

Subject: Moderate to Deep Anesthesia Services for Dental Surgery in the Facility Setting

Guideline #: CG-MED-41

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Description

This document addresses the use of moderate to deep anesthesia services utilized in the facility setting when used to treat individuals undergoing dental procedures. This **excludes** the office setting.

Note: Please see the following related document for additional information:

- [CG-SURG-10 Ambulatory or Outpatient Surgery Center Procedures](#)

Clinical Indications

Medically Necessary:

- I. The use of moderate to deep anesthesia services in conjunction with the delivery of dental services in the facility setting is considered **medically necessary** when the following criteria have been met:
 - A. When extensive surgical procedures are required;**and**
 - B. Submitted documentation (including narrative, radiographs, etc.) demonstrates the presence of any of the following circumstances:
 1. Hospitalized individuals;**or**
 2. Children under 6 years of age;**or**
 3. Individuals classified by the American Society of Anesthesiologists (ASA) as class III or class IV;**or**
 4. Individuals classified with a Mallampati score of 3 or 4;**or**
 5. Individuals with a medical history of uncontrolled bleeding, severe cerebral palsy, or another medical condition that renders in-office treatment not medically appropriate;**or**
 6. Individuals who have documentation of significant behavioral health conditions or psychiatric disorders that require special treatment (for example, severe panic disorder); **or**
 7. Cognitively disabled individuals whose prior history indicates hospitalization is appropriate.
- II. The use of moderate to deep anesthesia services in conjunction with the delivery of dental services in the facility setting is considered **medically necessary** for medically compromised individuals when submitted documentation (including narrative, radiographs, etc.) demonstrates the potential changes in the individual's clinical condition are such that immediate access to specific services of a medical center/hospital setting, having emergency resuscitation equipment and personnel, and inpatient admission or intensive care is necessary, for example, the individual is at significant risk of sudden life-threatening changes in medical status based on clinical conditions.
- III. The use of moderate to deep anesthesia services in conjunction with the delivery of dental services in the facility setting is considered **medically necessary** for individuals with severe developmental, behavioral, or intellectual conditions that prevent the safe and effective delivery of dental services in another setting.

Not Medically Necessary:

The use of moderate to deep anesthesia services in conjunction with the delivery of dental services in the facility setting is considered **not medically necessary** when the above criteria have not been met, including but not limited to routine treatment of dental carries and non-impacted third molar extractions in the absence of other criteria listed above.

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services may be Medically Necessary when criteria are met:

CPT

00170	Anesthesia for intraoral procedures, including biopsy; not otherwise specified
99151	Moderate sedation services provided by the same physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient's level of consciousness and physiological status; initial 15 minutes of intraservice time, patient younger than 5 years of age
99152	Moderate sedation services provided by the same physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient's level of consciousness and physiological status; initial 15 minutes of intraservice time, patient age 5 years or older
99153	Moderate sedation services provided by the same physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient's level of consciousness and physiological status; each additional 15 minutes of intraservice time

99155	Moderate sedation services provided by a physician or other qualified health care professional other than the physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports; initial 15 minutes of intraservice time, patient younger than 5 years of age
99156	Moderate sedation services provided by a physician or other qualified health care professional other than the physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports; initial 15 minutes of intraservice time, patient age 5 years or older
99157	Moderate sedation services provided by a physician or other qualified health care professional other than the physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports; each additional 15 minutes of intraservice time

HCPCS

D9222	Deep sedation/general anesthesia first 15 minutes
D9223	Deep sedation/general anesthesia – each subsequent 15 minute increment
G0330	Facility services for dental rehabilitation procedure(s) performed on a patient who requires monitored anesthesia (e.g., general, intravenous sedation (monitored anesthesia care) and use of an operating room

ICD-10 Diagnosis

K00.0-K00.9	Disorders of tooth development and eruption
K01.0-K01.1	Embedded and impacted teeth
K02.3-K02.9	Dental caries
K03.0-K03.9	Other diseases of hard tissues of teeth
K04.01-K04.99	Diseases of pulp and periapical tissues
K05.00-K05.6	Gingivitis and periodontal diseases
K06.010-K06.9	Other disorders of gingiva and edentulous alveolar ridge
K08.0-K08.9	Other disorders of teeth and supporting structures
M26.70-M26.79	Dental alveolar anomalies
M26.81-M26.89	Other dentofacial anomalies

When services are Not Medically Necessary:

For the procedure and diagnosis codes listed above when criteria are not met or for situations designated in the Clinical Indications section as not medically necessary.

