

Child death rate linked to hospital preparedness for pediatric emergencies

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Critically ill children brought to hospital emergency departments that are ill-prepared to care for pediatric emergencies have more than three times the odds of dying compared to those brought to hospitals well-equipped to care for them, according to an analysis led by University of Pittsburgh and University of California-Los Angeles physician-scientists.

The findings, published today in the journal *Pediatrics*, are the first to provide evidence from multiple states linking the [readiness](#) of hospital emergency departments to care for critically ill or [injured children](#) with outcomes, and could guide a variety of policy responses.

"Pediatric care requires specialized equipment, training and protocols to provide the best care to children. Obtaining that kind of preparedness is costly and time-consuming," said senior author Jeremy Kahn, M.D., M.S., professor in the Department of Critical Care Medicine at Pitt's School of Medicine and the Department of Health Policy and Management at Pitt's Graduate School of Public Health. "Our study suggests that efforts to better prepare hospitals to care for pediatric emergencies save lives."

Kahn and his colleagues obtained data from 426 hospitals in Florida, Iowa, Massachusetts, Nebraska and New York, on 20,483 critically ill patients age 18 or younger who were brought to the hospital emergency department. They cross-referenced the patient outcomes with the "pediatric readiness" of the hospital's emergency department.

Pediatric readiness is indicated by a score assigned following assessment by the National Pediatric Readiness Project, a quality improvement effort of several federal government and non-profit advocacy organizations. Hospitals receive higher scores based on several factors, including whether they have equipment designed for use on children, pediatric-specific protocols for [medical procedures](#) and care, and [educational programming](#) to keep clinicians up-to-date on the latest guidelines in [pediatric care](#). The standardized readiness score ranges from 0 to 100.

The team divided the hospitals into four groups based on their pediatric readiness score, with the lowest quartile's scores ranging from 29.6 to 59.3, and the highest from 88.2 to 99.9. Hospitals in the lowest quartile had a pediatric mortality rate for critically ill children of 11.1%, compared to 3.4% for the highest quartile.

"Our findings indicate that it matters which hospital a critically ill or injured child is brought to in an emergency," said co-author Jennifer Marin, M.D., M.Sc., an emergency physician at UPMC Children's Hospital of Pittsburgh and associate professor of pediatrics and emergency medicine in Pitt's School of Medicine. "A hospital's pediatric readiness should be a factor in determining to which [hospital](#) a critically ill child should be transported."

There likely isn't one perfect solution to the disparity in outcomes, noted lead author Stefanie Ames, M.D., M.S., a pediatrician specializing in critical care medicine at UCLA Mattel Children's Hospital and assistant professor in the Division of Pediatric Critical Care at UCLA David Geffen School of Medicine.

"Should we focus only on improving the pediatric readiness of all hospitals, potentially investing money and resources in hospitals that rarely see children? Or should we do more to direct pediatric

emergencies to hospitals well-equipped to care for them, potentially increasing transport times?" she asked. "Some combination will likely be needed and potential solutions also could incorporate telemedicine and processes to promote quick recognition and transfer of pediatric emergencies to more prepared hospitals."

Provided by University of Pittsburgh

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