

Study tracks COVID-19 spread in pediatric dialysis unit

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David Hains, MD, IU School of Medicine researcher Credit: IU School of Medicine

As COVID-19 continues its sweep around the globe, dialysis units have continued to be hotspots for the virus' spread. Researchers at Indiana University School of Medicine hope to combat that threat, through a

novel study published May 14, 2020 in *JAMA*. The study, conducted by members of the Pediatric Nephrology Dialysis Unit at Riley Hospital for Children at IU Health, used antibody testing on patients, doctors, nurses and staff within the unit to track symptomatic and asymptomatic spread in a confined space, such as a dialysis unit.

"There are unique exposure challenges in dialysis units that limit social distancing efforts, including open bay formats and rotating nursing assignments," said David Hains, MD, lead investigator on the study. "Dialysis units find threat among many [infectious diseases](#) and COVID-19 is dangerous to patients receiving dialysis."

Studies from Wuhan, China show the spread of COVID-19 among dialysis units, but this study is the first of its kind in a pediatric setting, as well as being one that used antibody status as a determining factor.

"Our study also highlights the importance of distancing and PPE," said Hains, division chief of pediatric nephrology in the Department of Pediatrics. "We saw a dramatic decrease in 'new' cases as we implemented more aggressive measures to protect our patients and staff. More studies to examine this are underway by a number of people here on campus."

The group's study tracked 13 patients, 11 nurses, four staff and 10 physicians. By day 21 of the study, 11 [health care workers](#) and three patients had positive COVID-19 antibodies. No participants developed symptoms between days seven and 21.

"This study found a high occurrence of COVID-19 antibodies in individuals interacting in a pediatric [dialysis](#) unit. This high rate of occurrence suggests that more health care workers may be antibody-positive than would otherwise be expected," Hains said. "Testing for the presence of these antibodies can allow for strategically staffing the care

of patients who have COVID-19, or who are suspected to be positive, with nurses and physicians who also have tested positive for these [antibodies](#)."

Hains said that a nurse who was participating in the study did not exhibit any of the symptoms of the virus and had a positive antibody test. She subsequently had a COVID-19 PCR test, which came back positive. Because of that test, Hains said, his group was able to react quickly to the situation.

"When she had a COVID-19 test, she was positive. That allowed us to rapidly quarantine her, which may have helped prevent the spread in our unit," Hains said. "I can see this being utilized in other healthcare settings or arenas where distancing is not easily done."

As social distancing regulations begin to loosen across the state, Hains and his team, including Department of Pediatrics faculty Andrew Schwaderer, MD, Aaron Carroll, MD, Amy Wilson, MD, and Michelle Starr, MD, plan to continue this study to see the impact these changes have on their numbers. Hains is working with the Richard L. Roudebush Indianapolis VA Medical Center to replicate their study in an adult unit.

More information: Asymptomatic Seroconversion of Immunoglobulins to SARS-CoV-2 in a Pediatric Dialysis Unit, *JAMA* (2020). [DOI: 10.1001/jama.2020.8438](https://doi.org/10.1001/jama.2020.8438)

Provided by Indiana University School of Medicine

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