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Inexpensive test is saving infant lives

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At birth in September, Moriah Mudd seemed strong and healthy. Her physical exam by a pediatrician at Riddle Hospital was completely normal. But then a nurse put a sensor on her foot and, within minutes, a machine called a pulse oximeter revealed that her blood oxygen level was alarmingly low - a sign that something could be critically wrong with her heart.

Three weeks later, Moriah underwent surgery at A.I duPont Hospital for Children in Wilmington, Del., to correct a severe congenital heart defect diagnosed by follow-up tests. Had it gone undetected, she would have gone into respiratory distress at home in Sicklerville, N.J., said her mother, who is a family physician.

"She's doing great now," Kimberly Jones-Mudd said of her 9-month-old daughter. "She's growing, eating, and her heart looks good."

Pulse oximetry screening for congenital heart disease has become standard practice across the country, less than two years after New Jersey became the first state to require it, surveys show. Even in states such as Pennsylvania and Delaware that do not mandate it, the simple, noninvasive, few-dollar test is now done in almost all birthing hospitals, surveys show.

It's too soon to know the impact of screening, but anecdotal cases like Moriah's and early reports are all good. In New Jersey, hospitals identified two newborns with critical congenital heart defects out of more than 25,000 babies tested in the first three months after universal

pulse ox screening began in August 2011, according to the U.S. Centers for Disease Control and Prevention. The CDC review also found that 10 infants with positive screens turned out not to have heart defects, a false alarm rate lower than in large European studies.

"It's a highly useful test. It's both cost-effective and life-saving," said Samuel Gidding, head of cardiology at duPont Hospital for Children.

"It's a screening program that people are embracing. They realize they should be doing this as part of good medical care," said Pittsburgh neonatologist Robert Cicco, vice chair of a committee that helps the Pennsylvania Department of Health develop newborn-screening guidelines.

Of the 40,000 babies born with congenital heart problems each year in the U.S., about 10,000 have a defect so severe they need corrective surgery or other procedures in infancy, research shows.

Many of these defects show up on fetal ultrasound. But experts estimate as many as 200 babies a year die from critical defects that go undetected until too late.

In Europe, studies show that about one in four newborns with positive pulse ox screens - that is, blood oxygen saturation below 95 percent - have a heart defect that could cause disability or death. Lung problems are also sometimes detected through positive screens.

In 2011, following advice from leading medical groups, the U.S. Secretary of Health and Human Services recommended that pulse oximetry be added to the uniform screening panel for newborns.

Since then, all but four states have added screening laws, rules, or pilot programs, according to the Newborn Coalition, an advocacy group. Even

in the four states without formal initiatives, most hospitals screen.

Pennsylvania is unusual, Cicco said, because the state does not mandate comprehensive newborn testing, but it does require reporting of results by hospitals that opt to test. This incongruity evolved from concerns about who would pay for testing, but in practice, it means that "99 percent of all newborns" are screened for 40 defects and diseases - now including congenital heart disease - as experts recommend, Cicco said.

"Nobody who is involved with this in a significant way is opposed to screening," he said.