

## Helping Anxious and Uncooperative Children to Cope with Invasive Dental Care Using Sedation: A Double-Edged Sword

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On a daily basis the pediatric dentistry specialist confronts children of various ages with varying levels of apprehension, cooperative ability, and minimal to extensive treatment need. During initial visits, decisions are needed that determine the most prudent and safe method to provide quality care. The majority of children possess and enable treatment by way of the use of conventional and mainstream communication techniques. Mildly fearful and passively cooperative children generally can be expected to respond favorably to fundamental non-pharmacological approaches. Others lacking cooperative potential may require non-mainstream or advanced techniques to permit in-office care using conscious, depressed consciousness, or unconscious techniques. [1] This editorial will focus on the latter population and do so with a critical look at the advantages, risks, and shortcomings of sedative techniques which demand considerable expertise in clinical drug and dosage selection, proficiency in medical management and one's ability to recognize and manage an adverse reaction and prevent a catastrophic outcome.

While having performed literally over 3000 in-office sedations using the oral route of administration without incident over the past 35 years, this author, clinician, academician, and researcher is reminded of countless occurrences of morbidity and mortality reported both in recent times and the last few decades in dental offices resulting from poor clinician judgment, and/or deliberate failure to comply with existing safety standards. [2] Since the development of original guidelines in 1985 which represent the standard of care for pediatric dentistry, pediatrics, oral and maxillofacial surgery, dental and general anesthesiology, numerous revisions [3] have been developed that clarify and define levels of sedation, practitioner responsibility, facility and personnel requirements. Continuing education from all disciplines are in existence with the intent to bring practitioners up to speed with expectations and proficiency in their ability to recognize and manage any problem related to the inadvertent induction of deeper planes of sedation than intended.

The objectives of national accreditation commissions are to insure that advanced training programs include all necessary background and hands-on experience during the course of their programs to demonstrate safety and proficiency. In the arena of privatized continuing education formats, courses are readily appearing nationwide of varying quality and depth which attempt to supplement training of specialists and non-specialists in the direct and immediate use and application of sedation teaching the use of mild, moderate, and deep sedation. These courses, while conscientious, are highly limited in scope and generally fall seriously short of hands-on supervision over weekend periods. They preach objectives which encourage practitioners to enhance and expand their existing sedation skills and experience, but in final analysis are developed and designed to generate profitable returns for their instruction.

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Having taught both the didactic and clinical sides of safe and effective use of pediatric sedation within advanced training programs for almost four decades, there are in this observer's opinion, no shortcuts. Familiarity with classical and contemporary sedation literature represent a starting point. Formal training in airway management, cardiovascular, respiratory and neurological assessment and emergency management, Serve as fundamental pre-requisites for the selection and use of pharmacological adjuncts regardless of the intended depth of sedation sought for managing varying levels of anxiety and resistance. Arguments that one need not have proficiency in all of these areas when only light levels of sedation are to be secured are inadequate.

The subtleties and nuances of pediatric sedation are incredibly complicated and in no way can be grasped or readily incorporated into sound clinical judgment over a weekend training session. The ability to assess from a few moments observation of a child what agents and dosages are safe and appropriate for a give level of apprehension or resistance more likely takes years of experience. [4] The reality of sedation using routes of administration which carry significant disadvantages and shortcomings (the oral route) does not excuse the clinician of his/her responsibility to insure patient safety for unintentional induction of deeper planes of sedation, alteration of vital signs, tissue perfusion, or ventilatory demands. [5] Question remains as to whether sufficient experience and proficiency can be gained by a weekend continuing education course.

Reports of adverse reactions, morbidity, and mortalities state that 31 deaths over the last 15 years have occurred. They continue to appear, one two weeks ago in Vancouver (details not yet available), one in Texas a year ago, one in Hawaii two years ago, and in Chicago a few years back, to name a few. In most cases, etiology of mishaps and catastrophic outcomes relate to gross negligence, unfamiliarity with agents and dosing selected, absence of thorough physical evaluations pre- and intra operatively, and failure in complying with existing safety guidelines. These and over-dosage of local anesthetic where toxic dosages have been grossly exceeded account for the majority of mishaps and fatal outcomes. [5] It would be accurate to say that hundreds of sedations safely occur on a daily basis throughout the U.S. This occurs because responsible agents and dosages are employed and these practitioners are in compliance with national guidelines for their safe use.

These successful sedations occur due to rigid adherence to patient monitoring requirements consistent with the needs of the patient, maintenance of a sedation log documenting all pertinent aspects of the visit as it pertains to patient responses and variations in vital signs and protective reflexes, appropriate post-operative and discharge criteria fulfillment. The double-edge sword is revealed when clinicians choose to shortcut these essential measures of safety. To date, no such data bank exists or is required state to state or on a national basis to identify violators. Individual cases involving morbidity and mortality reach national attention through the media.

Occasionally, specifics are identified with respect to Practices or individual clinicians involved; rarely do these reports include actual agents and dosages used and the course of events which are determinants of whether standards of care were followed or departed from. Most often, litigation is pursued and quietly resolved with details buried in final deliberations. In some cases, Dental societies become involved and licensure censure, drug utilization privileges, and mandatory continuing education are invoked. Under these circumstances, rarely are specifics released to permit cogent lessons to be learned in teaching centers or clinical practice.

Appropriate and safe use of pediatric sedation has been a wonderful adjunct to helping many children Undergo treatment in an office setting and to avoid prohibitively costly care in a surgical center or hospital Operating room. Efforts to maintain this modality as a viable alternative for patient care needs to see Greater attention on both state and national levels, and institutional training centers to monitor clinician compliance with guidelines for safety. Such efforts might include scrutiny of agents and dosing employed which Mandate limiting depths of sedation to no deeper than moderate levels of sedation. Development of a national data bank to record any and all cases involving morbidity and mortality seems minimally appropriate. Distinctions need be made between licensure which permit sedation for light and moderate sedation vs deep sedation and general anesthesia.

In closing, there exists a group of parents, proclaimed victims of inappropriate and inadequate sedation practices by dentists who not without basis believe are responsible for the unspeakable deaths of their children. Raven Maria Blanco Foundation was started to raise awareness of oral sedation use in pediatric dentistry and its dangers. Every dentist or pediatric dentist should be well aware of these occurrences and the existence of a plethora of reports on the internet which describe these instances and the devastating and everlasting effects.

### References

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