Basic Considerations Of Sedating Children In The Dental Setting

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Sedation Protocol
Start with guidelines
Minimizing mistakes through sequencing of procedure and critical points
Monitoring
Discharge
American Academy of Pediatric Dentistry

Guideline for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures

Most of you are familiar with these guidelines

www.aapd.org
AAP-AAPD Sedation Guidelines
2006

Promote Child Safety

Procedural Events

Medical supervision
Rescue
Levels of sedation

Pre-op assessment
Monitoring
Recording

Resources & Support

References
Supplies
Emergency drugs

Emergency drugs

AAP-AAPD Sedation Guidelines
2006
Let’s Break It Down
Sedation
(Anticipatory Guidance – in advance of sedation day)

• Key communication goals

• Options for management of child
  – Non-pharmacological
  – Pharmacological

What can you do?
What’ll it look like?
  - any crying anticipated
  - restraints

What are some factors you Can control?
Can’t control?

What’s your perceived “clinical success”?

What’s the benefits for the child & parent?

What’s the risks?
Sedation

(Anticipatory Guidance – in advance of sedation day)

• Assess parental input & communication
  – What does & does not fit with your practice?

• Describe what precautions you’ll take to ensure the safety of the child

• Answer any questions

• Call & discuss the sedation the night before (the reminder call)
Focusing on Child Assessment

Determining the risk for and readiness of the child for a sedation appointment:

– Review of systems
  • Physical integrity
  • Functional
    (physical exam including airway)

– Meds/allergies
  • Type
  • Amount
  • Reaction

– Histories
  • Birth
  • Medical/dental
  • Social

– Behavior & personality
  • Temperament
  • Social interaction
Sedation Day
(Pre-op period)

• Check all equipment for location & functionality (e.g., emergency kit, N₂O)

• Patient checks in

• Review & obtain informed consent

• Assistant gets child’s weight
  – Subtract 1 kg from weight due to clothing
  – Record in kg (not lbs)
  – Doctor assesses for temperament traits during weighing
    • Approachability
    • Cooperation
    • Emotional overtone
Sedation Day
(Pre-op period)

• H & P completed
  – Listen to lung fields, upper airway & heart
  – Visualize tonsils & airway
  – Check for change in medical history
    • URI
    • Cough & nasal discharge (crying may cause such signs)
    • Recent head trauma
  – Inquire about sleep obtained last evening
  – Final assessment of dental need for today’s procedure

• Confirm your opinion of sedation readiness (i.e., ASA risk status)

• Confirm your impression of child temperament
Stethoscope & listening to child’s chest

- Getting down to child’s level & chest
- MOC holding child or sitting
  - Front, back, sides; upper & lower
  - Under (preferred) or over shirt
- Sound transmission & interference - screaming/crying/movement
Sounds During Sedation

• Listening for
  – Clear breath sounds
  – Non-clear breath sounds
    • Snoring
    • Croup (seal bark)
    • Stridor
    • Wheezing
    • Crackles

• Heart sounds
  – Secondary concern

• Other sounds
  – regurgitation
Outcome for non-cooperative child

• Screaming/crying child
  – Nasal discharge?
  – Coughing?
  – Non-normal sounds

• Impossible to obtain usable information?
  – Record on sedation sheet/progress note
  – Spend more time questioning parent for recent URI/allergies/snoring/sleeping habits
Sedation Day
(Pre-op period)

• Determine NPO status
  – When last drank & what
  – When last ate & what

• Confirm what you need to accomplish in terms of treatment plan
  – Ultra-short procedure
  – Short procedure
  – Long procedure

• Consider local anesthetic
  – What type
  – Where infiltrated/injected
  – How much

Critical point
Sedation Day
(Pre-op period)

• Determine drug(s) to be used based on temperament & extent of dental need; include reversal agents

• Calculate doses of drugs to draw up
  – Check drug concentration
  – Use chemist method to determine amount to draw up
  
  \[ \text{Weight (kg)} \times \text{dose (mg/kg)} \times \text{concentration (ml/mg)} = \text{ml} \]
  
  – Have someone confirm math

• Draw up volume of drug
  – Use 5 cc syringe & medicine or paper cups
  – Have someone confirm amount pulled up

Critical point
Any discrepancy detected by anyone – resolve immediately
Sedation Day
(Pre-op period)

