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Patient Safety Tip of the Week

September 2, 2025

Need for Universal Pediatric Dental Sedation Standards

The number one issue in dental patient safety has always been pediatric dental sedation. There are, of course, circumstances where necessary dental care must be rendered to children who must be sedated. But our columns listed below detail the many cases of deaths resulting from pediatric dental sedation or anesthesia.

Our September 2019 What's New in the Patient Safety World "New Guidelines for Pediatric Dental Sedation" discussed the 2019 update of the joint AAP (American Academy of Pediatrics) and the AAPD (American Academy of Pediatric Dentistry) "Guideline for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures" (Cote 2019). This is a comprehensive guideline that notes how pediatric procedural sedation differs from that in adults and focuses on multiple facets of procedural sedation in pediatric patients:

- no administration of sedating medication without the safety net of medical/dental supervision
- careful pre-sedation evaluation for underlying medical or surgical conditions that would place the child at increased risk from sedating medications
- appropriate fasting for elective procedures and a balance between the depth of sedation and risk for those who are unable to fast because of the urgent nature of the procedure
- a focused airway examination for large (kissing) tonsils or anatomic airway abnormalities that might increase the potential for airway obstruction
- a clear understanding of the medication's pharmacokinetic and pharmacodynamic effects and drug interactions
- appropriate training and skills in airway management to allow rescue of the patient, age- and size-appropriate equipment for airway management and venous access
- appropriate medications and reversal agents

- sufficient numbers of appropriately trained staff to both carry out the procedure and monitor the patient
- appropriate physiologic monitoring during and after the procedure
- a properly equipped and staffed recovery area
- recovery to the pre-sedation level of consciousness before discharge from medical/dental supervision
- appropriate discharge instructions

That guideline was endorsed by the American Academy of Pediatrics, the American Academy of Pediatric Dentistry (AAPD), the American Society of Anesthesiologists (ASA), the Society for Pediatric Anesthesia, the American Society of Dentist Anesthesiologists, and the Society for Pediatric Sedation.

In that September 2019 What's New in the Patient Safety World "New Guidelines for Pediatric Dental Sedation" we stressed that perhaps the most important item in the guideline is a requirement that such procedures be done in the presence of two qualified individuals. That means that the dentist or oral surgeon performing the dental or oral surgery procedure cannot be the individual administering and monitoring the sedation. This ensures that individuals are attending to one primary task and not involved in two different tasks simultaneously.

The guideline also clarifies that deep sedation or general anesthesia must be administered by a qualified anesthesia provider (a physician anesthesiologist, certified registered nurse anesthetist, dentist anesthesiologist or second oral surgeon). Because children commonly pass from an intended sedation level to an unintended deeper level of sedation, practitioners of sedation must have the skills to rescue the patient from a deeper level than that intended for the procedure. The ability to rescue means that practitioners must be able to recognize the various levels of sedation and have the skills and age- and size-appropriate equipment necessary to provide appropriate cardiopulmonary support if needed.

The guideline includes discussion on monitoring and documentation before, during, and after the procedure. There is good discussion on capnography for continuous expired carbon dioxide measurement. The guideline also emphasizes caution, as we have in multiple columns, regarding the use of devices such as "papooses" that might restrict chest movement or obstruct airways. We were also pleased to see the guideline emphasizes the need in nonhospital facilities for a protocol for the immediate activation of the EMS system for life threatening complications. We've previously advised that drills and simulations should include even front office staff so they can facilitate such emergency responses.

We thought those guidelines would go a long way to ensure the safety of pediatric patients undergoing sedation and/or anesthesia for dental procedures. But what is lacking in many states is a mechanism for ensuring that these guidelines are being followed. Our December 2023 What's New in the Patient Safety World column "State Struggles with

Pediatric Dental Anesthesia" highlighted some of the struggles some states are having in implementing such guidelines.

Now a new opinion piece in the journal Anesthesia & Analgesia says there is an urgent need for universal pediatric dental sedation standards. Salik et al. (Salik 2025) note that the American Academy of Pediatric Dentistry (AAPD) and the American Dental Association (ADA) identify specific populations of children who require deep sedation or general anesthesia for dental interventions, including children with special needs, situational anxiety, uncooperative behavior, cognitive disabilities, or medical conditions that mandate general anesthesia. But they go on to identify constraints of the hospital operating room environment and difficulty for pediatric dentists obtaining block time as factors bolstering the need for pediatric dental office-based anesthesia. They also note there is a growing need for office-based anesthesia for pediatric dental procedures based on reduced cost, increased access to outpatient services, less wait time, and more efficient scheduling. Yet, the morbidity and mortality associated with office-based anesthesia for pediatric dental care are likely underreported, noting that a national database of complications associated with pediatric office-based dental care does not currently exist.

