

# Universal preoperative COVID-19 screening improves pediatric patient safety

4 June 2020



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Universally screening pediatric patients for COVID-19 before they undergo surgical procedures has allowed hospitals to improve safety by identifying all patients who test positive for the virus, half of whom have no symptoms, according to new research led by Children's Hospital of Philadelphia (CHOP). The study, which analyzed universal screening procedures at CHOP and two other major children's hospitals, found that screening patients for COVID-19 allowed hospitals to ensure patients and physicians were not exposed to the virus.

The findings were published today in *JAMA Surgery*.

"CHOP's commitment to [screening](#) every patient preoperatively has significantly improved [patient safety](#)," said lead author Apurva Shah, MD, MBA, an orthopaedic surgeon in CHOP's Division of Orthopaedics. "Our study shows that many [pediatric patients](#) who have COVID-19 are

asymptomatic, even though the overall number of positive cases is small, so parents can feel reassured that their children and other children undergoing procedures have been screened for the virus."

The research team, which consisted of physicians from CHOP, Seattle Children's Hospital, and Texas Children's Hospital, gathered COVID-19 screening data on preoperative pediatric patients for one month, from late March to late April 2020. CHOP had begun screening all preoperative patients for COVID-19 on March 26, 2020, as part of its [hospital](#)-wide safety procedures. Each of the three hospitals used an in-house, lab-developed reverse transcriptase polymerase chain reaction (RT-PCR) assay to detect COVID-19 in patients with scheduled surgical procedures.

Of the 1,295 patients included in the study, the overall incidence of COVID-19 was 0.93%. However, the researchers found significant variation across hospitals, ranging from 0.22% to 2.65%. Even more striking, at CHOP, 55.56% of positive patients were from a single township, indicating that the incidence in children may vary depending on COVID-19 infection rates in the patients' communities.

Among those pediatric patients who tested positive for COVID-19, half had no symptoms. Of those who did have symptoms, the most common were fever and a runny nose. Nevertheless, the researchers noted symptoms were not useful in differentiating those who tested positive for COVID-19 and those who tested negative.

Given that the study covered a [time period](#) when all three hospitals had cancelled elective surgeries, the data reflect pediatric patients who required time-sensitive surgery and thus may not represent the incidence in children undergoing elective surgery. However, the authors say the findings show the value of universal screening in protecting both

patients and physicians from COVID-19 exposure in all types of surgery at times when the SARS-CoV-2 virus is actively circulating in a community.

"If a patient tests positive for COVID-19, and the procedure doesn't need to happen immediately, providers can reschedule surgery for a time when the patient has recovered," Shah said. "But in some cases, surgery cannot wait, and in that situation, knowing a patient is positive for COVID-19 allows staff to protect themselves with appropriate personal protective equipment and prevent that patient from coming into contact with other patients and families."

"As we start to relax social distancing measures, and children return to their 'new normal' with exposure to the community, universal testing for children undergoing [surgery](#) will be even more important," said first author Elaina E. Lin, MD, an anesthesiologist in CHOP's Department of Anesthesiology and Critical Care Medicine. "As an anesthesiologist that performs many procedures with the highest risk of respiratory virus transmission, I appreciate patients and families partnering with us to keep everyone safe."

**More information:** "Incidence of COVID-19 in Pediatric Surgical Patients Among 3 US Children's Hospitals," *JAMA Surgery* (2020). [DOI: 10.1001/jamasurg.2020.2588](#)

Provided by Children's Hospital of Philadelphia

APA citation: Universal preoperative COVID-19 screening improves pediatric patient safety (2020, June 4) retrieved 4 September 2022 from <https://medicalxpress.com/news/2020-06-universal-preoperative-covid-screening-pediatric.html>

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