• Flavor drug(s) to mask unpalatable taste
  – Alginate impression material flavoring (10 drops)
    • Nu-Flavor
  – Children’s motrin or tylenol
  – FlavorX

• Immediately document drug(s) including reversal agent(s)
  – What was used
  – Concentration
  – Dose
  – Amount dispensed
Sedation Day
(Pre-op period)

• Administer drugs (*slowly*)
  – Via cup
  – Alternatively, via needle-less syringe
  – Any choking?....back off pushing
  – Not swallowing?.....pinch nose (MOC?)
  – Any loss?....record, but do not re-dose!!!
Sedation Day
(Intra-op period)

• Monitor patient during “latency” period
  – Clinical monitoring if awake
  – Pulse oximeter or more if quiet or sleeping
  – Never leave patient out of sight for more than 2-3 minutes
  – Record any vitals obtained during this period
Sedation Day
(Intra-op period)

• Separate patient from parent & apply monitors
  – If behavior is challenging, at least get the pulse ox attached
  – Otherwise, pulse ox, pre-cordial/tracheal, blood pressure cuff (can leave it “off” or un-inflated initially until child settles)
  – Get an initial reading of the vitals, if possible

Great method of opening airway and stabilizing head
Sedation Day
(Intra-op period)

- Administer nitrous oxide/oxygen for minimum of 5 minutes; don’t do anything else other than distract child or let child drift!! This is called “settling”.

  - If behavior is an issue after 5-8 minutes
    - Abort sedation
    - Keep child in-office and monitor until discharge criteria are met
    - Discuss the options with the parent

  - If behavior is not an issue after 5 minutes, you have a good start!!!!
Sedation Day
(Intra-op period)

• Gently and slowly open mouth with fingers (cross-finger technique)

• Insert mouth prop & examine teeth

• Apply topical anesthesia (dried mucosa is key, not amount of dollop of topical)

• Administer local anesthetic **very, very, very slowly** (1 minute for carpule)
  – By administering slowly, you minimize discomfort and keep the child settled!!
  – 4 mg/kg, as a maximum regardless of anesthetic, will keep you out of trouble

**Critical point**
Sedation Day
(Intra-op period)

• Wait a minimum of 3 to 4 minutes before applying rubber dam.

• Apply tight fitting rubber dam that is punched...a hole for each tooth isolated...do not use “slit” technique
  – Minimizes fluid leakage behind rubber dam
  – Minimizes likelihood of mismanaging airway due to excess fluids (e.g., laryngospasm)
Sedation Day
(Post-op period)

• Don’t leave child alone

• Continue monitoring per guidelines and as needed

• Explanation of patient’s behaviors
  – “Angry” child
  – Crying – reuniting with parent; numbness interpretation

• Post-op instructions
  – In quiet area versus operatory

• Discharge criteria met
Part of protocol is paperwork

Many dentists are not great record-keepers

If medico-legal action or Board inquiry occur, then detailed paperwork will always help your position and defense.

Alternatively, if paperwork is poor, then the outcome for you is highly unfavorable.
“The Paperwork”

• Why do the paperwork??
  – State rules/regulations may require it
  – Guidelines compliance
  – Optimizing litigation should it happen
  – Insurance documentation

• Because everyone can forget
  – Parents perceptions – what they *wanted* to hear
  – Busyness may lead to errors – lack of protocols may increase likelihood of omissions or finger pointing
“The Paperwork”
Generalities

• How good are your records?
  – Experience suggests we may not be very good
  – Succinct, but detailed is most desirable
  – Minimal, incomplete or missing information is a disaster waiting to occur
  – Consider using another set of eyes to review your charts; alternatively, randomly audit charts on regular basis
  – Legible and signed

• Need for written documentation
  – Litigator’s mentality: “If it isn’t written—it didn’t happen.” (and it may not have!)

• Keep photocopy or copies of consultations for your records

• The patient/guardian may request access to the records
  – Be professional in writing comments
Basic Elements of Informed Consent

– Names and dates, written form for sedation, and chart entry

– Detailed descriptions of procedures, treatment, and anesthesia

– Discussion of benefits and likely complications or side effects (risks)

– Alternative treatments and discussions of their risk/benefits

– Restrictions and/or recommendations (e.g., do not drive; keep child restrained)

– Allow for parent to ask questions

– Acknowledgements, signatures, and timely dated
Information for Parents

Pre-Meds

What Should I Expect?

