### Purpose
To provide clinical management guidelines for effective and safe procedural sedation for pediatric and neonatal patients, outside of anesthesia-directed care in procedural areas.

### Policy Statement
The use of pharmacologic agents for procedural sedation at Swedish Medical Center (SMC) is standardized in accordance with guidelines from the American Society of Anesthesiologists, *Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists* (ASA).

- Procedures and treatments that include sedation require a review of the patient’s pertinent medical history, informed consent from the patient or legal representative, monitoring of the patient, and provision for immediate response to emergent situations.

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**Clinical Procedure**

<table>
<thead>
<tr>
<th>Clinical Procedure</th>
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<tr>
<td><strong>Clinical Procedure</strong></td>
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<tr>
<td><strong>Approved:</strong> September 2019</td>
<td></td>
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<tr>
<td><strong>Next Review:</strong> September 2022</td>
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<tr>
<td><strong>Clinical Area:</strong> All clinical areas</td>
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<tr>
<td><strong>Population Covered:</strong> All neonatal and pediatric patients up to 18 years of age receiving procedural sedation</td>
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<tr>
<td><strong>Campus:</strong> Ballard, Cherry Hill, Edmonds, First Hill, Issaquah, Mill Creek, Redmond</td>
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<td><strong>Implementation Date:</strong> July 2010</td>
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**Related Procedures, Protocols, and Job Aids:**
- Code Blue: Pediatric
- Code: Neonatal
- Comfort Promise
- Consent for Surgery or Other Invasive Procedural Treatment
- Food and Fluid Restrictions: Pre-Anesthesia
- Emergency Measures: Pediatric
- Ketamine Use for Pediatric Procedural Sedation
- Nitrous Oxide / Oxygen Administration: Pediatric
- Pain Management
- Pain Assessment: Pediatric
- Pediatric Rapid Response
- Gastroschisis: Delivery Room Management and Bedside Repair
- Discharge Criteria: Phase I and II PACU
- Verification of Correct Patient, Procedure, and Site/Side
- Vital Signs: Pediatric

**Go directly to:**
- Procedure
- Definitions
- Recommended Deep Sedation Drugs and Doses: Pediatric and Neonatal
- Recommended Moderate Sedation Drugs and Doses: Pediatric and Neonatal
Monitoring occurs prior to the procedure, during the procedure, and throughout the recovery process. At a minimum, the monitored parameters include level of sedation, respiratory function, and hemodynamics. Individuals responsible for patients receiving procedural sedation medications understand the dose, side effects, and reversal agents.

Individuals administering moderate or deep sedation (see Definitions) are qualified and have the appropriate credentials to manage patients at whatever level of sedation or anesthesia is achieved, either intentionally or unintentionally.

The qualified and privileged LIP or PA-C (see Definitions) intending to induce moderate sedation are competent as evidenced by medical credential in Anesthesiology, Emergency Medicine (including pediatric), or Critical Care (pediatric or neonatal) and verification of education, training, and experience supporting the granting of these privileges; or completion of the SMC moderate sedation self-learning module (pediatric, whichever is applicable to their practice) and upon renewal of medical credentials to:

- Evaluate patients prior to performing moderate sedation.
- Manage a compromised airway.
- Provide adequate oxygenation and ventilation.
- Recover patients from deep sedation.

See First Hill, Cherry Hill, Ballard, Issaquah Medical Staff Rules and Regulations, Rules and Regulations of the Medical Staff of Swedish Health Services Edmonds, Bylaws of the Medical Staff of Swedish Health Services, Edmonds Bylaws of the Medical Staff

LIPs privileged to administer deep sedation are competent as evidenced by credential in Anesthesiology, Emergency Medicine (including pediatric), or Critical Care (pediatric or neonatal) to:

- Evaluate patients prior to performing deep sedation.
- Manage an unstable cardiovascular system as well as a compromised airway and inadequate oxygenation and ventilation.
- Recover patients from general anesthesia.