Note: The following list of anesthesia service modifiers is for informational purposes:

<i>CPT Physical Status Modifiers</i>	
P1	A normal healthy patient (Class I)
P2	A patient with mild systemic disease (Class II)
P3	A patient with severe systemic disease (Class III)
P4	A patient with severe systemic disease that is a constant threat to life (Class IV)
<i>HCPCS Anesthesia Modifiers</i>	
G8	Monitored anesthesia care (MAC) for deep complex, complicated, or markedly invasive surgical procedure
G9	Monitored anesthesia care for patient who has history of severe cardio-pulmonary condition
QS	Monitored anesthesia care service

Discussion/General Information

The decision of where to conduct dental procedures is based on a wide variety of factors, including the health of the individual and the type of procedure planned. These factors will determine the type of anesthesia used during the procedure. Usually for routine procedures in healthy individuals, the dental or oral surgeon's office is an appropriate site. Alternatively, for complex procedures or for unhealthy individuals, a hospital operating room may be appropriate. For many individuals and procedures, other places of service, such as outpatient surgery centers, may be appropriate. This is because the risk of surgical and anesthesia complications increases with decreasing health of the individual and an increasing level of procedural complexity. As the risk of complications increases, so does the need for the appropriate equipment, personnel and other resources to deal with them should they occur. Higher level facilities such as outpatient surgical centers are more able to deal with adverse events because they are properly equipped with trained personnel and the tools and medications which may be required.

The fear of dental procedures is considered one of the main reasons why many individuals avoid dental treatment. In the United States, it has been estimated that approximately 6 to 14 percent of the population will avoid seeking dental treatment because of fear. However, even in the absence of painful stimuli, many individuals will still experience high anxiety (de Moares, 2019).

The goal of anesthesia during dental procedures, including tooth extractions and reconstructions, is to control and mitigate the incidence of pain, fear, and anxiety during the procedure. There are a wide variety of medications available that can be used to meet these goals, each with its own benefits and risks. These medications range from local anesthetics to numb the area being treated to full general anesthesia that places the individual unconscious and immobilized. The selection of the appropriate medications to be used in any given situation is based on many factors, including the health and mental state of the individual as well as the extent of the proposed procedure. Generally, the more complex the procedure the more sedation and pain control needed, and the stronger medications that are required. This needs to be balanced with the frequently not-insignificant risks posed by the more powerful medications due to their interactions with various health conditions which may be adversely affected by their use. Conversely, some individuals with serious health conditions may require stronger medications than healthier individuals to allow doctors to conduct necessary procedures in a safe and effective manner.

A randomized clinical trial was performed by de Moares and colleagues (2019) comparing three anxiety management protocols for extraction of third molars. The study included 120 individuals aged 18 to 30 years with an American Society of Anesthesiologists (ASA) classification of I (normal healthy patient). All 120 participants had moderate to severe levels of anxiety according to the Corah Dental Anxiety Scale. A single surgeon extracted a totally impacted third molar in a vertical position for each study participant. The individuals were randomly divided into three groups of 40. Participants in Group I received 5 mg of diazepam orally 30 minutes before the beginning of the surgery. Group II participants received 7.5 mg of midazolam orally 30 minutes before the beginning of surgery. Group III participants received 40 percent nitrous oxide and 60 percent oxygen via inhalation 5 minutes before the beginning of surgery. Differences in the systolic and diastolic blood pressure were slightly lower after 15 minutes of nitrous oxide sedation compared to the other sedation methods. No significant differences were found in the participants' heart rates, oximetry data, or the

retrograde amnesia test. Postoperative anxiety was significantly lower than preoperative anxiety for all sedation techniques. Anxiety reduction was not significantly different in inter-group comparison. The authors concluded that all three preoperative sedation techniques were effective in controlling the dental anxiety with little effect on the individual's vital and retrograde amnesia.

