Guideline Summary NGC-7498

Guideline Title
Guideline on use of anesthesia personnel in the administration of office-based deep sedation/general anesthesia to the pediatric dental patient.

Bibliographic Source(s)

Guideline Status
This is the current release of the guideline.

This summary updates a previous version: American Academy of Pediatric Dentistry. Clinical guideline on use of anesthesia-trained personnel in the provision of general anesthesia/deep sedation to the pediatric dental patient. Chicago (IL): American Academy of Pediatric Dentistry; 2001. 2 p. [3 references]

Scope

Disease/Condition(s)
Oral and dental conditions and diseases that require administration of sedation/general anesthesia

Guideline Category
Diagnosis
Evaluation
Management
Treatment

Clinical Specialty
Anesthesiology
Dentistry
Pediatrics

Intended Users
Dentists
Nurses
Physicians

Guideline Objective(s)
• To assist the dental practitioner who elects to use anesthesia personnel for the administration of deep sedation/general anesthesia for pediatric dental patients in a dental office or other facility outside of an accredited hospital or surgicenter
• To discuss personnel, facilities, documentation, and quality assurance mechanisms necessary to provide optimal and responsible patient care

Target Population
Infants, children, adolescents, and persons with special health care needs that require deep sedation or general anesthesia to receive dental treatment

Interventions and Practices Considered
1. Training and credentialing of anesthesia personnel for office based deep sedation/general anesthesia procedures
2. Training of the office staff in emergency procedures
3. Provision of appropriate facilities that comply with applicable laws, codes, and regulations including dental equipment, anesthesia delivery equipment, appropriate monitors and emergency equipment, medications
4. Appropriate documentation related to the procedure including
   • Rationale for sedation/general anesthesia
   • Informed consent
   • Instructions to parent
   • Dietary precautions
Preoperative health evaluation
Medication prescriptions
Vital signs
Recovery
5. Risk management and quality assurance

Major Outcomes Considered
Adverse effects of deep sedation/general anesthesia

Methodology

Methods Used to Collect/Select the Evidence
Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence
The revision of this guideline is based upon a review of current dental and medical literature pertaining to deep sedation/general anesthesia of dental patients, including the 2006 guideline on pediatric sedation co-authored by the American Academy of Pediatrics (AAP) and the American Academy of Pediatric Dentistry (AAPD). A MEDLINE search was performed using the terms “office-based anesthesia,” “pediatric sedation,” and “dental sedation.”

Number of Source Documents
Not stated

Methods Used to Assess the Quality and Strength of the Evidence
Expert Consensus

Rating Scheme for the Strength of the Evidence
Not applicable

Methods Used to Analyze the Evidence
Review

Description of the Methods Used to Analyze the Evidence
Not stated

Methods Used to Formulate the Recommendations
Expert Consensus

Description of Methods Used to Formulate the Recommendations
Clinical guidelines of the American Academy of Pediatric Dentistry (AAPD) are developed under the direction of the Board of Trustees, utilizing the resources and expertise of its membership operating through the Council on Clinical Affairs (CCA).

Proposals to develop or modify guidelines may originate from 4 sources:
1. The officers or trustees acting at any meeting of the Board of Trustees
2. A council, committee, or task force in its report to the Board of Trustees
3. Any member of the AAPD acting through the Reference Committee hearing of the General Assembly at the Annual Session
4. Officers, trustees, council and committee chairs, or other participants at the AAPD’s Annual Strategic Planning Session

Regardless of the source, proposals are considered carefully, and those deemed sufficiently meritorious by a majority vote of the Board of Trustees are referred to the CCA for development or review/revision.

Once a charge (directive from the Board of Trustees) for development or review/revision of a clinical guideline is sent to the CCA, it is assigned to 1 or more members of the CCA for completion. CCA members are instructed to follow the specified format for a guideline. All clinical guidelines are based on 2 sources of evidence: (1) the scientific literature and (2) experts in the field. Members may call upon any expert as a consultant to the council to provide expert opinion. The Council on Scientific Affairs provides input as to the scientific validity of a guideline.

The CCA meets on an interim basis (midwinter) to discuss proposed clinical guidelines. Each new or reviewed/revised guideline is reviewed, discussed, and confirmed by the entire council.

Rating Scheme for the Strength of the Recommendations
Not applicable

Cost Analysis
Method of Guideline Validation
Peer Review

Description of Method of Guideline Validation

Once developed by the Council on Clinical Affairs (CCA), the proposed guideline is submitted for the consideration of the Board of Trustees. While the board may request revision, in which case it is returned to the council for modification, once accepted by majority vote of the board, it is referred for Reference Committee hearing at the upcoming Annual Session. At the Reference Committee hearing, the membership may provide comment or suggestion for alteration of the document before presentation to the General Assembly. The final document then is presented for ratification by a majority vote of the membership present and voting at the General Assembly. If accepted by the General Assembly, either as proposed or as amended by that body, the document then becomes the official American Academy of Pediatric Dentistry (AAPD) clinical guideline for publication in the AAPD’s Reference Manual and on the AAPD’s Web site.