See First Hill, Cherry Hill, Ballard, Issaquah Medical Staff Rules and Regulations, Rules and Regulations of the Medical Staff of Swedish Health Services Edmonds, Bylaws of the Medical Staff of Swedish Health Services, Edmonds Bylaws of the Medical Staff

All pediatric patients with ASA classification level 3 or greater require Pediatric Critical Care or Anesthesiology consultation when possible and except in case of emergency.

Procedures and treatments that use sedation require the following:

1. A review of the patient’s pertinent medical history,
2. Informed consent from the patient or parent/guardian,
3. Monitoring of the patient, and

LIP Order Requirement

Elements of this procedure require a licensed independent practitioner’s (LIP) order.

Responsible Persons

LIPs (includes neonatal nurse practitioner), CRNAs, registered nurses (RN) (see definitions under Qualified Personnel for required education), qualified Physician Assistants (PA-C), and certified respiratory care practitioner (RCP). Involve the Certified Child Life Specialist (CCLS), if available, to help prepare the child and family for the procedure.
Prerequisite Information

Adequate qualified staff are present during procedural sedation to:

- Appropriately evaluate the patient prior to beginning moderate or deep sedation (See Pre-Procedure and Prior to the Administration of Sedating Medications for requirements).
- Administer medications to induce moderate or deep sedation.
- Perform the procedure.
- Monitor the patient.
- Recover and discharge the patient either from the post-sedation or post-anesthesia recovery area or from the facility.

Personnel monitoring the patient receiving sedation do not have responsibility for the care of other patients during or post procedure until vital signs are stable and the patient has recovered to a pre-procedure state.

Roles and responsibilities for moderate sedation:

Personnel required for moderate sedation include a qualified and privileged LIP or PA-C and an RN. Additional staff may also include a RCP or another LIP.

- **The qualified and privileged LIP or PA-C**
  - Provides orders for sedation medications.
  - Is present prior to initiating sedation medications, and is present for all subsequent sedation administration throughout the procedure.
  - Performs procedure (if applicable).

- **The RN**
  - Administers sedation medications (LIP must be at the bedside)
  - Monitors the patient’s response to sedation through assessment of the depth of sedation, respiratory status and hemodynamics
  - Assists with minor interruptible tasks which do not interfere with the ability to monitor the patient.

  **NOTE:** An additional RN, RCP, technician, or LIP may be required when tasks would interfere with the RN’s ability to monitor the patient.

  An additional LIP, RCP, or RN may be present to administer medications, monitor the patient, and/or assist with airway management per their scope.

Roles and responsibilities for deep sedation:

Personnel required for deep sedation include, a qualified and privileged LIP, an RN, and an additional caregiver to include a second LIP or RN or RCP.

- **The qualified and privileged LIP:**
  - Provides orders for the sedation medications.
  - Is present prior to initiating sedation medications, and is present for all subsequent sedation administration throughout the procedure.
  - Performs the procedure (if applicable).

- **The RN:**
  - Administers sedation medications (LIP must be at the bedside)
  - Monitors the patient’s response to sedation through assessment of the depth of sedation, respiratory status and hemodynamics
  - Assists with minor interruptible tasks which do not interfere with the ability to monitor the patient.

  **NOTE:** A fourth caregiver (in addition to the three required caregivers described) such as an RN, technician, or assistant may be required when tasks would interfere with the RN’s ability to monitor the patient.
• **The additional caregiver to include LIP, RN, or RCP:**
  - Assists with airway management, respiratory status documentation (respiratory rate, end tidal CO2, etc.)
  - or administration of medications as needed and per their scope.

The LIP or qualified PA-C is present for all procedural sedation medication administration. Any medications administered for pre-procedure anxiety or pain require a one-time order from the LIP or qualified PA-C that is separate from the procedural sedation orders.

**NOTE: There is verbal confirmation between the LIP or qualified PA-C and the RN for each dose of sedation medication being administered.**

When a dedicated recovery unit is not available, the RN monitoring the patient receiving sedation will not have the responsibility for the care of other patients during or post-procedure for a minimum of 15 minutes after the Aldrete score is 8 or greater and vital signs have stabilized or returned to baseline.

An LIP order is required prior to administering sedation medications.

There is verbal confirmation between the LIP and the RN for each dose of sedation medication being administered.

