Nitrous Oxide Use for Minor but Painful Pediatric Procedures

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Abstract

Problem: Nitrous oxide (N\textsubscript{2}O) is used for mild to moderate pain control and anxiolysis. The addition of registered nurses (RN) as providers of N\textsubscript{2}O administration may decrease the number of missed opportunities for pain control or anxiolysis. The purpose of this quality improvement initiative was to evaluate the type of procedures and rate of N\textsubscript{2}O administration by either provider, and cost difference between the two.

Method: A descriptive, cohort design for pediatric patients in the Imaging and Sedation Department between October through November of 2017 and 2018. Data was compared between physician delivery and either a physician or RN administered gas.

Results: A total of 197 (N=197) patients received N\textsubscript{2}O during 2017 and 2018. In 2017, there were 93 patients (n=93) and in 2018, there were 104 patients (n=104). In 2017, only physicians (n=93; 100%) delivered the gas. In 2018, 41 RNs (n=41; 39%) and 63 physicians (n=63; 61%) delivered the gas. The difference between providers was not significant (t=2; \(p = .875\)); hence, the addition of RNs did not change the number of patients receiving N\textsubscript{2}O. The most common procedure for physician delivery was botox injection while the most common procedure for RNs was intravenous catheter insertion. Finally, reimbursement was greater when a physician delivered the gas versus the RN.

Implications for Practice: The number of available physicians to deliver N\textsubscript{2}O decreased when RNs became available to deliver the gas. Because of this, the number of children receiving N\textsubscript{2}O was essentially unchanged and reimbursement from physician delivery was greater.

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