Anesthesia Committee Recommendations

At the request of the Utah State Dental Board, a committee was formed to make recommendations to the Board on changes to the existing regulations governing sedation and anesthesia by dentists in Utah.

This committee initially convened on May 19, 2016 and again on November 15, 2016. Both meetings were held at the offices of the Utah Dental Association. The following individuals, all of whom have expertise and advanced training in sedation and/or general anesthesia and are qualified to administer sedation and/or general anesthesia were in attendance at one or both of these meetings:

- Dr. Creed Haymond, Oral & Maxillofacial Surgery
- Dr. Brent Larson, General Dentistry
- Dr. Matt Larson, General Dentistry
- Dr. Jason Horgesheimer, Pediatric Dentistry
- Dr. Michael Gladwell, Oral & Maxillofacial Surgery
- Dr. Michael Slater, General Dentistry
- Dr. David Gutzman, Dental Anesthesiology
- Dr. Richard Engar, General Dentistry and PIE representative
- Dr. Shane Jessen, Oral & Maxillofacial Surgery
- Dr. Hans Reinemer, Pediatric Dentistry
- Dr. Mark Ryser, Oral & Maxillofacial Surgery
- Mr. James Benson, Certified Registered Nurse Anesthetist
- Dr. Mike Broadbent, Oral & Maxillofacial Surgery

The following were invited to participate on the committee but were unable to attend any meetings:
The premise upon which this committee was organized and upon which it has operated is for the protection of the patient. No consideration was given by any member to represent or protect their particular specialty or mode of practice, but to give trained, qualified and experienced perspective to the process of creating recommendations to the board that will protect the public and increase the safety of patients undergoing dental procedures under sedation or general anesthesia in Utah. No other agendas were in force in creating these recommendations. These recommendations will help ensure that all practitioners holding sedation and anesthesia permits will practice standard of care sedation and anesthesia, are properly trained and qualified, will practice only within the scope of their training, qualification and permit class, will have appropriate mandatory equipment and supplies and be trained in their use, maintain their qualification and continually advance their training in the discipline of sedation and anesthesia, thus increasing the safety of sedation and anesthesia in the dental office in Utah administered by qualified practitioners. This will also create appropriate governmental and organizational oversight of practitioners administering sedation or anesthesia, while allowing any dentist in Utah to administer anxiolysis, sedation or general anesthesia by becoming qualified and continuing to be qualified to do so.

After months of considerable discussion, deliberation and counseling on the issues of sedation and anesthesia in dental offices by the above named committee members, a unanimous consensus was reached on the following recommendations which are proposed to the Utah State Dental Board for adoption and for changes to the rules and regulations governing sedation and anesthesia by dentists in the State of Utah.

1. **Creation of a new permit class** for enteral sedation divided into three sub classes.

   **Class II:** For providing anxiolysis only, utilizing Nitrous Oxide alone or in combination with appropriately dosed oral Diazepam, or appropriately dosed oral Diazepam alone. No other anxiolytic or sedative drugs may be administered alone or in combination with these drugs. **Class IIA:** For administration of oral sedation to adults and teenagers 16 years of age and older who require sedation rather than anxiolysis only. Training requirements for **Class IIA** shall be the adult equivalent of the standards of enteral sedation set forth by the American Academy of Pediatric
Dentistry. **Class IIP:** For administration of oral sedation to children younger than 16 years of age as well as patients 16 years of age and older including adults. Training requirements for Class IIP shall be equivalent to the standards of enteral sedation training set forth by the American Academy of Pediatric Dentistry. A class IIP permit shall be required to administer oral sedation to any child under the age of 16.

2. **Continuing Education:** 16 hours of anesthesia/sedation specific continuing education per license cycle for anesthesia classes IIA, IIP, III and IV permit holders will be required to renew anesthesia permits. These must be qualified anesthesia/sedation specific CE course hours and must be reported with course certificates each license cycle. 8 of the 16 required hours may be applied to the 30 hours now required to maintain a dental license. All anesthesia permits are valid for two years only and must be renewed every two years with renewal of the license to practice Dentistry. Permits for sedation and anesthesia will not be renewed if the anesthesia specific continuing education hours are not completed and certificates of completion are not submitted upon application for renewal of the permit.

3. **Establish a fee,** to be determined by the Board, to offset administrative costs of monitoring compliance. This will be due at the time of application for renewal.

