

# Telemedicine Can Prevent Unnecessary Transfers and Cut Health Care Costs for Pediatric Patients with Orthopedic Injuries

*Nemours Children's Health study indicates virtual consultations can guide patients to most appropriate treatment*

**WILMINGTON, Del.** (November 18, 2024) — Pediatric patients with orthopedic injuries like sprains or fractures often face frustrating, time-consuming and costly transfers from one emergency department to another. A recent study by Alfred Atanda, MD, Orthopedic Surgeon at Nemours Children's Hospital, Delaware and Assistant Professor of Orthopedic Surgery and Pediatrics at Sidney Kimmel Medical College of Thomas Jefferson University, suggests that more than a third of these transfers could be avoided with the use of telemedicine.

Telemedicine consultations could help patients get the most appropriate treatment faster, with significant cost savings to families and the healthcare system, Atanda wrote in a [study](#) published in the *Journal of the American Academy of Orthopaedic Surgeons*.

"When a child has a musculoskeletal injury, parents often first take them to an urgent care center or the local emergency department," Atanda said. "However, there is rarely a pediatric-trained emergency physician, let alone a pediatric orthopedic surgeon, in those settings."

As a result, many of these patients are taken by an ambulance to a pediatric trauma center. These transfers are costly, can exacerbate pain and discomfort, and may result in long delays in receiving care.

Using data from 350 pediatric orthopedic trauma patients who had been transferred to two pediatric hospitals from local facilities, Atanda and colleagues developed models to assess how the patients could have been treated differently if telemedicine consultations between an urgent care/emergency provider and pediatric orthopedic specialist had taken place. They also assessed the direct costs of care for each patient based on medical records.

The study showed that 37% of transfers could have been avoided by using telemedicine consultations.

Furthermore, the study showed that 30% of the patients who were transferred to a pediatric emergency department received no additional specialized care there. Patients spent an average of nine hours between being evaluated at two separate hospitals and being transferred by ambulance.

Atanda explained that in a real-world setting, a telemedicine consultation to a pediatric orthopedic specialist from the first care site could have resulted in some patients being sent home to rest, with a recommendation to see a specialist the next day. The telemedicine consultation could help reassure families and answer their questions. Moreover, it could help care teams and families determine whether a patient needed to be transported via ambulance, or whether riding in a parent's car was a reasonable choice.

The "transfer-all" model, which assumed all parents were sent to a new facility in an ambulance, had average costs of \$6,610.

The other model encompassed two possibilities: If a telemedicine consultation did result in ambulance transfer and emergency department care, overall costs were \$6,730. However, a telemedicine consultation with no further action cost only \$120. The weighted average of these cases was \$4,858.

"Over time, and on a larger scale, cost savings such as this have the power to change health care," Atanda said.

"In most situations, a consultation between physicians, conducted via telemedicine, will cost less than automatically transferring the patient in an ambulance," he added. "With the rise of telemedicine and the ease of sharing medical images, triaging patients by moving information and knowledge could be more cost-effective than physically moving patients. It's more beneficial, valuable and efficient to assess a patient's needs and direct them to the level of care they need at the time they need it."

Atanda said further research on this topic could help establish guidelines for payment for telemedicine consultations and could quantify the risk of misdiagnosis. Overall, the study adds to previous findings that telemedicine is an effective triage tool for orthopedic patients.

"This research demonstrates how telemedicine can serve as a pathway to providing cost-effective, high-quality care in pediatric orthopedics," Atanda said.

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## **About Nemours Children's Health**

Nemours Children's Health is one of the nation's largest multistate pediatric health systems, which includes two freestanding children's hospitals and a network of more than 70 primary and specialty care practices. Nemours Children's seeks to transform the health of children by adopting a holistic health model that utilizes innovative, safe, and high-quality care, while also addressing children's needs well beyond medicine. In producing the highly acclaimed, award-winning pediatric medicine podcast Well Beyond Medicine, Nemours underscores that commitment by featuring the people, programs and partnerships addressing whole child health. Nemours Children's also powers the world's most-visited website for information on the health of children and teens, Nemours KidsHealth.org.

The Nemours Foundation, established through the legacy and philanthropy of Alfred I. duPont, provides pediatric clinical care, research, education, advocacy, and prevention programs to the children, families and communities it serves. For more information, visit Nemours.org.

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