 percent of the cases that had data on hospitalization, but only about 6 percent of the overall 2, 572 pediatric cases. With the limited data, the CDC researchers reported the hospitalization rate in children as that range (6 to 20 percent). Of those hospitalized cases, 15 were admitted to intensive care, giving a range of 0.58 to 2 percent.

These figures are significantly lower than what was seen in the adult cases gathered in the study, which had hospitalization rates ranging from 10 to 30 percent, and ICU admission from about 1 to 4.5 percent.

The children who fared the worst were the youngest and those with underlying health conditions—as has been seen in other pediatric and adult data.

Though researchers only had hospitalization status data on 95 infants under one year old, 59 of those infants were hospitalized. That's 62 percent of infants with known hospitalization data and 15 percent of all the infants under age one in the analysis. That's a much wider range than the hospitalization rate of one to 17-year-olds, which spanned 4.1 to 14 percent.

- Pediatric COVID-19 cases in the US.
- Symptoms in pediatric cases.

Additionally, the researchers had information about underlying health conditions for 345 of the pediatric cases. Eighty of the cases (23 percent with data) had at least one underlying health condition, with chronic lung conditions (including asthma) being the most common, followed by cardiovascular disease and immunosuppression.

There were 295 cases with both hospitalization status *and* information about underlying health. Of those, there were 37 hospitalized (including six that were admitted to an ICU) and 28 of them (77 percent) had an underlying health condition—and that included all six in the ICU.

The data is in line with that from 2,143 pediatric cases in China, which was first published last month in the journal *Pediatrics*. The researchers overall found that most of the cases in children were mild, with about 5 percent of cases being considered severe and under 1 percent considered critical.

Similarities

But again, the youngest appeared the most at risk of severe disease. In the 2,143 pediatric cases, infants under one and those one to five accounted for 60 percent of severe cases. And those youngest age groups accounted for nearly 70 percent of critical cases, with under one-year-olds making up 54 percent of all pediatric critical cases.

Among the 379 infants under one year, 33 had severe disease (about 9 percent) and seven were critical (just under 2 percent). Of 493 children aged one to five, 34 of them (about 7 percent) had severe cases and two (0.4 percent) had critical cases. The study reported one death in a 14-year-old boy.

Hospitalization rates in pediatric COVID-19 cases, grouped by age.

The CDC researchers in their data reported three deaths in children but declined to provide Ars with data on their ages, citing privacy concerns with such few cases. The researchers also note in the study that investigations are ongoing to determine if COVID-19 was the cause of death or if underlying health issues played roles.

Both studies have significant limitations. The new CDC study on US pediatric cases is severely hampered by holes in the data, including case information on hospitalization status, underlying health conditions, and some outcomes. Also, 1,827 of the 2,572 cases were from the New York-New Jersey region, which has been the epicenter of the country's outbreak. It is

unclear if case demographic trends, testing criteria, case severity, and outcomes will match other areas with different populations and, perhaps, less burdened healthcare systems.

In the Chinese data, researchers also lacked data, most notably information about underlying health conditions. They also included both laboratory-confirmed cases (34 percent) and suspected cases (66 percent) based on clinical symptoms. The latter leaves open the possibility that some of the cases were not from COVID-19 but some other respiratory infection. Notably, more than seventy percent of the cases in children under one and aged one to five were suspected, not confirmed cases. This age group is plagued by many serious respiratory infections, including RSV.

Still, despite all the limitations, it is clear that children are not universally spared from the worst outcomes of COVID-19. Suspected cases in children should be monitored closely, particularly in infants and children with underlying conditions, the CDC researchers conclude. And because we don't know what role children may play in transmission of COVID-19, they—like everyone—should adhere to strict social distancing and other hygienic measures during this crisis.

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