They call for dental societies, policymakers, and regulatory boards to demand higher standards for pediatric dental OBA care, including universal reporting standards for adverse events that can inform policy change through the creation of a national registry.

Such standards would include comprehensive preoperative assessment of a patient's medical history and potential risk factors for anesthetic adverse events and standards for provider training, continuous recertification, meticulous oversight, emergency preparedness, and adherence to safety protocols in settings where sedation is provided.

As we have advocated in the past, they call for having a certified anesthesia provider with the sole responsibility of patient monitoring, along with advanced resuscitation and airway equipment. for dental procedures requiring deep sedation or general anesthesia. Informed consent should be obtained so that parents are aware of the risks associated with anesthesia, as well as the alternatives, including higher-level care in a hospital setting.

Importantly, simulation exercises and systematic emergency response drills to maintain preparedness for sedation-related complications should be undertaken in pediatric dental offices. We've previously advised that drills and simulations should include front office staff so they can facilitate such emergency responses. Salik et al. stress the importance of effective execution and training in high-quality cardiopulmonary resuscitation (CPR) by dental practitioners.

And they call for all anesthesia-related morbidity and mortality to be tracked to provide aggregate data for practice improvement and ensure compliance with sedation practice guidelines.

They go on to cite the danger of allowing the dentist or oral surgeon to direct sedation while simultaneously performing the procedure and point out that the dental assistant assigned to monitor the patient in such single-provider practices often has no formal medical training, cannot establish intravenous access, rescue an airway, or administer medications.

They note that, in the United States, there is no nationally mandated standard for monitoring of dental patients during sedated procedures. While capnography has been found to play a significant role in reducing perioperative respiratory adverse events, its utilization is not monitored or enforced during dental office-based anesthesia procedures. Some states have begun to mandate the use of $EtCO_2$ monitors for dental sedation, and this should eventually become the minimal standard of care for pediatric office-based anesthesia cases on a national level.

They describe many obstacles to change, including powerful lobbies, resistance to increased oversight. preservation of professional autonomy, increased operational costs of requiring an additional anesthesia provider, limited accessibility to dentist anesthesiologists in underserved areas, and reimbursement disparity between government-subsidized care and private practice fees.

This opinion piece by Salik et al. is a powerful reminder that, despite the 2019 publication of guidelines for pediatric dental sedation, there remain significant gaps in patient safety during office-based pediatric dental sedation and anesthesia even as the demand for such office-based procedures is increasing.

Some of our previous columns on dental patient safety issues:

March 15, 2016 "Dental Patient Safety"
August 2016 "Guideline Update for Pediatric Sedation"
March 28, 2017 "More Issues with Dental Sedation/Anesthesia"
August 8, 2017 "Sedation for Pediatric MRI Rising"
November 28, 2017 "More on Dental Sedation/Anesthesia Safety"
July 2019 "Dental Prescribing Called Into Question"
September 2019 "New Guidelines for Pediatric Dental Sedation"
May 5, 2020 "COVID-19 and the Dental Office"
January 25, 2022 "More on Dental Patient Safety Issues"
December 2023 "State Struggles with Pediatric Dental Anesthesia"
January 2025 "Dental Prophylaxis in Patients with Prosthetic Joints"

References:

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During, and After Sedation for Diagnostic and Therapeutic Procedures. Pediatrics 2019; 143(6): e20191000 June 2019
https://publications.aap.org/pediatrics/article/143/6/e20191000/37173/Guidelines-for-Monitoring-and-Management-of

Salik, Irim MD; Chan, Kar-Mei MD; Pesola, Isabel MD; Abramowicz, Apolonia E. MD. Death in the Dentist's Chair: The Urgent Need for Universal Pediatric Dental Sedation Standards. Anesthesia & Analgesia ():10.1213/ANE.0000000000007578, May 23, 2025
https://journals.lww.com/anesthesia-analgesia/citation/9900/death_in_the_dentist_s_chair__the_urgent_need_for.1309.aspx

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