No major change in behavior should be expected at first.

(Then as the sedation starts taking effect...)

They may get somewhat sleepy and calm.

(Initially)

They may get whiney and irritable.

(Early)

Some even get wild, crazy and combative.

(Eventually...)

The sedation takes effect and they will appear dazed. Some patients may become very groggy and may even fall into a light sleep.

(They are not under general anesthesia!)
Pre-Op Instructions

Preoperative instructions for sedation

1. Be honest with your child if they ask you questions about the dental appointment. If you do not know the answers to their questions, simply say, “I do not know…” “We will ask the dentist.”

   Do not say anything that will scare your child such as “the dentist is going to give you a shot.” You may have good intentions of preparing your child, but the effect may backfire! It is best to let the child talk with the child during the visit. We will tell them everything that will occur, but use language best suited for your child’s age and understanding. For instance, we refer to the shot as a “mosquito bite.”

2. Arrive at our office at the time you were told. The actual sedation and treatment of your child may be 30 to 60 minutes after you arrive depending on the drugs that are used to sedate your child.

3. We recommend that you bring another adult with you to the sedation appointment. We feel it is very important for you to take care of your child when he/she is in the child’s car seat and the other adult can concentrate on safely driving you home.

4. Please feel free to let your child bring a favorite blanket or stuffed animal to the appointment if he or she is strongly attached to it.

5. Dress your child in comfortable clothing, preferably a T-shirt or sweatshirt and pants. We will be attaching monitors, such as a blood pressure cuff, to his or her arm. Loosely fitting clothing is preferable for that reason.

6. If your child develops a cold, fever, congestion or the flu for a week or within 24 hours of the scheduled appointment, please call the office. We will make a decision as to whether to postpone and reschedule the appointment or refer you to your child’s physician.

7. If your child’s health changes, such as being diagnosed with a condition, problem, or disease within a week of the sedation appointment, please call the office. Also, call us immediately if your child has had an injury to his/her head causing loss of consciousness, vomiting, or dizziness.

8. Please let us know on the day of sedation if your child has taken any over-the-counter medications within the last 24 hours. This is very important to us and to your child’s safety.

9. Make sure your child uses the bathroom before the sedation appointment.

10. MOST IMPORTANT!!! Do not give your child any food for at least 6 hours before the scheduled appointment unless advised otherwise. This is extremely important and the child will not be treated if he/she has had any food before the sedation appointment. If your child does vomit during the treatment and has eaten food, we will be unable to complete treatment scheduled for that day and your child may have to be hospitalized for some time.

11. Clear liquids such as water, apple juice, gelatin, Popcicle, and tea may be given up to 3 hours before the appointment.

12. We may use different sedative agents to sedate your child than we had planned, but if you recall, we think the following are the best for your child:

   - Diazepam (Valium)
   - Midazolam (Versed)
   - Other

13. If you have any further questions, do not hesitate to call us at the office. We are here to help you in your child. Thank you.

14. Our emergency numbers are:
AAPD Sedation Record – the perfect answer!
**SEDATION RECORD**

**INTRAOPERATIVE MANAGEMENT**
- Monitors: ✔️ Observation, ✔️ Pulse oximeter, ✔️ Precordial/precordial stethoscope, ✔️ Blood pressure cuff, ✔️ Capnograph, ✔️ EKG, ✔️ Thermometer
- Protective stabilization/positions: ✔️ Papoose, ✔️ Head positioner, ✔️ Manual restraint, ✔️ Mouth prop, ✔️ Neck/shoulder roll

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1. Agent | Route | Dose | Time | Administered by
2. Agent | Route | Dose | Time | Administered by
3. Agent | Route | Dose | Time | Administered by

2. Local anesthetic agent
3. Record dental procedure: start and completion times, transfer to recovery area, etc.
4. Enter letter on chart and corresponding comments (eg. complications/side effects, reversal agent, analgesia) below

A, B, C, D,

**Sedation level**
- None (typical response/cooperation for this patient)
- Mild (uncooperative)
- Moderate (typical response to verbal commands: light tactile sensation)
- Deep (typical response to repeated verbal or painful stimulation)

**Behavior/responsiveness to treatment**
- Excellent: quiet and cooperative
- Good: mild moans &/or whimpering but treatment not interrupted
- Fair: crying with minimal disruption to treatment
- Poor: struggling that interfered with operative procedures
- Prohibitive: active resistance and crying; treatment cannot be rendered

