

As pediatric use of iNO increased, mortality rates dropped

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Use of inhaled nitric oxide (iNO) among pediatric patients has increased since 2005 and, during a 10-year time period, mortality rates dropped modestly as the therapeutic approach was applied to a broader range of health ailments, according to an observational analysis presented Feb. 26, 2018 during the 47th Critical Care Congress.

iNO, a colorless odorless gas, is used to treat hypoxic respiratory failure in infants born full-term and near term and also has become an important therapy for acute [respiratory distress syndrome](#) and pulmonary hypertension in newborns.

Jonathan Chan, M.D., a Children's National Health System [critical care](#) fellow, analyzed de-identified data from patient visits from January 2005 to December 2015 at 47 children's hospitals around the nation. Dr. Chan included 18,343 [patients](#) in the analysis. Among the findings:

- As a group, the children had an overall mortality rate of 22.7 percent. The mortality rate dropped from 29.1 percent in 2005 to 21.2 percent in 2015.
- The median adjusted cost per admission was an estimated \$158,740 (\$5,846 per patient day).

"This large observational study indicates that the use of iNO grew from 2005 to 2015," Dr. Chan says. "While hospital stays grew longer during the study period, we saw a decrease in mortality of 0.01 percent per year."

The highest number of admissions with iNO use included:

- Neonatal care, including neonates with extracorporeal membranous oxygenation (ECMO)
- Cardiac care, including major cardiothoracic repair of heart anomaly
- Other surgeries, including tracheostomy with mechanical ventilation for more than 96 hours.

Dr. Chan notes that because this is a retrospective observational analysis, the study's findings should be interpreted as exploratory.

"Off-label use of iNO continues to increase among [pediatric patients](#). And an increasing proportion of admissions are for specialty areas other than neonatal care," he adds. "Increasing off-label use of iNO is associated with decreased [mortality](#). But it also is associated with an increased length of stay, higher hospital costs and more units of iNO administered."

Provided by Children's National Medical Center

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