4. **Minimum number of procedures:** Each class IIA, class IIP, class III and class IV permit holder must administer sedation or general anesthesia to at least 30 separate patients per license cycle to renew their anesthesia permit. A written statement, certifying under penalty of perjury that sedation or general anesthesia was administered by the license holder to at least 30 patients over the prior two year period must be submitted with permit renewal application. For those practitioners in full time academic practice, the 30 cases may be in a supervisory role. Those in part time academic practice who treat patients outside of the teaching institution must meet the 30 required cases. If a permit holder is performing a dental procedure, and the sedation or general anesthesia is being administered by a separate, qualified practitioner, 15 of the required 30 cases will qualify toward the 30 required cases. The remaining 15 cases must be administered by the permit holder. If any permit holder fails to administer sedation or general anesthesia to at least 30 patients within the above stated requirements, the permit will not be renewed and he or she must attend sedation/ anesthesia specific continuing education consistent with half the total number of didactic hours needed to originally obtain the permit class held in order to renew the anesthesia permit.
5. **Remediation** for those who have permits, but have not administered any sedation or general anesthesia for a specified period of time is as follows:

   **For 2 years** - Anesthesia/ sedation specific CE hours consisting of half the total number of didactic hours needed to originally obtain the permit class held.

   **For 2-5 years** - Anesthesia/ sedation specific CE hours consisting of the same number of didactic hours needed to obtain the permit class held.

   **For over 5 years** - Full recertification for whatever permit class is sought.

6. **Office anesthesia evaluation** every 5 years for class IIA, class IIb, class III and class IV permit holders to maintain permit. Appropriate fee would be collected to cover cost of random evaluations by designated permit holders.

7. **Monitors** required for sedation and general anesthesia
   - Automatic blood pressure.
   - Pulse oximetry
   - End-tidal CO2 and Precordial stethoscope. Both are recommended.
     (Please see appendix A for ADA statement on monitoring ventilation and for discussion on implications and potential revision of this requirement)
   - EKG
     - If under light or moderate sedation, blood pressure, oxygen saturation and ventilation must be monitored. EKG is recommended additionally.
     - If under deep sedation or general anesthesia, EKG monitoring must be used in addition to all of the above listed monitors.

8. **Required equipment** (appropriately sized) to be in clinic facility while performing enteral or IV sedation or general anesthesia:
Class II
- Positive pressure oxygen delivery system
- Oral and nasal airways of appropriate sizes

Classes IIA, IIB, III and IV:
- Positive pressure oxygen delivery system
- Oral and nasal airways of appropriate sizes
- Endotracheal tubes or LMAs of appropriate sizes
- PALS or ACLS drugs and IV supplies
- AED or defibrillator (recommended)
- AED or defibrillator required for moderate and deep sedation and GA.

All offices:
- Adequate suction including back up suction
- Adequate lighting including back up lighting

9. **A pre-operative medical assessment** must be completed by the dentist who will be performing the sedation or anesthesia and be documented in the patient record prior to the procedure, including: physical exam, medical history, medications, allergies, BMI, alcohol, tobacco and drug use, obstructive sleep apnea and/or use of C-pap, ASA classification and malampatti classification. It is the responsibility of the dentist administering the sedation or general anesthesia to make a professional judgment as to whether the patient can safely be sedated, placed under anesthesia or administered anxiolysis based on the pre-operative assessment. If it is determined that it is not safe to administer anxiolysis, sedation or general anesthesia to a patient, the anxiolysis, sedation or general anesthesia shall not be administered and alternate modalities of treating the patient must be chosen.

10. **Maintain requirement** for ACLS or PALS and BLS certification for all class IIA, IIB, III and IV permit holders and BLS certification for all assistants participating in the procedure. These certifications must be kept current. BLS certification required for class II and for those obtaining and maintaining a Dental license without a permit for anxiolysis, sedation or general anesthesia.

11. **No grandfathering** of existing permit holders.
12. Recommend anesthesia assistant training for all assistants involved in sedation, anesthesia and recovery.

13. ACLS or PALS certification and recertification CE hours will be accepted as accredited CE hours required for renewal of Dental license, but shall not be accepted as part of the 16 required anesthesia/sedation specific CE hours required for permit cycle.

