

## ABSTRACTS FROM CURRENT LITERATURE

### **Severe Coronavirus Disease-2019 in Children and Young Adults in the Washington, DC, Severe Coronavirus Disease-2019 in Children and Young Adults in the Washington, DC, Metropolitan**

Region Roberta L. DeBiasi, Xiaoyan Song, Meghan Delaney, Michael Bell, Karen Smith, Jay Pershad, Emily Ansusinha, Andrea Hahn, Rana Hamdy, Nada Harik, Benjamin Hanisch, Barbara Jantusch, Adeline Koay, Robin Steinhorn, Kurt Newman, David Wessel

J Pediatr. 2020;223:199-203.

Despite worldwide spread of severe acute respiratory syndrome coronavirus-2, few publications have reported the potential for severe disease in the pediatric population. We report 177 infected children and young adults, including 44 hospitalized and 9 critically ill patients, with a comparison of patient characteristics between infected hospitalized and nonhospitalized cohorts, as well as critically ill and noncritically ill cohorts. Children 15 years of age were over-represented among hospitalized patients ( $p=.07$ ). Adolescents and young adults were over-represented among the critically ill cohort ( $p=.02$ ).

### **Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China**

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**Objectives:** To identify the epidemiological characteristics and transmission patterns of pediatric patients with COVID-19 in China.

**Methods:** Nationwide case series of 2143 pediatric patients with COVID-19 reported to the Chinese Center for Disease Control and Prevention from January 16 to February 8, 2020 were included. The epidemic curves were constructed by key dates of disease onset and case diagnosis. Onset-to-diagnosis curves were constructed by fitting a log-normal distribution to data on both onset and diagnosis dates.

**Results:** There were 731 (34.1%) laboratory-confirmed cases and 1412 (65.9%) suspected cases. The median age of all patients was 7 years (interquartile range: 2-13), and 1213 cases (56.6%) were boys. Over 90% of all patients were asymptomatic, mild, or moderate cases. The median time from illness onset to diagnoses was 2 days (range: 0 to 42 days). There was a rapid increase of disease at the early stage of the epidemic and then there was a gradual and steady decrease. Disease rapidly spread from Hubei Province to surrounding provinces over time. More children were infected in Hubei province than any other province.

**Conclusions:** Children at all ages appeared susceptible to COVID-19, and there was no significant gender difference. Although clinical manifestations of children's COVID-19 cases were generally less severe than those of adults' patients, young children, particularly infants, were vulnerable to infection. The distribution of children's COVID-19 cases varied with time and space, and most of the cases concentrated in Hubei province and surrounding areas. Furthermore, this study provides strong evidence for human-to-human transmission.

### **The role of children in transmission of SARS-CoV-2: A rapid review**

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J Glob Health. 2020 Jun; 10(1): 011101.

**Background:** Understanding the role of children in the transmission of SARS-CoV-2 is urgently required given its policy implications in relation to the reopening of schools and intergenerational contacts.

**Methods:** We conducted a rapid review of studies that investigated the role of children in the transmission of SARS-CoV-2. We synthesized evidence for four categories: 1) studies reporting documented cases of SARS-CoV-2 transmission by infected children; 2) studies presenting indirect

evidence on the potential of SARS-CoV-2 transmission by (both symptomatic and asymptomatic) children; 3) studies reporting cluster outbreaks of COVID-19 in schools; 4) studies estimating the proportions of children infected by SARS-CoV-2, and reported results narratively.

**Results:** A total of 16 unique studies were included for narrative synthesis. There is limited evidence detailing transmission of SARS-CoV-2 from infected children. We found two studies that reported a 3-month-old whose parents developed symptomatic COVID-19 seven days after caring for the infant and two children who may have contracted COVID-19 from the initial cases at a school in New South Wales. In addition, we identified six studies presenting indirect evidence on the potential for SARS-CoV-2 transmission by children, three of which found prolonged virus shedding in stools. There is little data on the transmission of SARS-CoV-2 in schools. We identified only two studies reporting outbreaks of COVID-19 in school settings and one case report of a child attending classes but not infecting any other pupils or staff. Lastly, we identified six studies estimating the proportion of children infected; data from population-based studies in Iceland, Italy, South Korea, Netherlands, California and a hospital-based study in the UK suggest children may be less likely to be infected.

**Conclusions:** Preliminary results from population-based and school-based studies suggest that children may be less frequently infected or infect others, however current evidence is limited. Prolonged faecal shedding observed in studies highlights the potentially increased risk of faeco-oral transmission in children. Further seroprevalence studies (powered adequately for the paediatric population) are urgently required to establish whether children are in fact less likely to be infected compared to adults.

## COVID-19 in Children: A Narrative Review

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Open Access Macedonian Journal of Medical Sciences. 2020 May 20; 8(T1):23-31.

**Background:** In December 2019, coronavirus (CoV) disease 2019 (COVID-19) was detected in Wuhan, China, which is known as severe acute respiratory syndrome CoV 2 (Severe acute respiratory syndrome [SARS]-CoV-2).

**Aim:** This study attempted a narrative review of the researches about COVID-19 in children.

**Methods:** We searched all articles between 2000 and April 2020 in PubMed, Scopus, and ScienceDirect related to COVID-19 in children, using the following terms: "COVID-19," "coronavirus," "SARS-CoV-2" in combination with "pediatrics," or "children."

**Results:** The most common method of transmitting the disease to children was through close contact with family members through respiratory droplets. Coinfection is common in pediatric with COVID-19 infection. One of the most important transmission routes is oral feces. The severity of the disease was mild or asymptomatic in most children. The most common clinical symptoms were fever and cough, and gastrointestinal symptoms were more common in children than in adults. Infants and preschoolers had more severe clinical symptoms than older children. The most common radiographic findings from the lungs were bilateral ground-glass opacity. Increased procalcitonin and lactate dehydrogenase should be considered in children. The use of intravenous immunoglobulin, lopinavir/ritonavir, and oseltamivir, along with oxygen therapy, had the greatest effect on improving children's conditions.

**Conclusion:** The most important way to prevent this disease in children is to follow the health tips of family members. Although the number of children with the disease is low, children are vulnerable to infection. Antiviral medications along with the use of muscle relaxants and oxygen therapy have a great impact on children's condition.