Recommendations

Major Recommendations

Personnel

Office-based deep sedation/general anesthesia techniques require at least 3 individuals. The anesthesia care provider’s responsibilities are to administer drugs or direct their administration and to observe constantly the patient’s vital signs, airway patency, cardiovascular and neurological status, and adequacy of ventilation. In addition to the anesthesia care provider, the operating dentist and other staff shall be trained in emergency procedures.

It is the obligation of treating practitioners, when employing anesthesia personnel to administer deep sedation/general anesthesia, to verify their credentials and experience.

1. The anesthesia care provider must be a licensed dental and/or medical practitioner with appropriate and current state certification for deep sedation/general anesthesia.

2. The anesthesia care provider must have completed a 1- or 2-year dental anesthesia residency or its equivalent, as approved by the American Dental Association (ADA), and/or medical anesthesia residency, as approved by the American Medical Association (AMA).

3. The anesthesia care provider currently must be licensed by and in compliance with the laws of the state in which he/she practices. Laws vary from state to state and may supersede any portion of this document.

4. If state law permits a certified registered nurse anesthetist or anesthesia assistant to function under the supervision of a dentist, the dentist is required to have completed training in deep sedation/general anesthesia and be licensed or permitted, as appropriate to state law.

The dentist and anesthesia care provider must be compliant with the American Academy of Pediatrics/American Academy of Pediatric Dentistry (AAP/AAPD)’s Guideline on Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures or other appropriate guideline(s) of the ADA, AMA, and their recognized specialties. The recommendations in this document may be exceeded at any time if the change involves improved safety and is supported by currently-accepted practice and/or is evidence-based.

The dentist and anesthesia personnel must work together to enhance patient safety. Effective communication is essential. The dentist introduces the concept of deep sedation/general anesthesia to the parent and provides appropriate preoperative instructions and informational materials. The dentist or his/her designee coordinates medical consultations when necessary. The anesthesia care provider explains potential risks and obtains informed consent for sedation/anesthesia. Office staff should understand their additional responsibilities and special considerations (e.g., loss of protective reflexes) associated with office-based deep sedation/general anesthesia.

Advanced training in recognition and management of pediatric emergencies is critical in providing safe sedation and anesthetic care. Although it is appropriate for the most experienced professional (i.e., the anesthesia provider) to assume responsibility in managing anesthesia-related emergencies, the operating dentist and clinical staff need to maintain current expertise in basic life support. An individual experienced in recovery care must be in attendance in the recovery facility until the patient, through continual monitoring, exhibits respiratory and cardiovascular stability and appropriate discharge criteria have been met. In addition, the staff of the treating dentist must be well-versed in rescue and emergency protocols (including cardiopulmonary resuscitation) and have contact numbers for emergency medical services and ambulance services. Emergency preparedness must be updated and practiced on a regular basis.

Facilities

A continuum exists that extends from wakefulness across all levels of sedation. Often these levels are not easily differentiated, and patients may drift through them. When anesthesia care providers are utilized for office-based administration of deep sedation or general anesthesia, the facilities in which the dentist practices must meet the guidelines and appropriate local, state, and federal codes for administration of the deepest possible level of sedation/anesthesia. Facilities also should comply with applicable laws, codes, and regulations pertaining to controlled drug storage, fire prevention, building construction and occupanc'y, accommodations for the disabled, occupational safety and health, and disposal of medical waste and hazardous waste. The treatment room must accommodate the dentist and auxiliaries, the patient, the anesthesia care provider, the dental equipment, and all necessary anesthesia delivery equipment along with appropriate monitors and emergency equipment. Expeditious access to the patient, anesthesia machine (if present), and monitoring equipment should be available at all times.

It is beyond the scope of this document to dictate equipment necessary for the provision of deep sedation/general anesthesia, but equipment must be appropriate for the technique used and consistent with the guidelines for anesthesia providers, in accordance with governmental rules and regulations. Because laws and codes vary from state to state, the Guideline on Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic
and Therapeutic Procedures should be followed as the minimum requirements (see the National Guideline Clearinghouse [NGC] summary of the AAPD guideline, Guidelines for monitoring and management of pediatric patients during and after sedation for diagnostic and therapeutic procedures: an update).