14. Any practitioner who performs dental procedures while sedation or general anesthesia is administered by a separate, qualified practitioner must have current ACLS or PALS certification.

Currently, Utah is significantly lacking in requirements and regulations governing administration of anxiolysis, sedation and general anesthesia in the dental office, with little oversight and no requirement for maintaining qualification through continuing education and experience. Utah should be a leader in this area.

It is essential to recognize that the right to perform procedures granted with a license to practice dentistry, medicine, nursing, hygiene or any other profession does not grant the right or privilege to perform procedures that the individual is not qualified to perform. No degree qualifies a practitioner to perform any and all procedures that fall under the license for that degree. We need only look at medicine to better understand this principle. An obstetrician is licensed, but not qualified to perform neurosurgery, and an orthopedic surgeon is licensed, but not qualified to perform open heart surgery or treat psychiatric patients. Neither is a urologist qualified to treat leukemia, though he or she is licensed to do so. No hospital or clinic would ever grant privileges to any physician to perform procedures or render treatment that they are licensed to provide, but not qualified to provide. And no court or professional organization would uphold a licensed, but unqualified practitioner in a claim against them for practicing outside of their qualifications. All physicians including oral and maxillofacial surgeons have to re-credential every procedure or treatment they perform as well as their qualification to perform such procedures every two years at every hospital they practice within. Those requesting privileges for procedural sedation within the hospital must not only re-credential, but must re-certify every year to maintain that privilege. Dentistry is no different.
Thus it is upon us to ensure that all dentists administering anxiolysis, sedation and general anesthesia in dental offices in the State of Utah are not only licensed, but are qualified to safely do so. These recommendations will ensure that all practitioners are indeed qualified to administer sedation and anesthesia, that ongoing qualification is maintained, that standards of care are mandated and maintained, that the State will maintain proper oversight for protection of the public and that no dentist in Utah will be excluded from or unable to administer anxiolysis, sedation or anesthesia. We unanimously feel that these recommendations are reasonable and well thought out after months of consideration and deliberation by experts in sedation and anesthesia and that they are vitally and critically important to protect the public and provide safe access to care. We also feel that none of these recommendations are onerous, difficult or unreasonably expensive and that any dentist in Utah who desires to provide anxiolysis, sedation or general anesthesia may do so.

We as a committee urge the Board to consider these recommendations with sobriety and due attention in the sacred duty of protecting the public and increasing access of safe care to all Utahns. These recommendations will not only create a standard of care that will allow more people to access safe care, but will also set standards for others to follow. We thank the board for allowing us the opportunity to serve in this capacity and offer ourselves as continued resources at your disposal to answer questions, help formulate language, or help in any way you may need as you consider these recommendations and create new and revised rules and regulations for sedation and anesthesia in dental offices.
Appendix A

"The dentist must monitor ventilation and/or breathing by monitoring end-tidal CO2 unless precluded or invalidated by the nature of the patient, procedure or equipment. In addition, ventilation should be monitored by continual observation of qualitative signs, including chest excursion and auscultation of breath sounds with a precordial or pretracheal stethoscope."

This statement was adopted in the October 2016 ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists.
I. Introduction

The administration of local anesthesia, sedation and general anesthesia is an integral part of dental practice. The American Dental Association is committed to the safe and effective use of these modalities by appropriately educated and trained dentists. The purpose of these guidelines is to assist dentists in the delivery of safe and effective sedation and anesthesia.

Dentists must comply with their state laws, rules and/or regulations when providing sedation and anesthesia and will only be subject to Section III. Educational Requirements as required by those state laws, rules and/or regulations.

Level of sedation is entirely independent of the route of administration. Moderate and deep sedation or general anesthesia may be achieved via any route of administration and thus an appropriately consistent level of training must be established.

For children, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.

II. Definitions

Methods of Anxiety and Pain Control

minimal sedation (previously known as anxiolysis) - a minimally depressed level of consciousness, produced by a pharmacological method, that retains the patient’s ability to independently and continuously maintain an airway and respond normally to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.

Patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

The following definitions apply to administration of minimal sedation:

maximum recommended dose (MRD) - maximum FDA-recommended dose of a drug, as printed in FDA-approved labeling for unmonitored home use.

dosing for minimal sedation via the enteral route — minimal sedation may be achieved by the administration of a drug, either singly or in divided doses, by the enteral route to achieve the desired clinical effect, not to exceed the maximum recommended dose (MRD).

