Procedural Sedation in the Pediatric Emergency Department: a Cost Analysis

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Background: Procedural sedation (PS) in the emergency department (ED) occurs frequently and is resource-intensive. The need to administer timely analgesia and PS to children must balance rapid patient throughput and departmental resource utilization. PS is often inadequately billed due to complex documentation requirements. We developed and implemented a targeted strategy to improve the PS physician billing process.

Methods: A quasi-experimental study of patients receiving PS charges with ketamine was performed in 2 EDs in free-standing children's hospitals with combined 120,000 visits annually. The pre-intervention period was from July 1, 2014 to June 30, 2015 and the post-intervention period was from August 1, 2015 to July 31, 2016. A targeted 3 component bundle was developed that involved an updated electronic medical record template, education and PS billing feedback. A one month washout period (July 2015) was established while implementing the bundle. Data collected included patient demographics, provider type, and procedure specific data. Pre and post intervention PS monthly charges were compared using the independent t-test.

Results: There were 1603 PSs billed over the 2 year period, 352 before, 1192 after implementation, with 59 billed during the washout period. The PS billing for the pre period had a significantly lower monthly charge mean of $6,054.55 (SD±$5,723.00) compared to a monthly charge mean of $20,600.00 (SD±$4,355.56) in the post period (p-value<0.001). This reflects significant missed moderate sedation potential charges in the pre-intervention period of $210,200 based on average charges during that period. This could be additionally improved five-fold if monitored anesthesia codes were used.

Conclusions: Implementation of a targeted system-wide process bundle for PS billing increased PS billing identification and charge capture. System-wide process changes are essential to assist with proper procedural documentation in the busy ED setting. Opportunities exist for continued revenue capture strategies with the transition to monitored anesthesia charges.

Figure 1. Monthly Ketamine Moderate Procedural Sedation Charges in the Emergency Department Pre and Post Intervention