Araujo and colleagues (2021) conducted a systematic review of randomized control trials (RCTs) that compared the oral use of benzodiazepines and other medications with a placebo or other oral agents in adult individuals to evaluate the effectiveness and safety of oral sedation when undergoing dental procedures. A total of 10 studies, with 327 adult participants (58% women) who required dental surgical procedures, met the criteria for analysis. Exclusion criteria included individuals with respiratory diseases, those with contraindications to benzodiazepines, pregnancy or breastfeeding women and those with a history of allergies. Studies that combined the administration of different drugs for oral sedation were also excluded. Due to differences between drugs used across groups, a meta-analysis of the data could not be performed. None of the studies reported sedation outcomes and respiratory rates. The researcher's findings suggest that benzodiazepines and herbal based medicines could be safely used for oral sedation in outpatient dental surgical procedures. The limitations of the study included the number of studies reviewed, different comparisons between the studies and incomplete outcome reporting. The authors noted that further clinical trials should be performed to confirm the effectiveness and safety of the drugs.

Guldiken and colleagues (2021) conducted a prospective double-blind randomized controlled study to investigate the analgesic and respiratory properties of midazolam and dexmedetomidine in conscious sedation during dental implant procedures and to compare these two drugs in terms of ease of use and comfort during the surgical procedure. The participants who needed dental implant surgery were divided into two randomized groups for either midazolam or dexmedetomidine. A total of 163 dental implants were inserted into 43 participants. The following parameters were used: input effect size $d = .88$, α error = .05, power = 0.91, number of groups = 2. The following inclusion criteria was required for participation: scheduled for dental implantation in either the maxilla or mandible, at least 18 years of age, weight below 100 kilograms (kg), dental anxiety and no prior sedation experience. The mean onset of sedation was 10 ± 3 , 16 minutes in the midazolam group ($n=21$) and 17.5 ± 2.99 minutes in the dexmedetomidine group ($n=22$; $P=0.001$). The results showed that participants receiving dexmedetomidine had lower pain, higher satisfaction with the procedure, and less desaturation ($P=0.002$). The onset of sedation was indicated to be quicker with midazolam ($P=0.001$). The mean procedure time for the dexmedetomidine group was 52.09 ± 20.12 minutes and 87.14 ± 26.15 minutes in the midazolam group ($P=0.001$). The researchers concluded that dexmedetomidine is a good alternative to midazolam for conscious sedation during dental implant procedures due to its better analgesic property and minimal respiratory side effects. There were several limitations of the study noted. Limitations cited include the small sample size and subjectivity of pain between the individuals. It was also indicated that the higher ratios of pain in the midazolam group could be due to the longer duration of the procedure. Furthermore, the study was conducted with a generalized population so the results may not be applicable to other population groups.

Authoritative Organization Recommendations

The ASA Physical Status Classification System (2020) is a commonly used tool. This system evaluates the overall health of the individual to identify his or her risk of complications during surgery, and to assist in identifying system-specific health conditions that may require tailored anesthetic regimens to avoid complications and provide the most appropriate care. The ASA classification system is as follows, and is derived by a thorough evaluation of an individual's overall health as assessed by a healthcare provider's review of an individual's health, family history, medications used, diet, and other factors:

- ASA Physical Status I - A normal healthy patient
- ASA Physical Status II - A patient with mild systemic disease
- ASA Physical Status III - A patient with severe systemic disease
- ASA Physical Status IV - A patient with severe systemic disease that is a constant threat to life
- ASA Physical Status V - A moribund patient who is not expected to survive without the operation
- ASA Physical Status VI - A declared brain-dead patient whose organs are being removed for donor purposes

Another tool used by anesthesiologists and other medical providers concerned with upper airway management is the Mallampati score. This score is used to assess oropharyngeal anatomy by gauging the visibility of structures in the oral pharynx, and is used to estimate the difficulty in maintaining upper airway in the event breathing is compromised during medical procedures. The score ranges from complete visualization, including the tonsillar pillars (class 1), to no visualization at all, with the tongue pressed against the hard palate (class 4). Class I and Class 2 predict adequate oral access, Class 3 predicts moderate difficulty, and Class 5 predicts a high degree of difficulty (Mallampati, 1985; Sherwood, 2012). The full scoring schema is below:

- Class 1: Visualization of the soft palate, fauces, uvula, and anterior and posterior pillars.
- Class 2: Visualization of the soft palate, fauces, and uvula.
- Class 3: Visualization of the soft palate and the base of the uvula.
- Class 4: Soft palate not visible at all.

The ASA document "Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia" (2014) provides clear definitions for Moderate and Deep sedation:

- Moderate Sedation/Analgesia ("Conscious Sedation") is 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.
- Deep Sedation/Analgesia is 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 is usually maintained.