The administration of enteral drugs exceeding the maximum recommended dose during a single appointment is considered to be moderate sedation and the moderate sedation guidelines apply.

Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia.
If more than one enteral drug is administered to achieve the desired sedation effect, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation must apply.

**Note:** In accord with this particular definition, the drug(s) and/or techniques used should carry a margin of safety wide enough never to render unintended loss of consciousness. The use of the MRD to guide dosing for minimal sedation is intended to create this margin of safety.

**moderate sedation** - a drug-induced depression of consciousness during which patients respond *purposefully* to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.1

**Note:** In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Repeated dosing of an agent before the effects of previous dosing can be fully appreciated may result in a greater alteration of the state of consciousness than is the intent of the dentist. Further, a patient whose only response is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate sedation.

The following definition applies to the administration of moderate or greater sedation:

**titration** - administration of incremental doses of an intravenous or inhalation drug until a desired effect is reached. Knowledge of each drug’s time of onset, peak response and duration of action is essential to avoid over sedation. Although the concept of titration of a drug to effect is critical for patient safety, when the intent is moderate sedation one must know whether the previous dose has taken full effect before administering an additional drug increment.

**deep sedation** - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function may be impaired.

**general anesthesia** - a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage the physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.1

For all levels of sedation, the qualified dentist must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

**Routes of Administration**

**enteral** - any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa [i.e., oral, rectal, sublingual].

**parenteral** - a technique of administration in which the drug bypasses the gastrointestinal (GI) tract [i.e., intramuscular (IM), intravenous (IV), intranasal (IN), submucosal (SM), subcutaneous (SC), intraosseous (IO)].
transdermal - a technique of administration in which the drug is administered by patch or iontophoresis through skin.

transmucosal - a technique of administration in which the drug is administered across mucosa such as intranasal, sublingual, or rectal.

inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the lungs and whose primary effect is due to absorption through the gas/blood interface.

Terms

analgesia – the diminution or elimination of pain.

local anesthesia - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug.

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents.

qualified dentist - a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations.

operating dentist – dentist with primary responsibility for providing operative dental care while a qualified dentist or independently practicing qualified anesthesia healthcare provider administers minimal, moderate or deep sedation or general anesthesia.

competency – displaying special skill or knowledge derived from training and experience.

must/shall - indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

should - indicates the recommended manner to obtain the standard; highly desirable.

may - indicates freedom or liberty to follow a reasonable alternative.

 continual - repeated regularly and frequently in a steady succession.

continuous - prolonged without any interruption at any time.

time-oriented anesthesia record - documentation at appropriate time intervals of drugs, doses and physiologic data obtained during patient monitoring.

immediately available – on site in the facility and available for immediate use.
American Society of Anesthesiologists (ASA) Patient Physical Status Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
<th>Examples, including but not limited to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA I</td>
<td>A normal healthy patient</td>
<td>Healthy, non-smoking, no or minimal alcohol use</td>
</tr>
<tr>
<td>ASA II</td>
<td>A patient with mild systemic disease</td>
<td>Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy, obesity (30 &lt; BMI &lt; 40), well-controlled DM/HTN, mild lung disease</td>
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<tr>
<td>ASA III</td>
<td>A patient with severe systemic disease</td>
<td>Substantive functional limitations; One or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, *ESRD undergoing regularly scheduled dialysis, premature infant PCA &lt; 60 weeks, history (&gt;3 months) of MI, CVA, TIA, or CAD/stents.</td>
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<tr>
<td>ASA IV</td>
<td>A patient with severe systemic disease that is a constant threat to life</td>
<td>Examples include (but not limited to): recent (&lt; 3 months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or *ESRD not undergoing regularly scheduled dialysis</td>
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<tr>
<td>ASA V</td>
<td>A moribund patient who is not expected to survive without the operation</td>
<td>Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction</td>
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<tr>
<td>ASA VI</td>
<td>A declared brain-dead patient whose organs are being removed for donor purposes</td>
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*The addition of “E” denotes Emergency surgery: (An emergency is defined as existing when delay in treatment of the patient would lead to a significant increase in the threat to life or body part)