The LIP is present for all procedural sedation medication administration. Any medications administered for pre-procedure anxiety or pain requires a one-time order from the LIP that is separate from the procedural sedation orders.

Etomidate and Propofol are only used during deep sedation procedures, and are not permitted to be used as a moderate sedation medication.

When combination drug therapy is used for any target level of sedation, the potential for a deeper level of sedation or adverse effects is increased.

Opiates used in combination with anti-anxiety or sedative medications for procedures require compliance with procedural sedation policy guidelines.

Use of single drug anxiolytics, by any route of administration (IM, IN, IV, PO, PR), is not considered procedural sedation.

When a dedicated recovery unit is not available, the RN monitoring the patient receiving sedation will not have the responsibility for the care of other patients during or post-procedure until the vital signs are stable (or return to baseline) for a minimum of 15 minutes after the Aldrete score is 8 or greater and vital signs have stabilized or returned to baseline.

Swedish Medical Center has agreed to follow The Comfort Promise to reduce or eliminate the discomfort of procedures. The Comfort Promise includes sucrose administration, distraction techniques, position of comfort and topical numbing (See [The Comfort Promise](#) addendum).

Neonatal procedural sedation is used at the bedside in the Neonatal Intensive Care Unit (NICU) and patients will be assessed with the N-PASS scale.
### PRE PROCEDURE

**LIP**

1. Perform and document in the electronic medical record (EMR) the following pre-procedure assessment:
   
   a. Update the Medical History and Physical Exam.
   
   b. The patient’s suitability for sedation prior to any medication administration, including a minimum of:
      
      - Targeted sedation level- moderate or deep
      - Obstructive sleep apnea (OSA) evaluation. See Algorithm: Pre-procedure Assessment for Sleep Apnea, Pediatric Patients Undergoing Procedural Sedation.
      - History of anesthesia difficulty and personal or family history of malignant hyperthermia
      - Airway evaluation
      - Time of last oral intake
      - Discuss plan, risks, alternatives and benefits of sedation and the procedure with the patient/patient’s legal representative as part of the informed consent.
      - Consider Anesthesia involvement in the procedure for patients with:
         
         - A BMI of 35 or greater
         - An ASA score of 3 or greater
         - Concern for respiratory compromise during procedural sedation
         - Increased risk for complications from sedation

   **NOTE:** Consider an Anesthesia consult for those patients identified as having a risk of complications with sedation and to assist with the development of a plan.

2. Mark side/site of procedure according to Verification of Correct Patient, Procedure, and Site/Side when applicable.

**RN**

1. Provide education to the patient and family regarding:
   
   a. Side effects of sedating medications
   
   b. Precautions to take for 12-24 hours after receiving sedation

   **NOTE:** Pediatric and neonatal patients being discharged less than 24 hours after receiving sedation are discharged to a parent or assigned guardian to drive or accompany them home and will have someone available in case of an emergency. If discharge criteria is unmet due to the absence of a responsible escort, notify the LIP for decision/orders on discharge from or admission to the hospital.

2. Verify consent and obtain signature on consent form if not yet done. Use the [Consent for Surgery or Other Invasive Procedural Treatment](https://www.phs.org) form.
**PRIOR TO THE ADMINISTRATION OF SEDATION MEDICATIONS**

1. Verify and document the following in the electronic medical record (EMR) prior to giving sedation for planned, elective and unplanned procedures:
   - The correct patient using two patient identifiers
   - Type of procedure to be performed. See *Verification of Correct Patient, Procedure, and Site/Side.*

2. Perform a Point of Care (POC) urine dip stick pregnancy test on all female patients of childbearing age (10 years and older or has started menses) prior to any procedure and procedural sedation. The following are exceptions: currently pregnant, history of hysterectomy. LIP to discuss potential risk of sedation if patient is pregnant.

