



PEDIATRIC INTRAVENOUS MEDICATION ADMINISTRATION IN THE EMERGENCY DEPARTMENT, PART 3: RIP VAN WINKLE'S APPROACH TO PEDIATRIC PROCEDURAL SEDATION

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Emergency nurses are frequently asked to assist in procedural sedation for pediatric patients in the emergency department. A typical ED shift may include a 2-year-old child in need of chin laceration repair. The same nurse may be assigned a crying, frightened, 6-year-old child with an arm injury who is in need of a fracture splint and manipulation, while a scared 15-year-old boy with a spontaneous pneumothorax may require a chest tube insertion. Later in the evening a 13-year-old may require significant burn management in the emergency department. Safe pediatric procedural sedation in the emergency department requires the nurse to be aware of the performance steps in procedural sedation, including their institution's training, regulatory, and governing agencies rules.

Compassionate pediatric ED patient care involves safe procedural sedation to treat pain and anxiety during therapeutic or diagnostic procedures. Pediatric procedural sedation may be an infrequent or frequent occurrence, depending on the qualifications of the practitioners in your emergency department. As defined by the American College of Emergency Physicians and other practitioners, procedural sedation includes any interventions that alter a patient's response during tests and procedures. Prior to the initiation

of any procedural sedation procedure, the ED nurse should assess the child's age, weight in kilograms, developmental status, behavioral status, medical history, allergies, hospitalizations, current medications, pertinent family history, previous sedation or general anesthesia experience, and physical considerations. Before sedation is initiated, pediatric patients who have potential sedation risks such as major medical conditions affecting the respiratory, cardiovascular, and neurologic systems, as well as patients who have structural airway anomalies or psychiatric disorders, should be identified. Also important is pre-sedation identification of children with a history of snoring or central or obstructive sleep apnea, a history of prematurity, a family history of adverse reaction to sedation, analgesia, or general anesthesia, and pregnancy status. Pre-sedation evaluation should include a physical examination by the clinician, including auscultation of the heart and lungs and assessment of the neck and airway for conditions that may cause a high risk for endotracheal intubation or resuscitation. Collaboration with the parents regarding the child's prior response to stressful events, cultural considerations, and comfort measures is helpful. Parents should be offered the opportunity to stay with the child during the procedure. When the parent decides to stay with the child, clear, concise anticipatory teachings in terms a lay person can understand should be reviewed. Signed informed consent of the parent or guardian regarding the procedure, specific sedation medication, monitoring, pediatric airway management, potential complications, and discharge criteria should be obtained prior to initiation of procedural sedation. ED nurses need to be aware that parental anxiety is a predictor of the child's anxiety. Recognition and management of parental anxiety is crucial to the reduction of the child's anxiety.¹

On December 6, 2013, ENA endorsed the American College of Emergency Physicians document *Clinical Policy: Procedural Sedation and Analgesia in the Emergency Department*, which was approved on October 11, 2013.²

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Sedation states are a continuum that can progress from mild sedation to general anesthesia, and patients can slip from one level of sedation to another. Levels of procedural sedation collaboratively defined by the American Academy of Pediatrics, the American Society of Anesthesiologists, the American Academy of Pediatric Dentists, and the Joint Commission are analgesia, minimal sedation, moderate sedation/analgesia, deep sedation/analgesia, and general anesthesia.¹ The American College of Emergency Physicians defines sedation induced by ketamine as dissociative sedation, which produces profound analgesia and amnesia while retaining airway protective reflexes, cardiopulmonary stability, and spontaneous respirations. Ketamine is not considered part of the standard sedation definitions and should have separate guidelines. Safe, effective procedural sedation and analgesia in the emergency department is important to alleviate pain, including anxiety from medical procedures. Providing effective sedation is beneficial for the patient and family and also includes the ED personnel involved to facilitate a positive experience during a time of patient crisis. Procedural sedation is a treatment strategy of administering sedatives or analgesic medications to purposefully suppress a patient's level of consciousness. The level of sedation should be tailored to needs related to the patient and the procedure.^{1,2}

Personnel who administer sedation should be comfortable with procedural sedation and understand the pharmacology of the drugs. Airway management competency is mandatory with deep sedation and strongly advised with lower levels of sedation. Clinicians and emergency nurses involved in procedural sedation should be able to manage possible complications, recognize a compromised patient, and intervene. At a minimum, emergency nurses should be able to maintain the child's airway, understand repositioning, and provide bag-mask ventilation. Fasting prior to the procedure for any duration has not been shown to reduce the risk for emesis or aspiration when providing procedural sedation and analgesia. Prior to the procedure the temperature, heart rate, respirations, pulse oximetry, and blood pressure should be measured and recorded. Regarding intravenous catheter access, it is preferred that lighter sedation be used and that sedatives be given by oral, nasal, rectal, or intramuscular injection. If intravenous access is not available, equipment and personnel who are competent in performing vascular access should be immediately available in case any early warning signs of compromise are identified. Deep sedation requires placement of an intravenous catheter to enable administration of medications for sedation or resuscitation. Two personnel should be in attendance during the procedural sedation, including the provider performing the procedure and a

nurse to monitor the patient. Capnography is a recommended adjunct to pulse oximetry, with clinical assessment to detect hypoxia and apnea.^{1,2}

It is important to perform pain assessments before, during, and after the pediatric procedure to manage, control, and alleviate pain. ED nurses should utilize pain assessment tools approved by their facility that are age and developmentally appropriate. The Facial, Legs, Activity, Cry, Consolability (FLACC)/Revised FLACC scale has been found to be an appropriate pain assessment tool for preverbal children younger than 3 years of age, as well as children who are critically ill or have cognitive impairment. A valid and reliable pain assessment tool for children as young as 3 years old is the Faces Pain Rating Scale for children. Infant and other preverbal children pain rating scales that are based on observations instead of the child's report include the Neonatal Pain, Agitation, and Sedation Scale (N-PASS) for infants.³

Nonpharmacologic pain management interventions are effective adjuncts that reduce pain, fear, and anxiety and should be introduced early, along with pharmacologic interventions. Nonpharmacologic pain management strategies for ED nurses that are helpful include developing trust, being honest with age-appropriate pain descriptors, avoiding judgment of the child's response to pain, and encouraging family inclusion during the procedure. Some distraction techniques include music therapy, playing videos, watching cartoons, playing with bubbles and glitter wands, and using positive self-talk and imagery. If your agency employs Child Life Services personnel, they can assist with nonpharmacologic distraction methods. Children should be allowed to breast feed as a comfort measure when this is an option. Analgesia with oral sucrose is useful for infant pain management in the emergency department along with other analgesics, and the nonpharmacologic interventions of swaddling and nonnutritive sucking on a pacifier also may be used. Nurses can incorporate basic comfort measures of gentle touch, rhythmic movement, and use of a preferred position with nonpharmacologic interventions to relieve anxiety and fears and decrease pain.³

The goals of pediatric procedural sedation are to ensure patient safety and welfare; promote the comfort of the patient and family; minimize patient pain and physical discomfort; control anxiety; minimize psychological trauma and improve the amnesia effect; control movement and behavior during the procedure to ensure safe completion of the procedure; and return the patient to a presedation level of consciousness. Common ED procedures requiring procedural sedation and analgesia include a sexual assault examination, removal of a foreign body, wound care,

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