

# Alignment of Sedation Training and Current Practices of Pediatric Dentists through Education Assessment

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## BACKGROUND

The Commission on Dental Accreditation (CODA) highlights sedation as a requirement for pediatric dentistry residency graduation which includes 50 overall experiences, where 25 experiences must be as the primary operator.<sup>1</sup>

However, CODA does not provide residency programs guidance on which medications to use, how to select and monitor patients, or other factors associated with providing safe and effective care with sedation.<sup>1</sup>

This educational assessment and quality improvement project's main aim was to determine if training in sedation during residency meets current provider's needs. A secondary aim was to utilize feedback from an educational assessment survey to review the residency program's current sedation practices and implement new methods to ensure patient safety and effectiveness.

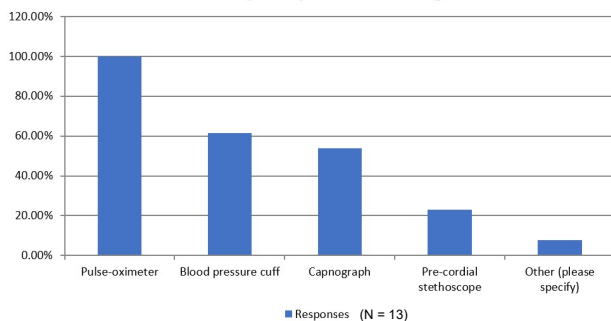
## PURPOSE

To assess the current sedation practices among pediatric dentistry residents who completed their training from Children's National Hospital and to align training methods for current residents.

## METHODS

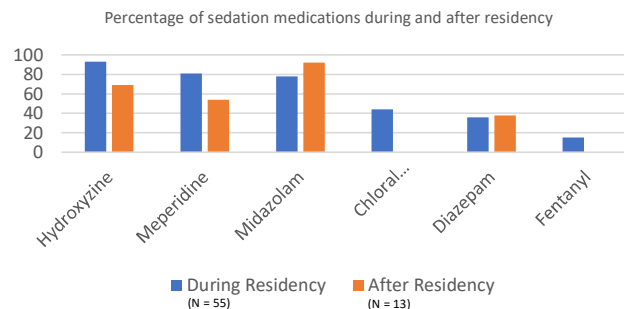
Using SQUIRE guidelines, residency graduates were surveyed on current sedation practices. Information collected included: demographics, year of residency completion, education experience, type of sedation medications used during residency and currently, emergency protocols, participation in continuing education courses, barriers to provision of sedation, and clinical protocols. Descriptive statistics were completed, and information was utilized to update current sedation training protocols.

Monitors used by Respondents during sedation

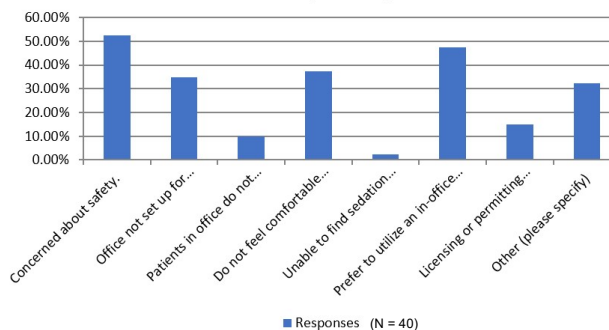


## RESULTS

- Fifty-four of 90 possible participants responded for a 60% survey response rate. Only 13 respondents (13/54) perform moderate sedation currently.
- Approximately 62% (8/13) providers currently practicing moderate sedation are utilizing different medications than those they were trained with at Children's National Hospital and about 62% (8/13) providers use sedation medications in combination.
- About 92% (12/13) providers always use nitrous oxide with moderate sedation and only 8% (1/13) always use protective stabilization.
- About 85% (11/13) providers practice emergency scenarios annually and 92% (12/13) providers prefer staff to participate in practicing emergency scenarios. Based on survey, 77% (10/13) participate in continuing education courses after graduation.
- About 69% (37/54) of respondents expressed that the emphasis on sedation training during residency was just right. Approximately 74% (40/54) of respondents described that their education prepared them well to perform moderate sedation in practice.



Reasons for not providing sedation



## DISCUSSION

- Over 65% of respondents agreed that Children's National Hospital's sedation training was just right, effectively preparing them for continued practice. However, to further enhance the experience and to ensure safety in in-office moderate sedation, the dental team at Children's National Hospital assessed their sedation education and practices. Feedback from previous residents led to a better alignment of education with practice, and the creation of a formalized checklist and protocol. The checklist covers four sections: pre-sedation, medication, intra-op, and post-sedation, with tasks reviewed in sequence before sedation proceeds.

### PROVIDERS WHO UTILIZE MODERATE SEDATION

- No providers always require patients to see their physician for a "history and physical" before sedation. Approximately 61% (8/13) of providers sometimes require patients to see their physician for a "history and physical" before sedation, raising concerns about patient safety. A healthy evaluation by a licensed practitioner is essential to ensure parents do not overlook critical details.<sup>2</sup>
- Providers currently use diazepam (Valium), hydroxyzine (Atarax), and midazolam (Versed) for sedation, which aligns with prior studies showing benzodiazepine are frequently used.<sup>10,3</sup>
- Nitrous oxide use is increasing, and protective stabilization use is decreasing which coincides with the previous studies. However, providers should be cautious as the additive effects of nitrous oxide might put patient into deeper sedation than anticipated.<sup>3</sup>
- All the providers use pulse oximetry during moderate sedation in practice, but few providers use blood pressure cuff, precordial stethoscope and capnography during sedation even though capnography can immediately detect changes in oxygen levels and is a requirement when a patient cannot conduct a meaningful conversation during moderate sedation.<sup>2</sup>

### SEDATION CONSIDERATIONS

- Recognizing that sedation is a spectrum, and moderate sedations can become deeper than anticipated, every provider must be capable of handling emergency situations.
- Sedation practices and safety protocols evolve over time, especially as new medications, equipment, and best practices emerge. Providers should keep themselves updated with recent trends of sedation medications.

## CONCLUSIONS

- Feedback from previous learners and continual assessment of educational programs can help to align education with unsupervised practice after graduation.
- Changing trends in medication usage highlight the crucial significance of continuous education to ensure that sedation practices meet the needs of patients, thereby upholding a high standard of patient safety.

## REFERENCES