** Reflex withdrawal from a painful stimulus is NOT considered a purposeful response.

In 2016 the American Dental Association released a policy statement titled, *The Use of Sedation and General Anesthesia by Dentists*. In this document they stated that moderate sedation was appropriate for individuals with ASA III and IV, and obesity, especially when associated with airway associated morbidity. It was also indicated that deep sedation or general anesthesia may be appropriate for mentally or physically challenged individuals. The document noted that both moderate and deep sedation may be achieved via any route of administration and the level of sedation is independent of the route the medication was administered.

The American Academy of Pediatric Dentistry (AAPD) revised their *Guideline on Behavior Guidance for the Pediatric Dental Patient* in 2020. This document provided the following recommendations:

General anesthesia is indicated for:

- patients who cannot cooperate due to a lack of psychological or emotional maturity and/or mental, physical, or medical disability;

- patients for whom local anesthesia is ineffective because of acute infection, anatomic variations, or allergy;
- the extremely uncooperative, fearful, anxious, or uncommunicative child or adolescent;
- patients requiring significant surgical procedures;
- patients for whom the use of general anesthesia may protect the developing psyche and/or reduce medical risk; and
- patients requiring immediate, comprehensive oral/ dental care.

Contraindications: The use of general anesthesia is contraindicated for:

- a healthy, cooperative patient with minimal dental needs;
- a very young patient with minimal dental needs that can be addressed with therapeutic interventions (e.g., ITR, fluoride varnish) and/or treatment deferral;
- patient/practitioner convenience; and
- predisposing medical conditions which would make general anesthesia inadvisable.

In 2019 the American Academy of Pediatrics and the American Academy of Pediatric Dentistry published their guidelines for monitoring and management of pediatric patients before, during, and after sedation for diagnostic and therapeutic procedures (Coté, 2019). In this document, they indicate that children under the age of 6 warrant special anesthesia care for longer procedures:

The sedation of children is different from the sedation of adults. Sedation in children is often administered to relieve pain and anxiety as well as to modify behavior (eg, immobility) so as to allow the safe completion of a procedure. A child's ability to control his or her own behavior to cooperate for a procedure depends both on his or her chronologic age and cognitive/emotional development. Many brief procedures, such as suture of a minor laceration, may be accomplished with distraction and guided imagery techniques, along with the use of topical/local anesthetics and minimal sedation, if needed. However, longer procedures that require immobility involving children younger than 6 years or those with developmental delay often require an increased depth of sedation to gain control of their behavior. Children younger than 6 years (particularly those younger than 6 months) may be at greatest risk of an adverse event. Children in this age group are particularly vulnerable to the sedating medication's effects on respiratory drive, airway patency, and protective airway reflexes.

The American Association of Oral and Maxillofacial Surgeons (AAOMS) published the Parameters of Care: Clinical Practice Guidelines for Oral and Maxillofacial Surgery for Patient Assessment and Anesthesia in Outpatient Facilities (2012). These documents provide guidance for the selection of anesthetic regimens during oral and maxillofacial surgery as well as a specific guide for the evaluation of individuals undergoing various types of anesthetic regimens. They identify three specific populations of individuals at higher risk of complications due to anesthesia delivery, including pregnant women, children, and those with obesity. These populations present with a significantly higher risk of anesthesia and surgical complications due to physiological and anatomical variations that may affect drug metabolism, access to the upper airway, or in the case of pregnancy, exposure to drugs with poorly studied effects on the fetus. The AAOMS also identifies many health conditions that may impact or be impacted by anesthesia, including asthma, diabetes, cardiac disease, hematologic diseases, and familial risk for malignant hyperthermia. The more powerful drugs in the anesthetic armamentarium may have significant impact on a wide variety of physiologic systems including respiration, heart function and glucose metabolism, which in compromised individuals may temporarily alter the function of the body and increase the risk of adverse events. Identifying individuals with specific health conditions that create susceptibility to complications allows health care providers to choose the most appropriate anesthesia regimen to help avoid anesthesia-related complications as well as the appropriate type of facility to conduct proposed procedures.

Finally, it should be noted, as with any other medical procedure with significant risk of harm, conservative alternatives should be considered prior to the use of moderate to deep anesthesia for young children and individuals with cognitive and behavioral health issues. This includes trials of less invasive alternative procedures, behavioral management methods, and dividing complex procedures into several shorter procedures when possible.

