

## TITLE: Sedation Medication “Time Out”

**Background:** Safety in Pediatric procedural sedation is paramount. Safety measures are meant to ensure that sedations are done with minimal risk of adverse events. Some recommended safety measures include: careful selection of patients at low risk for adverse events, appropriate monitoring to ensure adverse events are quickly recognized and rescue measures rapidly implemented, safety equipment readily available, judicious use of medications and complete discharge instructions. In 2014, the Joint Commission advised that a procedure “time out” be performed immediately before sedations to verify the procedure is about to begin with the correct: patient, procedure, laterality and site.<sup>1</sup> Careful attention to calculating the correct medication dosage using the child’s weight in kilograms is also imperative.<sup>2</sup>

**Introduction:** A quality and safety review of two medication errors that occurred in our institution during procedural sedations revealed that standard safety measures are, at times, insufficient in preventing medication errors. A Sedation Medication “time out” performed immediately after the procedure “time out” can help avoid medication errors.

**Quality and Safety Review Methods:** All sedations performed in our Pediatric ED are reviewed by our quality and safety team. Two medication errors occurred within 12 months; both involved overdose of medications due to misinterpretation of drug concentrations. No serious adverse patient events occurred; however, these events prompted a review of all sedation safety measures. In our ED, sedation orders are written by providers and reviewed by ED pharmacists. Medications are prepared and labeled by nurses and administered by sedation providers. We developed a Sedation Medication “time out” that immediately follows the procedure “time out” and consists of six steps. First, the weight (in kilograms) is verified. Then the sedation nurse and the sedation provider check the vial(s) from which the medication(s) was drawn and the labeled syringes for the correct: medication, dose, concentration, volume and route. The nurse documents verification of each step in the sedation narrator of our electronic medical record. All nurses and providers were educated about the new process.

**Review Results:** All sedations for one year (June, 2015 to May, 2016), following implementation of the Sedation Medication “time out” are reported upon. 473 sedations were performed in our Pediatric ED (children’s hospital within an adult university teaching hospital, tertiary care referral center, level one trauma center, catchment population 1.4 million, 28,000 patients  $\leq 18$  years per year). The Sedation “time out” typically took < 90 sec. to complete and was well received by nurses and providers. All six elements were documented in 463/473 (98%) cases. All ten cases with missing elements were followed up. No Sedation Medication “time out” occurred (1/10). Incomplete performance and/or incomplete documentation of the “time out” was found in (5/10). The remaining four cases were recorded incorrectly. No further medication errors have occurred.

**Discussion:** Adverse events are unfortunate in procedural sedations and at times may be unavoidable, as when patients develop laryngospasm, apnea or airway obstruction. Every effort to avoid medication errors must be made. The Sedation Medication “time out” is one way to increase sedation safety. Compliance in the first twelve months of implementation was high. The Sedation Medication “time out” is a quick, easy means of

improving medication safety and is a natural partner to supplement the procedure “time out”.

**Limitations:** This quality and safety review has not been tested in a rigorous manner and may benefit from further study.

**Conclusion:** Inclusion of a Sedation Medication “time out” immediately after the procedure time out may serve as an added safety measure to minimize the risk of medication errors during procedural sedations.

**References:**

1. The Joint Commission. Comprehensive Accreditation Manual for Hospitals (CAMH): The official handbook. Oakbrook Terrace, IL: The Joint Commission; 2014.
2. Guidelines for Monitoring and Management of Pediatric Patients Before, During and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016. Pediatrics 2016; 138(1):e1-e24.