



Shared Learning

from the Dental Patient Safety Foundation Reporting Tool

“What gets measured gets managed” is the DPSF philosophy to encourage reporting. All received information about patient safety events (unsafe conditions, near misses or adverse events) are de-identified contextually (confidentiality is fully protected under federal law), aggregated, analyzed and abstracted by selected experts from our DPSF committees. Reports are generated and disseminated as the only means to learn from our errors. The information in these peer-reviewed reports is provided for its educational value only, and does not purport to establish any legally binding standard of care. Feedback is encouraged.

Cases 2018.3A: Unmonitored Recovery

Situation: A pre-cooperative 6 y/o female presented for removal of 2 teeth under moderate enteral sedation. PMH was non-contributory. The patient weighed 75 pounds with a calculated BMI-for-age above the 99th percentile. One hour after drinking an elixir with 20mg midazolam, the patient was returned to the dental suite where standard monitors were applied, and a 35% N₂O/O₂ mixture and local anesthesia were administered. The procedure was completed in 10 minutes and the dentist carried the patient to a recovery area before returning to his busy practice. The patient’s mother was brought back to sit with her child during recovery with the office staff occasionally checking in on the pair. 15 minutes later, the mother began screaming that her child wouldn’t wake up and wasn’t breathing. The dentist and office team rushed back into the room to find the child unresponsive and apneic. Monitors had to be retrieved from another room and EMS was called while the office team began resuscitation. Apnea persisted despite a stimulating head tilt/chin lift/jaw thrust maneuver. A pediatric oropharyngeal airway was placed, and the patient was successfully ventilated with a bag-valve-mask. SpO₂ was noted to be 78%. After 2 minutes, spontaneous ventilations resumed, however, the child remained unresponsive for 10 more minutes, during which time the upper airway patency required manual support. The child was transferred to a local hospital and was released later that day.

What we learned: Patients receiving any level of sedation or general anesthesia must be monitored until recovery is complete. It must be appreciated that oral sedatives occasionally absorb slower than expected and may not reach peak effect until after a short dental procedure is complete. As in this case, patients with obesity are often at increased risk of airway obstruction during recovery once the stimulation of the dental procedure has ended. It is prudent to be mindful that this risk applies to patients of any habitus. Both the dental team and recovery area appeared to be unprepared for this event, which contributed to a chaotic, but fortunately successful intervention.

Recommendations and actions: The American Society of Anesthesiology (ASA) Practice Guidelines for Moderate Procedural Sedation and Analgesia 2018¹ recommends patients be observed and monitored in a staffed and equipped area until they are near their baseline level of consciousness and are no longer at risk of cardiorespiratory depression. Oxygenation and ventilation should be monitored continuously and documented at 5 to 15-minute intervals until the patient is ready for discharge. Trained personnel should remain with the patient at all times until discharge.

The ASA also recommends discharge criteria be designed to minimize the risk of future cardiorespiratory depression and that only trained personnel make decisions as to when that patient meets that criteria. Metrics such as the modified Aldrete Score or SPEEDS criteria² (SpO₂, pain, extremity movement, emesis, dialogue, stable vital signs) can be used to aid in clinical decision making. Documentation should be complete, and discharge criteria should be relevant and practical to the individual practice and baseline status of the patient. A patient who is returned to baseline and, as appropriate, in minimal to **no distress** (assumed free of severe pain and nausea), **conversant** (assumed adequate ventilation, SpO₂, and oriented to person and place), **ambulatory without assistance** (assumed normal cerebral perfusion pressure when upright and able to move all extremities), and **returned to pre-anesthetic baseline heart rate and blood pressure** would in most cases be eligible for discharge, under the care of a responsible escort. A sample table is included, with all 4 yes responses necessary for safe discharge.

No distress (pain and/or nausea)	Yes / No
Conversant (at pre-sedation level)	Yes / No
Ambulatory (at pre-sedation level)	Yes / No
Baseline vital signs restored	Yes / No

¹ Practice Guidelines for Moderate Procedural Sedation and Analgesia 2018. Anesthesiol 2018;128:437-79.

² Burke B, Kyker M. Speeds Criteria vs. Modified Aldrete and Fast-Track Criteria for Evaluating Recovery in Outpatients. Open J Anesthesiol 2013;3:309-14.