Definitions

Anesthesia services: Medical services wherein the delivery of anesthetic medications and services are delivered. This includes delivery of local and general anesthesia as well as intubation and respiratory support services.

Deep Sedation/Analgesia: Defined by the ASA as "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 is usually maintained."

Dental services: In the case of this document, any surgical procedure involving the oral cavity, mandible or maxilla.

Extensive surgical procedures: Surgical procedures that involve prolonged duration, or removal or surgical attention to a large number of teeth, or require deep excision of periodontal or bone tissue. Examples include, but are not limited to, the following:

- Extraction with mandibular bulbous root;**or**
- Full arch alveoplasty;**or**
- Periodontal flap surgery involving more than one quadrant;**or**
- Placement or removal of two or more dental implants;**or**
- Removal of multiple (greater than two) impacted third molars;**or**
- Removal or surgical exposure of an impacted maxillary canine;**or**
- Surgical extraction of two or more teeth involving more than one quadrant;**or**
- Transplantation or extraction of a tooth from maxillary sinus;**or**
- Treatment of abscesses

Facility setting: A place of service not in the home or physician's office, including outpatient or ambulatory surgery centers (ASC), and hospital-based facility for outpatient care.

Hospitalized individuals: Individuals who are receiving inpatient care.

Medically compromised individuals: Individuals that have serious medical conditions that increase their risk of medical complications.

Moderate Sedation/Analgesia ("Conscious Sedation"): Defined by the ASA as "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."

Restorations: Procedures that are intended to restore an individual's anatomy to normal function and or appearance. This includes but

References

Peer Reviewed Publications:

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Government Agency, Medical Society, and Other Authoritative Publications:

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History

Status	Date	Action
Revised	05/11/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Revised formatting and hierarchy of MN statement. Revised criteria regarding children. Revised formatting of ASA criteria. Updated Discussion/General Information, Definitions, and References sections. Reformatted Coding section and updated diagnosis codes.
	12/28/2022	Updated Coding section with 01/01/2023 HCPCS changes; added HCPCS G0330, removed CPT 41899.
Reviewed	05/12/2022	MPTAC review. Updated Discussion/General Information and References sections.
Reviewed	05/13/2021	MPTAC review. Updated Discussion/General Information and References sections. Reformatted Coding section.
Revised	05/14/2020	MPTAC review. Updated formatting hierarchy in MN section. Updated Coding, Discussion and References sections.
Revised	06/06/2019	MPTAC review. Clarified MN and NMN statements. Added new statement regarding individuals with severe developmental, behavioral, or intellectual conditions. Updated Discussion, Definitions, and References sections.

Reviewed	03/21/2019	MPTAC review. Updated Information, Definitions, and References sections. Updated Coding section; added 41899 for facility charges, D9222-D9223 replacing D9220-D9221 deleted codes]
Reviewed	03/22/2018	MPTAC review. The document header wording updated from "Current Effective Date" to "Publish Date." Updated Discussion/General Information and References sections.
	10/01/2017	Updated Coding section with 10/01/2017 ICD-10-CM diagnosis code changes.
Reviewed	05/04/2017	(MPTAC review. Updated formatting in the Clinical Indications section. Updated References section.
	01/01/2017	Updated Coding section with 01/01/2017 CPT changes; removed codes 99143-99145 and 99148-99150 deleted 12/31/2016.
Reviewed	05/05/2016	MPTAC review. Updated References section. Removed ICD-9 codes from Coding section.
Reviewed	05/07/2015	MPTAC review. Updated References section.
Reviewed	05/15/2014	MPTAC review.
Revised	05/09/2013	MPTAC review. The medically necessary criteria regarding "somatoform disorders" was revised after an additional vote post-MPTAC to replace the term "somatoform disorders" with "significant behavioral health conditions or psychiatric disorders." Updated References section.
New	02/14/2013	MPTAC review. Initial document development.

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Alternatively, commercial or FEP plans or lines of business which determine there is not a need to adopt the guideline to review services generally across all providers delivering services to Plan's or line of business's members may instead use the clinical guideline for provider education and/or to review the medical necessity of services for any provider who has been notified that his/her/its claims will be reviewed for medical necessity due to billing practices or claims that are not consistent with other providers, in terms of frequency or in some other manner.

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