

## SYNOPSIS

05/13/2020

## Review of “Characteristics and outcomes of children with coronavirus disease 2019 (COVID-19) infection admitted to US and Canadian pediatric intensive care units”

**Article citation:** Shekerdemian LS, Mahmood NR, Wolfe KK, Riggs BJ, Ross CE, McKiernan CA, et al. Characteristics and outcomes of children with coronavirus disease 2019 (COVID-19) infection admitted to US and Canadian pediatric intensive care units. *JAMA Pediatr.* 2020 May 11 [Epub ahead of print]. Available from: <https://doi.org/10.1001/jamapediatrics.2020.1948>

### One-Minute Summary

- This study characterizes the **demographic characteristics and clinical course of patients (N=48) with Coronavirus Disease 2019 (COVID-19) admitted to pediatric intensive care units (PICUs) in North America** from March 14 to April 3, 2020.
- The median age of patients (n=48) was 13 years (interquartile range [IQR]: 4.2-16.6), and 25 (52%) were male. Thirty five of 48 patients (73%) presented with respiratory symptoms. The most common comorbidity was long-term history of requiring support due to developmental delays or genetic anomalies, found in 19/48 (40%) of patients, followed by patients with immune suppression, found in 11/48 (23%) of patients.
- **Patient clinical characteristics (n=48):**
  - **Severity:** 16/48 (33%) were severe, 17/48 (35%) were critical.
  - **Organ system failure:** single organ (usually respiratory) in 30/48 (63%) patients, two organ system failure in 7/48 (15%), three or more organ systems in 4/48 (8%) patients.
  - **Respiratory support:** 39/48 (81%) of patients required respiratory support, 18/48 (38%) of patients required intubation
  - **Median length of stay: PICU:** 5 days (IQR: 3-9); **hospital,** 7 days (IQR: 4-13)
  - **Outcome (by Apr. 10):** 31/48 (65%) discharged, 9/48 (19%) hospitalized in severe/critical condition, 6/48 (13%) hospitalized in mild/moderate condition, 2/48 (4%) died.
- The case fatality rate (CFR) in these pediatric patients was 4.2%, which is lower than the CFR reported for adult patients in intensive care units (50-62%) ([Bhatraju et al.](#), [Yang et al.](#)).
- This cross-sectional study confirms earlier reports that COVID-19 can cause severe illness in children, but severity is considerably less than in adults. Similar to adult COVID-19 patients, severe disease in children is associated with pre-existing comorbidities.

## Additional Information

- The authors performed a retrospective review of medical records to identify COVID-19 patients (<1 to 21 years old) admitted to North American PICUs (n=46; 40 in USA, 6 in Canada) from Mar. 14 to Apr. 3 (final follow-up on Apr. 10). Thirty of the pediatric hospitals had not admitted any critically ill patients with confirmed COVID-19 infection, including all of the 6 participating Canadian hospitals, and two hospitals were not able to receive institutional review board approval in time. All patients were from 14 PICUs located in the USA.
- The authors acknowledge that the short follow-up period for more recent cases, means that some patients might have had more severe outcomes after Apr. 10.

## PHO Reviewer's Comments

- None.

## Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Review of “Characteristics and outcomes of children with coronavirus disease 2019 (COVID-19) infection admitted to US and Canadian pediatric intensive care units”. Toronto, ON: Queen’s Printer for Ontario; 2020.

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