American Society of Anesthesiologists Fasting Guidelines

<table>
<thead>
<tr>
<th>Ingested Material</th>
<th>Minimum Fasting Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear liquids</td>
<td>2 hours</td>
</tr>
<tr>
<td>Breast milk</td>
<td>4 hours</td>
</tr>
<tr>
<td>Infant formula</td>
<td>6 hours</td>
</tr>
<tr>
<td>Nonhuman milk</td>
<td>6 hours</td>
</tr>
<tr>
<td>Light meal</td>
<td>6 hours</td>
</tr>
<tr>
<td>Fatty meal</td>
<td>8 hours</td>
</tr>
</tbody>
</table>

III. Educational Requirements

A. Minimal Sedation

1. To administer minimal sedation the dentist must demonstrate competency by having successfully completed:

   a. training in minimal sedation consistent with that prescribed in the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students,
or

b. comprehensive training in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students at the time training was commenced,

or

c. an advanced education program accredited by the Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage minimal sedation commensurate with these guidelines;

and

d. a current certification in Basic Life Support for Healthcare Providers.

2. Administration of minimal sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

B. Moderate Sedation

1. To administer moderate sedation, the dentist must demonstrate competency by having successfully completed:

   a. a comprehensive training program in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students at the time training was commenced,

   or

   b. an advanced education program accredited by the Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage moderate sedation commensurate with these guidelines;

   and

   c. 1) A current certification in Basic Life Support for Healthcare Providers and

   2) Either current certification in Advanced Cardiac Life Support (ACLS or equivalent) or completion of an appropriate dental sedation/anesthesia emergency management course on the same recertification cycle that is required for ACLS.

2. Administration of moderate sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

C. Deep Sedation or General Anesthesia

1. To administer deep sedation or general anesthesia, the dentist must demonstrate competency by having completed:

   a. An advanced education program accredited by the Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage deep sedation or general anesthesia, commensurate with Part IV.C of these guidelines;

   and
b. 1) A current certification in Basic Life Support for Healthcare Providers and
2) either current certification in Advanced Cardiac Life Support (ACLS or equivalent) or completion of an
appropriate dental sedation/anesthesia emergency management course on the same re-certification cycle that is
required for ACLS.

2. Administration of deep sedation or general anesthesia by another qualified dentist or independently practicing
qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current
certification in Basic Life Support (BLS) Course for the Healthcare Provider.

IV. Clinical Guidelines

A. Minimal sedation

1. Patient History and Evaluation

Patients considered for minimal sedation must be suitably evaluated prior to the start of any sedative
procedure. In healthy or medically stable individuals (ASA I, II) this should consist of a review of their current
medical history and medication use. In addition, patients with significant medical considerations (ASA III, IV)
may require consultation with their primary care physician or consulting medical specialist.

2. Pre-Operative Evaluation and Preparation

• The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with
the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.
• Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive
pressure must be completed.
• An appropriate focused physical evaluation should be performed.
• Baseline vital signs including body weight, height, blood pressure, pulse rate, and respiration rate must be
obtained unless invalidated by the nature of the patient, procedure or equipment. Body temperature
should be measured when clinically indicated.
• Preoperative dietary restrictions must be considered based on the sedative technique prescribed.
• Pre-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian
or care giver.

3. Personnel and Equipment Requirements

Personnel:
• At least one additional person trained in Basic Life Support for Healthcare Providers must be present in
addition to the dentist.

Equipment:
• A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately
available.
• Documentation of compliance with manufacturers’ recommended maintenance of monitors, anesthesia
delivery systems, and other anesthesia-related equipment should be maintained. A pre-procedural check
of equipment for each administration of sedation must be performed.
• When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and
calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less
than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible
alarm.
• An appropriate scavenging system must be available if gases other than oxygen or air are used.
4. Monitoring and Documentation

Monitoring: A dentist, or at the dentist’s direction, an appropriately trained individual, must remain in the operatory during active dental treatment to monitor the patient continuously until the patient meets the criteria for discharge to the recovery area. The appropriately trained individual must be familiar with monitoring techniques and equipment. Monitoring must include:

Consciousness:
- Level of sedation (e.g., responsiveness to verbal commands) must be continually assessed.

Oxygenation:
- Oxygen saturation by pulse oximetry may be clinically useful and should be considered.

Ventilation:
- The dentist and/or appropriately trained individual must observe chest excursions.
- The dentist and/or appropriately trained individual must verify respirations.