Overall effectiveness: ✔️ Ineffective ✔️ Effective ✔️ Very effective ✔️ Overly sedated
Additional comments/treatment accomplished:

**DISCHARGE**

**Criteria for discharge**
- ✔️ Cardiovascular function is satisfactory and stable.
- ✔️ Airway patency is satisfactory and stable.
- ✔️ Patient is easily arousable.
- ✔️ Protective reflexes are intact.
- ✔️ Patient can talk (return to presentation level).
- ✔️ Patient can sit up, unaided (return to presentation level).
- ✔️ Responsiveness is at or very near presentation level (especially if very young or special needs child incapable of the usual expected responses).
- ✔️ State of hydration is adequate

**Discharge process**
- ✔️ Post-operative instructions reviewed with __________ by __________
  - ✔️ Transportation
  - ✔️ Airway protection/observation
  - ✔️ Activity
  - ✔️ Diet
  - ✔️ Nausea/vomiting
  - ✔️ Fever
  - ✔️ Rx
  - ✔️ Anesthetized tissues
  - ✔️ Dental treatment rendered
  - ✔️ Pain
  - ✔️ Bleeding
  - ✔️ Next appointment for __________
- ✔️ Discharged at __________ (time) to __________ for __________
- ✔️ After hours phone number __________________

Operator: __________________ Chairside assistant: __________________ Monitoring personnel: __________________

Signature: __________________ Date: __________ Time: __________

**POST OP CALL**
- Date: __________ Time: __________ By: __________ Spoke to: __________ Comments: __________________
Post-op Instructions

Post-operative instructions

Today, your child had dental treatment including a sedative to help calm them during treatment. He/she received the following sedative:

- Chloral hydrate
- Diazepam (Valium)
- Hydroxyzine (Atarax)
- Diphenhydramine (Benadryl)
- Other

Children respond to sedation in their own way, but the following guidelines may help you know what to expect traveling home and during the next 24 hours:

1. We recommend that you bring another adult with you to the sedation appointment. We feel it is very important for you to take care of your child when he/she is in the child’s car seat. The other adult can concentrate on safely driving you home. Please let us know if you have another adult with you at this time.

2. It is important that you place your child in a car seat or safety belts during your trip home. Sometimes on the way home your child would like to take a nap. He/she tends to nod his/her head allowing the chin to touch the chest. However, it is also important that you keep your child’s chin up and away from his/her chest. This study is important for you to have another adult with you to drive a car.

3. When you arrive at home your child may either wish to take a nap or have something to eat.

4. If your child wishes to take a nap, it’s okay. Your child may sleep from two to four hours and may even be restless for up to 24 hours after a sedation appointment. When your child is sleeping it is important that you place him/her on their side. Do not let him/her lie on his/her back or stomach. Please pillows on the back and front sides to keep him/her on his/her side. If your child vomits make sure that you move the child away from any vomit and clean all objects. If your child sleeps longer than four hours please awaken him/her gently. If you cannot awaken him/her, please call us immediately.

5. It is best to give your child clear liquids such as water or apple juice when you get home. The first meal at home should be soft foods such as jelly, yogurt, etc. Do not give him/her large portions of food. Do not give him/her fatty foods such as French fries.

6. Your child may be restless when waking up. Restless. He/she will need your support in protecting him/her from injury. Do not ignore him/her. An adult must be with the child at all times for at least four hours after he/she arrives home.

7. Your child should not perform any potentially dangerous activities such as riding a bike, playing outside unsupervised, handling sharp objects, working with tools or toys, or climbing stairs until he/she is back to his/her usual alertness and coordination.

8. We advise you to keep your child home for the rest of the day. Your child may be able to return to school on the next day.

9. The following are reasons for you to call the doctor immediately:
   a. You are unable to arouse your child.
   b. Your child is unable to eat or drink.
   c. Your child experiences excessive vomiting or pain.
   d. Your child develops a rash.

10. In case of an emergency call 011. Also call us immediately at the following number.
Other Possible Documentation

– Written pre-treatment diagnosis and evaluation

– Written treatment outline and expected results

– Adequate charting, x-rays, and photographs

– Postoperative telephone call follow-up

– Financial arrangements

– Any other documentation required by state law and guidelines
Questions???