TITLE: SOCIETY FOR PEDIATRIC SEDATION CONSENSUS STATEMENT: CORE COMPETENCIES FOR PEDIATRIC PROVIDERS WHO DELIVER DEEP SEDATION

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ABSTRACT

Pediatric procedural sedation is practiced by a variety of pediatric providers with a wide range of training backgrounds in numerous different settings, each associated with unique challenges. Despite this variety, the core competencies of all pediatric sedation providers should be consistent. Therefore, the Society for Pediatric Sedation (SPS), a multidisciplinary collaborative organization, has created a consensus statement to outline these core competencies. We have developed this set of competencies based on adverse outcomes data from a large shared database developed by the Pediatric Sedation Research Consortium, the research arm of the society. As such our recommendations are not based strictly on "consensus," but rather on data that reflects the challenges of providing sedation to children. This outline is intended to be a framework for providers, training centers, and institutions to ensure consistent skills amongst all pediatric sedation providers.

Contributors Statement Page

The authors certify that they have made substantive intellectual contributions and meet the following criteria:

1) Substantial contributions to conception and design and interpretation of data.
2) Drafting the article or revising it critically for important intellectual content.
3) Final approval of the version to be published.

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1. INTRODUCTION

Children have a much greater need for procedural sedation than adults. Diagnostic and therapeutic procedures that require no sedation in adults will frequently require deep sedation in children. Many environments of care require pediatric deep sedation services, including the emergency department, radiology, oncology, and dental offices. This great demand for sedation services and varied venues where these services are needed make it imperative that many disciplines are trained to provide pediatric sedation. Anesthesiologists, emergency medicine physicians, intensivists, hospitalists, dentists and other subspecialists have been involved in the provision of this care and the evaluation of its outcomes to a degree that is not found in adult sedation practice.

The Society for Pediatric Sedation (SPS), a multidisciplinary collaborative organization of nearly 500 individual and 30 institutional members, is dedicated to optimizing the safety, effectiveness, and efficiency of sedation services for all children. As such, we feel it is critical that we work collaboratively with all individuals that provide this care. The SPS is dedicated to quality as evidenced in its commitment to research, continuing education, and provider training.[1-4] Therefore, this organization is uniquely qualified to offer an outline for the core competencies of pediatric sedation providers.

2. OUTLINE OVERVIEW

The following outline is a framework for developing pediatric deep sedation core competencies. The purpose of this outline is to highlight the areas of proficiency one should expect of any provider who undertakes the deep sedation of children. The SPS recognizes that the field of pediatric sedation is undergoing rapid growth and that future studies are needed to better define the education and training needed to continually improve quality sedation care. The SPS would anticipate re-visiting this outline every 2 years to further refine this document based on advances in this emerging field.

The methodology used to develop this core competency statement first involved a thorough review of the data on pediatric sedation adverse outcomes as described in the various studies that have been produced by the Pediatric Sedation Research Consortium (PSRC), the research arm of the SPS.[5-7] After consideration of the data on adverse outcomes and required resuscitation in approximately 150,000 pediatric sedation encounters, an expert panel of the executive board of the SPS was assembled to consider the critical competencies required to manage these possible complications.

The SPS has modeled this outline from the core competencies included in the "Statement on granting privileges for deep sedation to non-anesthesiologist sedation practitioners" from the American Society of Anesthesiologists (ASA).[8] This outline is intended to specifically address the sedation of children, which is not included in the ASA document.

3. CORE COMPETENCIES

The practitioner providing deep sedation of children should possess the following core competencies:

3.1 Appropriate methods for obtaining informed consent through pre-procedure counseling of patients regarding risks, benefits, and alternatives to the administration of sedative and analgesic drugs to establish a level of deep sedation.

3.2 Skills for obtaining the patient's medical history and performing a physical examination to assess risks and co-morbidities, including assessment of the airway for anatomic and mobility characteristics suggestive of potentially difficult airway management. The pediatric sedation practitioner will be able to recognize those patients whose medical condition(s) may require consultation with an anesthesia professional. In pediatrics these conditions may include but are not limited to: congenital airway or cardiac disease, obesity, central and obstructive apnea, severe systemic disease, neonates with or without prematurity, swallowing dysfunction, and risk for aspiration of gastric contents.

3.3 The pharmacology of:

- All sedative and analgesic drugs the practitioner may administer
- Pharmacological antagonists to the sedative and analgesic drugs when appropriate
- Medications involved in rescue

3.4 The benefits and risks of supplemental oxygen.

3.5 Recognition of adequacy of ventilatory function:

- The ability to use capnography and understand the results of such monitoring.
- Ability to identify hypopnea, apnea, laryngospasm and partial or complete airway compromise or obstruction. A provider must also recognize the cardiac effects of respiratory compromise if left untreated in pediatric patients.

3.6 Recognition and understanding of the different levels of sedation and development of a sedation plan based on a critical analysis of patient, procedure, and monitoring factors.

3.7 Proficiency in airway management for rescue, withthe proven ability to perform the following:

- Airway positioning including jaw thrust and chin lift
- Bag-valve-mask ventilation
- Insertion and use of oro- and nasopharyngeal airways
- Insertion and ventilation through a laryngeal mask airway
- Direct laryngoscopy and endotracheal intubation

3.8 Monitoring of physiologic variables, and normal values for pediatric patients including the following:

- Blood pressure.
- Respiratory rate.
- Oxygen saturation by pulse oximetry with audible variable pitch pulse tone.

- Capnographic monitoring. The sedation practitioner shall be familiar with the use and interpretation of capnographic waveforms to determine the adequacy of ventilation during deep sedation.
- Electrocardiographic monitoring.
- The importance of continuous use of appropriately set audible alarms on physiologic monitoring equipment.
- The importance of monitoring the patient through the recovery period and the inclusion of specific discharge criteria for the patient receiving any level of sedation.

3.9 Documentation related to all aspects of sedation including:

- The drugs administered, the patient's physiologic condition and the depth of sedation throughout the period of sedation and analgesia, using a graphical, tabular or automated record that documents all the monitored parameters including capnographic monitoring.
- Documentation requirements related to screening, history and physical exam, sedation planning and appropriate discharge.

3.10 Regardless of the availability of a "code team" or the equivalent when granting privileges to administer deep sedation to pediatric patients, the sedation practitioner will have advanced life support skills and current certificate such as those required for Pediatric Advanced Life Support (PALS) or Advanced Pediatric Life Support (APLS.).

3.11 Establishment and awareness of an effective rescue/emergency plan that includes personnel, equipment and immediate response by additional skilled professionals. In outpatient settings, EMS response should only be used as a transport mechanism, not as the primary medical response team..

3.12 Required participation in a quality improvement system to track adverse outcomes and unusual events for all sedation providers

3.13 Understanding and awareness of policies related to procedural sedation from hospital, state, and/or federal regulatory agencies...

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