For deep sedation, there shall be continuous monitoring of oxygen saturation and heart rate and intermittent time-based recording of respiratory rate and blood pressure. When adequacy of ventilation is difficult to observe, use of a precordial stethoscope or capnograph is encouraged. An electrocardiographic monitor should be readily available for patients undergoing deep sedation. In addition to the monitors previously mentioned, a temperature monitor and pediatric defibrillator are required for general anesthesia. Emergency equipment must be readily accessible and should include suction, drugs necessary for rescue and resuscitation (including 100% oxygen capable of being delivered by positive pressure at appropriate flow rates for up to 1 hour), and age-/size-appropriate equipment to resuscitate and rescue a nonbreathing and/or unconscious pediatric dental patient and provide continuous support while the patient is being transported to a medical facility. The treatment facility should have medications, equipment, and protocols available to treat malignant hyperthermia when triggering agents are used. Recovery facilities must be available and suitably equipped. Back up power sufficient to ensure patient safety should be available in case of an emergency.

Documentation

Prior to delivery of deep sedation/general anesthesia, patient safety requires that appropriate documentation shall address rationale for sedation/general anesthesia, informed consent, instructions to parent, dietary precautions, preoperative health evaluation, and any prescriptions along with the instructions given for their use. Because laws and codes vary from state to state, the Guideline on Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures should be followed as minimum requirements for a time-based anesthesia record.

1. Vital signs: Pulse and respiratory rates, blood pressure, and oxygen saturation must be monitored and recorded at least every 5 minutes throughout the procedure and at specific intervals until the patient has met documented discharge criteria.
2. Drugs: Name, dose, route, site, time of administration, and patient effect of all drugs, including local anesthesia, must be documented. When anesthetic gases are administered, inspired concentration and duration of inhalation agents and oxygen shall be documented.
3. Recovery: The condition of the patient, that discharge criteria have been met, time of discharge, and into whose care the discharge occurred must be documented. Requiring the signature of the responsible adult to whom the child has been discharged, verifying that he/she has received and understands the post-operative instructions, is encouraged.

Various business/legal arrangements may exist between the treating dentist and the anesthesia provider. Regardless, because services were provided in the dental facility, the dental staff must maintain all patient records, including time-based anesthesia records, so that they may be readily available for emergency or other needs. The dentist must assure that the anesthesia provider also maintains patient records and that they are readily available.

Risk Management and Quality Assurance

Dentists who utilize in-office anesthesia care providers must take all necessary measures to minimize risk to patients. The dentist must be familiar with the American Society of Anesthesiologists (ASA) physical status classification. Knowledge, preparation, and communication between professionals are essential. Prior to subjecting a patient to deep sedation/general anesthesia, the patient must undergo a preoperative health evaluation. High-risk patients should be treated in a facility properly equipped to provide for their care. The dentist and anesthesia care provider must communicate during treatment to share concerns about the airway or other details of patient safety. Furthermore, they must work together to develop and document mechanisms of quality assurance.

Untoward and unexpected outcomes must be reviewed to monitor the quality of services provided. This will decrease risk, allow for open and frank discussions, document risk analysis and intervention, and improve the quality of care for the pediatric dental patient.

Clinical Algorithm(s)

None provided

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

All oral health policies and clinical guidelines are based on 2 sources of evidence: (1) the scientific literature and (2) experts in the field.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits
- Access to care may be improved.
- The treatment may be scheduled more easily and efficiently.
- Facility charges and administrative procedures may be less than those associated with a surgical center.
- Complex or lengthy treatment can be provided comfortably while minimizing patient memory of the dental procedure.
- Movement by the patient is decreased, and the quality of care may be improved.
- The dentist can use his/her customary in-office delivery system with access to supplemental equipment, instrumentation, or supplies should the need arise.
Potential Harms
Complications associated with sedation and anesthesia

Qualifying Statements

Implementation of the Guideline

Description of Implementation Strategy
An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need
Getting Better
Staying Healthy

IOM Domain
Effectiveness
Patient-centeredness
Safety

Identifying Information and Availability

Bibliographic Source(s)

Adaptation
Not applicable: The guideline was not adapted from another source.

Date Released
2001 (revised 2009)

Guideline Developer(s)
American Academy of Pediatric Dentistry - Professional Association

Source(s) of Funding
American Academy of Pediatric Dentistry

Guideline Committee
Clinical Affairs Committee — Sedation and General Anesthesia Subcommittee

Composition of Group That Authored the Guideline
The Council on Clinical Affairs (CCA) is comprised of individuals representing the six geographical (trustee) districts of the American Academy of Pediatric Dentistry (AAPD), along with additional consultants confirmed by the Board of Trustees. CCA collaborates with the AAPD Council on Scientific Affairs.

Financial Disclosures/Conflicts of Interest
Council members and consultants derive no financial compensation from the American Academy of Pediatric Dentistry (AAPD) for their participation and are asked to disclose potential conflicts of interest. No conflicts were identified.

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Guideline Availability


Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on May 25, 2010. The information was verified by the guideline developer on June 2, 2010.

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