

Definitions of Levels of Sedation



Minimal Sedation - a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, breathing and cardiovascular functions are unaffected.

Moderate Sedation - a drug-induced depression of consciousness during which patients respond purposefully to verbal commands or after light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

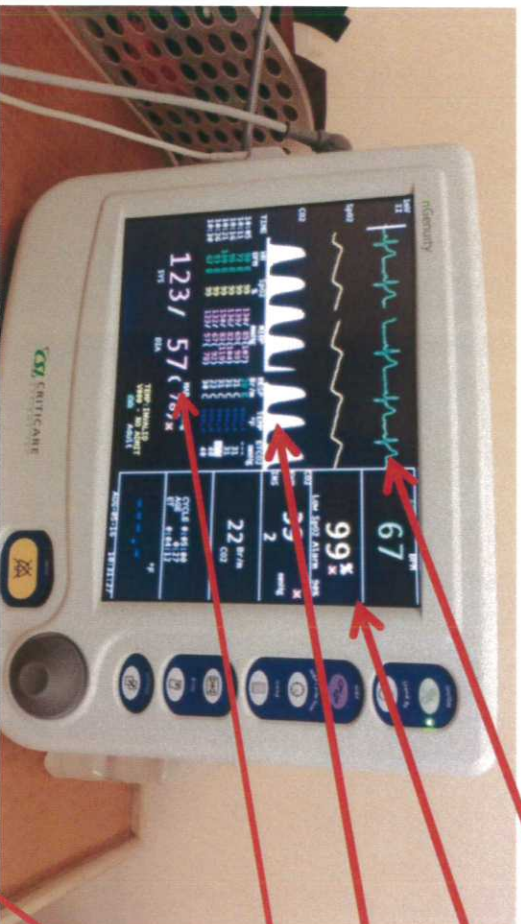
Deep Sedation - a drug-induced depression of consciousness during which patients cannot be easily aroused, but respond purposefully after repeated verbal or painful stimulation. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

General Anesthesia - a drug induced loss of consciousness during which patients are not arousable even by painful stimulation. The ability to maintain ventilatory function is often impaired. Patients often require assistance in maintaining an airway, and positive pressure ventilation may be required. Cardiovascular function may be impaired.

Practitioners intending to produce a given level of sedation should be able to rescue patients whose level of sedation becomes deeper than initially intended.

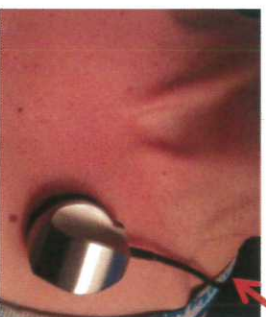
Monitoring

Patient monitor



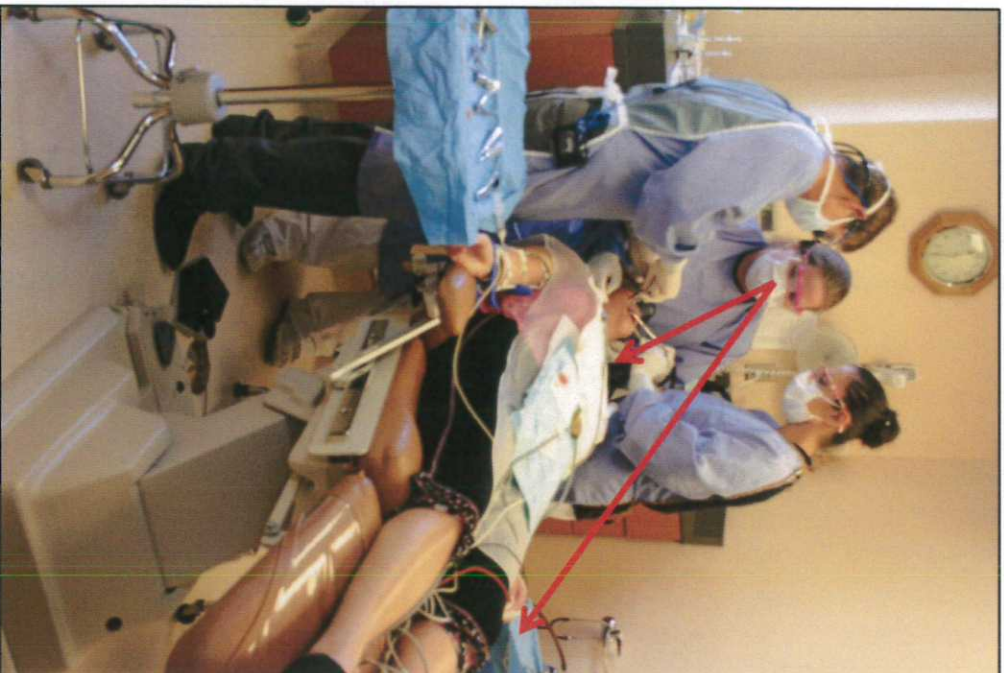
Monitor visible by dental team

- ECG watched for heart rhythm irregularities
- Pulse oximeter gives oxygen saturation readings
- Capnograph displays respirations breath by breath
 - Capnography measures exhaled carbon dioxide , verifies proper breathing
- Pulse and blood pressure readings taken at 5 minute intervals
- Patient's breathing checked by listening through stethoscope
- Procedure stopped immediately if any abnormality is detected
- airway, breathing, and circulation are monitored at all times



Personnel

dental team model



Deep sedation/general anesthesia

- Designated patient monitor watches chest wall movement to check breathing and watches monitors.
- Second staff member assists with procedure
- Dentist listens to breath sounds using precordial stethoscope.
- Entire team watches the patient
- Third staff member usually available
- Team model utilized for brief interruptible procedures, healthy patients
- Dentist manages emergencies and staff assist with emergency procedures

Personnel – deep sedation/GA dedicated anesthesia provider



- Anesthesiologist watches monitors
- Dentist performs procedure
- Staff member assists dentist
- Dedicated anesthesia provider most often utilized for small children, high risk patients, lengthy or complex procedures
- Anesthesiologist manages emergencies, and the dentist and staff assist if needed.

Pediatric Dental Sedation

- Risk may be correlated with age
 - Age 2-6 - higher risk – “pre cooperative”
 - Age 6-12 - intermediate risk
 - Age 12-21 - lower risk
 - Airway development may be more closely correlated with body surface area than with age

Pediatric sedation studies

Author	Data source	Dates	No. of incidents	Ages	Age of Adverse Outcomes
Beach 2016	Multi center hospital study (PSRC)	2007-2011	75/139,000 Cardiac arrest, aspiration, unplanned admission	Age <21	Age 1-5 – 40% (30/75) Age 6-11 – 17% (13/75)
Lee 2013	Media reports	1980-2011	44 – Deaths only	Age <21	Age 2-5 - 47.7% (21/44) Age 6-12 - 18.2% (8/44)
Chicka 2012	Closed Claims	1993-2007	17 9 – Death/brain damage	Age <14	Age 1-6 – 82% (14/17) Age 7-11 – 18% (3/17)
Cote 2000	Adverse drug and provider reports (dental+ medical)	1969-1996	95 60 – Death/brain damage	Age <20	Age 0-6 – 74% (70/95) Age 7-20 – 26% (25/95)

These references are cited in the Dental Board's Pediatric Anesthesia Study and can be provided upon request

Board Data

Incident reports received by the Board

