

Placement of Pediatric Graduate Medical Residents in COVID-19 units and their Seroconversion rate

Frontiers in Pediatrics. 2021;9:221.

Background: SARS-CoV-2 and its associated disease COVID-19 has presented as a special challenge in pediatric graduate medical residents' training programs. Dual challenge was that in one hand to provide appropriate care for patients and at another end protecting trainees who are equally at high risk like other healthcare workers.

Objective: To assess the impact of hospital COVID-19 patient placement on pediatric graduate medical residents by comparing rates of SARS-CoV-2 seroconversion rates of residents who worked on designated COVID-19 teams and those who did not.

Setting: Riley Children's Hospital (247 beds)(Indianapolis, IN).

Design : Cross-sectional

Study Period: (February 1, 2020, and May 22, 2020).

Methods: Out of total 157 contacted graduate medical residents, 104 were eligible from that 44 elected to participate. Forty-four pediatric and medicine–pediatric residents were tested for SARS-CoV-2 immunoglobulin M (IgM) and IgG seroconversion by ELISA (Abnova catalog no. KA58262 months after the first case in Indiana). **There were two groups : those residents who worked on designated COVID-19 teams, and those who did not.** Groups were compared using χ^2 or Fisher exact test for categorical variables, and continuous variables were compared using Student testing.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



Pediatric Residents – Duties in COVID-19 units and their seroconversion rate

Results :

- Total 12 residents tested positive for SARS-CoV-2 antibodies, 8 of 31 (26%) in the exposed group and 4 of 13 (31%) in non-exposed group.
- Eleven of 44 residents (25%) tested positive for SARS-CoV-2 IgG antibodies, and 5 of 44 (11%) tested positive for SARS-CoV-2 IgM antibodies.
- Of residents on the COVID-19 service, 7 of 31 (23%) tested positive for IgG antibodies, and 4 of 31 (13%) tested positive for IgM antibodies. Of residents on the non-COVID-19 floors, 4 of 13 (31%) tested positive for IgG antibodies, and 1 of 13 (8%) had IgM antibodies. Only one resident who seroconverted for IgM had not yet also seroconverted for IgG.
- There were no differences detected in overall seroconversion ($p = 0.70$), IgG seroconversion rate ($p = 0.71$), or IgM seroconversion rate ($p > 0.99$) between the residents who cared for suspected and confirmed COVID-19 patients and those who did not.
- Of the 12 residents with SARS-CoV-2 seroconversion, 7 of 12 (58%) reported no symptoms, and only one tested positive for SARS-CoV-2 by PCR. The median time between reported symptoms and antibody testing was more than 2 months (77.5 days).

Conclusions: There was no difference in SARS-CoV-2 seroconversion between different exposure groups.

Key message: This study indicates indirectly the efficacy of personal protective equipment.

EXPERT COMMENT

"PPE may be effective at limiting transmission within the pediatric hospital setting. However, the study is lacking longitudinal data and also there is lag between infection and antibody positivity. So Population-based research on the role of children in transmitting the SARS-CoV-2 virus is needed to allow for a more evidence-based approach toward managing the COVID-19 pandemic."



Dr. Krutika Rahul Tandon
MD(Ped)
Fellowship in PICU,DAA
Prof & Head, Department Pediatrics,PSMC,Karamsad(GUJ)

With warm regards,

**DR MANINDER S
DHALIWAL**

DR. PIYUSH GUPTA
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Reference

Crisci T, Arregui S, Canas JJ, Hooks J, Chan M, Powers C, Hains DS, Schwaderer AL, Starr M. Placement on COVID-19 units does not increase seroconversion rate of Pediatric Graduate Medical Residents. Frontiers in Pediatrics. 2021;9:221.