Circulation:
- Blood pressure and heart rate should be evaluated pre-operatively, post-operatively and intraoperatively as necessary (unless the patient is unable to tolerate such monitoring).

Documentation: An appropriate sedative record must be maintained, including the names of all drugs administered, time administered and route of administration, including local anesthetics, dosages, and monitored physiological parameters.

5. Recovery and Discharge

- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The qualified dentist or appropriately trained clinical staff must monitor the patient during recovery until the patient is ready for discharge by the dentist.
- The qualified dentist must determine and document that level of consciousness, oxygenation, ventilation and circulation are satisfactory prior to discharge.
- Post-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian or care giver.

6. Emergency Management

- If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient returns to the intended level of sedation.
- The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of minimal sedation and providing the equipment and protocols for patient rescue.

B. Moderate Sedation

1. Patient History and Evaluation

Patients considered for moderate sedation must undergo an evaluation prior to the administration of any sedative. This should consist of at least a review at an appropriate time of their medical history and
medication use and NPO (nothing by mouth) status. In addition, patients with significant medical considerations (e.g., ASA III, IV) should also require consultation with their primary care physician or consulting medical specialist. Assessment of Body Mass Index (BMI) should be considered part of a pre-procedural workup. Patients with elevated BMI may be at increased risk for airway associated morbidity, particularly if in association with other factors such as obstructive sleep apnea.

2. Pre-operative Evaluation and Preparation

- The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- An appropriate focused physical evaluation must be performed.
- Baseline vital signs including body weight, height, blood pressure, pulse rate, respiration rate, and blood oxygen saturation by pulse oximetry must be obtained unless precluded by the nature of the patient, procedure or equipment. Body temperature should be measured when clinically indicated.
- Pre-operative verbal or written instructions must be given to the patient, parent, escort, legal guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.

3. Personnel and Equipment Requirements

Personnel:
- At least one additional person trained in Basic Life Support for Healthcare Providers must be present in addition to the dentist.

Equipment:
- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- Documentation of compliance with manufacturers’ recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should be maintained. A pre-procedural check of equipment for each administration of sedation must be performed.
- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- The equipment necessary for monitoring end-tidal CO2 and auscultation of breath sounds must be immediately available.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.
- The equipment necessary to establish intravascular or intraosseous access should be available until the patient meets discharge criteria.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering moderate sedation must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. When active treatment concludes and the patient recovers to a minimally sedated level a qualified auxiliary may be directed by the dentist to remain with the patient and continue to monitor them as explained in the guidelines until they are discharged from the facility. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:
Consciousness:
- Level of sedation (e.g., responsiveness to verbal command) must be continually assessed.

Oxygenation:
- Oxygen saturation must be evaluated by pulse oximetry continuously.

Ventilation:
- The dentist must observe chest excursions continually.
- The dentist must monitor ventilation and/or breathing by monitoring end-tidal CO₂ unless precluded or invalidated by the nature of the patient, procedure or equipment. In addition, ventilation should be monitored by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.

Circulation:
- The dentist must continually evaluate blood pressure and heart rate unless invalidated by the nature of the patient, procedure or equipment and this is noted in the time-oriented anesthesia record.
- Continuous ECG monitoring of patients with significant cardiovascular disease should be considered.

Documentation:
- Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics, dosages and monitored physiological parameters.
- Pulse oximetry, heart rate, respiratory rate, blood pressure and level of consciousness must be recorded continually.

5. Recovery and Discharge
- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The qualified dentist or appropriately trained clinical staff must continually monitor the patient’s blood pressure, heart rate, oxygenation and level of consciousness.
- The qualified dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge.
- Post-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian or care giver.
- If a pharmacological reversal agent is administered before discharge criteria have been met, the patient must be monitored for a longer period than usual before discharge, since re-sedation may occur once the effects of the reversal agent have waned.

6. Emergency Management
- If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient is returned to the intended level of sedation.
- The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of moderate sedation and providing the equipment, drugs and protocol for patient rescue.
C. Deep Sedation or General Anesthesia

1. Patient History and Evaluation

Patients considered for deep sedation or general anesthesia must undergo an evaluation prior to the administration of any sedative. This must consist of at least a review of their medical history and medication use and NPO (nothing by mouth) status. In addition, patients with significant medical considerations (e.g., ASA III, IV) should also require consultation with their primary care physician or consulting medical specialist. Assessment of Body Mass Index (BMI) should be considered part of a pre-procedural workup. Patients with elevated BMI may be at increased risk for airway associated morbidity, particularly if in association with other factors such as obstructive sleep apnea.

