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Rory's Regulations increase survival odds for children with sepsis

Evans IVR, et al. *JAMA*. 2018;doi:10.1001/jama.2018.9071.

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A New York state-mandated treatment bundle for pediatric patients with sepsis and septic shock completed within an hour of recognizing the condition was associated with a 40% decrease in the odds of in-hospital mortality, according to recently published study results in *JAMA*.

“New York state issued a statewide mandate in 2013 for all hospitals to develop protocols for sepsis recognition and treatment,” **Idris V.R. Evans, MD, MSc**, an assistant professor in the department of critical care medicine at UMPC Children’s Hospital of Pittsburgh, told *Infectious Diseases in Children*. “This mandate was called was called ‘Rory’s Regulations’ in honor of Rory Staunton, a boy who died from sepsis in 2012.”

According to researchers, the bundle includes the collection of blood culture before treatment, the administration of broad-spectrum antibiotics and the completion of a 20-mL/kg fluid bolus.

In a statewide cohort study conducted from April 1, 2014, to Dec. 31, 2016, Evans and colleagues examined how the 1-hour treatment bundle impacted mortality among pediatric patients with sepsis or septic shock in EDs, inpatient units and ICUs. The study included 1,179 patients aged 18 years and younger (mean age, 7.2 years; 54.2% male) at 54 New York hospitals. According to the researchers, 44.5% of patients were previously healthy, 68.8% were diagnosed as having shock and 11.8% died. The sepsis bundle was completed within an hour for 24.9% of patients.



Results showed that within an hour, 67.7% of patients received broad-spectrum antibiotics, 62.8% of patients had blood cultures drawn and 46.5% of patients were administered a 20-mL/kg IV fluid bolus.

Providing children a treatment bundle for sepsis and septic shock decreased in-hospital mortality by 40% in New York state, according to researchers.

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The completion of the entire sepsis treatment bundle within an hour was associated lower risk-adjusted odds of in-hospital mortality (OR = 0.59; 95% CI, 0.38-0.93; $P = .02$; predicted risk difference [RD] = 4%; 95% CI, 0.9%-7%), the researchers said.

The researchers noted that there was not a significant association of lower risk-adjusted mortality with the completion of each individual element of the sepsis bundle within the hour, including blood culture (OR = 0.73; 95% CI, 0.5-1.06; RD = 2.6%; 95% CI, -0.5% to 5.7%), antibiotics (OR = 0.78; 95% CI, 0.55-1.12; RD = 2.1%; 95% CI, -1.1% to 5.2%) and fluid bolus (OR = 0.88; 95% CI, 0.56-1.37; RD = 1.1%; 95% CI, -2.6% to 4.8%).

“Broad-spectrum antibiotics were a component of a three-element sepsis bundle that, when completed within 1 hour, was associated with improved outcomes in pediatric patients,” Evans said. “This supports the recommendation from expert communities that early antibiotic therapy is important for effective sepsis management.” – *by Bruce Thiel*

Disclosures: Evans reports receiving grants from the NIH. Please see the study for all other authors’ relevant financial disclosures.



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