Scenario and checklist for airway rescue during pediatric sedation.
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Abstract Synopsis:

This paper represents a new kind of publication that has become more and more widespread in the last couple of years. It amounts to a created "case" that can be replicated in a simulator for educational/training purposes. The interesting part of this one is that it is specifically directed at pediatric sedation and I am not aware of many other reports of this type.

The authors introduce this paper by explaining that they developed a simulated sedation scenario to improve pediatric airway management instruction for moderate or deep sedation. A performance checklist was developed for this case (specifically addressing the issues related to sedation rescue performance) using expert opinion generated from a Delphi analysis of scripted and taped airway management scenarios during a moderate sedation performed by pediatric anesthesiologists. Delphi analysis is a structured process that extracts independent experts' predictions and opinions to generate a group consensus. The performance checklist can be used as a tool to evaluate skills and behavior necessary for airway rescue during pediatric sedation. The content of the module was designed to be specifically consistent with guidelines set forth by the American Society of Anesthesiologists, American Academy of Pediatrics, and PALS.

The simulation case scenario begins by setting out learning objectives in terms of medical knowledge (etiology of airway obstruction etc.), patient care (perform common airway management techniques), interpersonal and communication skills (communicate difficulties with airway management etc.), and systems based medicine. They follow with guided study questions and references for debriefing participants in the simulated scenarios. They point out the issues that must be well understood by any participant in pediatric sedation – such as what is essential information that the participant needs to know prior to initiating moderate or deep sedation. Other questions refer to the current status of sedation recommendations from the AAP and the ASA.

The preparation section of the scenario reviews monitors required, personnel required, general equipment required, and time duration of the sedation. The case stem involves a sedation provider taking over a sedation case of a 2 year old child with newly diagnosed ALL scheduled for a PICC line insertion in a procedure room. The scenario involves the nurse caring for the child unable to complete the procedure with the fentanyl and midazolam sedation that has been given. The sedation provider is asked to assist in providing more sedation for the child. The child is crying and the O_2 sat is 98%.

The scenario then describes the exact actions and reactions that the nurses involved in the scenario and the facilitators should undertake. Clinical and physiological changes for the patient are also carefully outlined. Instructions for ending the scenario are included, and depend on the participant completing definitive airway management.

Also included in the paper are the past medical histories for the patient, the complete checklist for the scenario, and an assessment key.

Commentary:

This particular paper might seem a bit odd to the uninitiated, but it represents an entirely new and growing area of publication. Case scenarios like this may be used at your own institution to spark interest in simulation based training for pediatric sedation training. At Dartmouth we use scenarios such as this to credential and privilege sedation providers for deep sedation. The advantages of simulation based training over other types of training, such as hands-on patient care in the OR, are clear. You can predict the response of the simulator. There is no potential injury to the simulator during the training. You can let the trainee make mistakes and learn from mistakes in a way that is not ethically possible on patients. Finally, it is just plain easier to schedule training in the simulator, and it might be a "fairer" judge of competence between providers since the scenarios can be replicated over and over in the simulator in an exacting manner not possible in the patient care environment. The obvious question remains as to whether or not this training is actually a valid measure of performance with "real" patients. That hard work is yet to be completed.

So, to give an example of the kind of work that still needs to be done in the field of sedation simulation, I would point toward the next review entitled, *Enhancing Patient Safety During Pediatric Sedation The Impact of Simulation-Based Training of Nonanesthesiologists.*