2. Pre-operative Evaluation and Preparation

- The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative or anesthetic agents and informed consent for the proposed sedation/anesthesia must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- A focused physical evaluation must be performed as deemed appropriate.
- Baseline vital signs including body weight, height, blood pressure, pulse rate, respiration rate, and blood oxygen saturation by pulse oximetry must be obtained unless invalidated by the patient, procedure or equipment. In addition, body temperature should be measured when clinically appropriate.
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.
- An intravenous line, which is secured throughout the procedure, must be established except as provided in part IV. C.6. Special Needs Patients.

3. Personnel and Equipment Requirements

Personnel: A minimum of three (3) individuals must be present.

- A dentist qualified in accordance with part III. C. of these Guidelines to administer the deep sedation or general anesthesia.
- Two additional individuals who have current certification of successfully completing a Basic Life Support (BLS) Course for the Healthcare Provider.
- When the same individual administering the deep sedation or general anesthesia is performing the dental procedure, one of the additional appropriately trained team members must be designated for patient monitoring.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- Documentation of compliance with manufacturers' recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should be maintained. A pre-procedural check of equipment for each administration must be performed.
- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
• An appropriate scavenging system must be available if gases other than oxygen or air are used.
• The equipment necessary to establish intravenous access must be available.
• Equipment and drugs necessary to provide advanced airway management, and advanced cardiac life support must be immediately available.
• The equipment necessary for monitoring end-tidal CO₂ and auscultation of breath sounds must be immediately available.
• Resuscitation medications and an appropriate defibrillator must be immediately available.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering deep sedation or general anesthesia must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:

**Oxygenation:**
• Oxygenation saturation must be evaluated continuously by pulse oximetry.

**Ventilation:**
• Intubated patient: End-tidal CO₂ must be continuously monitored and evaluated.
• Non-intubated patient: End-tidal CO₂ must be continually monitored and evaluated unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation should be monitored and evaluated by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.
• Respiration rate must be continually monitored and evaluated.

**Circulation:**
• The dentist must continuously evaluate heart rate and rhythm via ECG throughout the procedure, as well as pulse rate via pulse oximetry.
• The dentist must continually evaluate blood pressure.

**Temperature:**
• A device capable of measuring body temperature must be readily available during the administration of deep sedation or general anesthesia.
• The equipment to continuously monitor body temperature should be available and must be performed whenever triggering agents associated with malignant hyperthermia are administered.

**Documentation:**
• Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics and monitored physiological parameters.
• Pulse oximetry and end-tidal CO₂ measurements (if taken), heart rate, respiratory rate and blood pressure must be recorded continually.

5. Recovery and Discharge

• Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
• The dentist or clinical staff must continually monitor the patient’s blood pressure, heart rate, oxygenation and level of consciousness.
• The dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge.
• Post-operative verbal and written instructions must be given to the patient; and parent, escort, guardian or care giver.

6. Special Needs Patients

Because many dental patients undergoing deep sedation or general anesthesia are mentally and/or physically challenged, it is not always possible to have a comprehensive physical examination or appropriate laboratory tests prior to administering care. When these situations occur, the dentist responsible for administering the deep sedation or general anesthesia should document the reasons preventing the recommended preoperative management.

In selected circumstances, deep sedation or general anesthesia may be utilized without establishing an indwelling intravenous line. These selected circumstances may include very brief procedures or periods of time, which, for example, may occur in some patients; or the establishment of intravenous access after deep sedation or general anesthesia has been induced because of poor patient cooperation.

7. Emergency Management

The qualified dentist is responsible for sedative/anesthetic management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of deep sedation or general anesthesia and providing the equipment, drugs and protocols for patient rescue.

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1 Excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014, of the American Society of Anesthesiologists (ASA)
2 ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, Updated by ASA House of Delegates, October 15, 2014.
4 Standardized BMI category definitions can be obtained from the Centers for Disease Control and Prevention or the American Society of Anesthesiologists.