3. Confirm and document in the EMR prior to giving sedation, that the following are available for immediate use:
   - Blood Pressure device
   - Medications and reversal agents
   - IV in place and patent
   - Pulse oximetry
   - Suction equipment
   - Emergency age appropriate Code Blue cart (neonatal (Blue) or pediatric (Color Coded))
   - Oxygen set-up, including resuscitation bag/mask
   - Cardiorespiratory monitor
   - End-tidal CO₂ monitor during deep sedation procedures, TcCO₂ for neonates
   - Printed Emergency Drug Sheet based on patient’s weight in kilograms

4. For planned or unplanned procedures, verify and document in the EMR prior to giving sedation. For emergent or urgent procedures, verify and document as many of the following as possible:
   - NPO status (see *Food and Fluid Restrictions: Pre-Anesthesia*)

**NOTE:** Although recent food intake is not an absolute contraindication for administering procedural sedation, the LIP must weigh the risk of pulmonary aspiration and the benefits of providing procedural sedation and analgesia in accordance with the needs of each individual patient.

- H&P or pre procedural note is completed prior to procedural sedation
- Written consent for the procedure or treatment
- Complete Safety Pause including Procedure site/side verification (if applicable)
- Presence of sleep apnea symptoms or risk factors
- Pre-procedural rows are completed
- Allergies
- How to report any symptoms during and after procedure
- Patient/parent/guardian understands effects of sedation and the precautions to take for 24 hours after receiving sedation, including:
  a. Feeding: Do not give anything to drink or eat until fully awake. Start with small amounts of clear liquids and advance slowly.
  b. Some post sedation nausea and vomiting is common. Your child may not have a normal appetite for the first 24 hours after sedation.
  c. Observe your child closely, encourage rest and quiet activities.
d. Do not allow your child to play outside, ride a bike, swim, and participate in sports, return to work or drive a car for 24 hours.

e. Do not allow your child to bath unsupervised for the rest of the day.

f. Your child should not be left unsupervised by an adult until 24 hours after sedation.

g. Alcohol should be avoided for a period of 24 hours (and for all patients less than 21 years old.)

h. Conditions under which immediate emergency care should be sought.

5. Obtain and document in the EMR the following prior to procedure initiation:

- Temperature
- Height and weight
- Respiratory rate
- Blood pressure
- End tidal CO₂ for deep sedation procedures, TcCO₂ for neonates
- Oxygen saturation
- Heart rate and rhythm
- Level of sedation (Ramsay score)
- Baseline Aldrete score
- Patient’s baseline pain level
  a. N-PASS for neonatal patients.
  b. 0-10 numeric scale, Faces-revised, or FLACC-revised scale for pediatric patients.

6. Perform a safety pause and document in the EMR verification of:

a. The correct patient using two patient identifiers and the type of procedure to be performed. See Verification of Correct Patient, Procedure, and Site/Side.

b. The correct procedure site/side is identified

c. The site/side is marked by the proceduralist

d. The written consent matches the planned procedure or treatment

e. The patient’s allergies

f. The administration of pre-procedure antibiotics, if ordered

g. If applicable,
   i. All pertinent pre-procedure lab and/or radiology results are available
   ii. Implants needed for the procedure have been matched and are available
   iii. Irrigation fluids need for the procedure are available

h. Medications have been labeled

i. All appropriate safety precautions have been reviewed

j. The patient’s pre-sedation assessment has been communicated to the team

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**INTRAPROCEDURE**

LIP, RN, RCP

1. Document time of safety pause on the EMR.

2. Administer medications for the purpose of sedation according to individual drug/dosing as defined in the order sets in the EMR, when the LIP is present in the room/at bedside.

   See Recommended Moderate Sedation Drugs and Doses: Pediatric or Recommended Deep Sedation Drugs and Doses: Pediatric. The procedure Ketamine Use for Pediatric Procedural Sedation may be used according to the conditions in that procedure (excludes neonates).
### LIP, RN, RCP

3. All patients receiving sedation, either inpatient or outpatient, are assessed and monitored as outlined below.

4. Report to LIP immediately any adverse reactions, complications, or side effects such as respiratory depression, hypotension, or bradycardia.

5. Assess pain level (age and developmental appropriate scale) pre and post procedure.

6. From the time medications have been administered, the patient is monitored continuously and the following parameters are documented every 5 minutes throughout the procedure in the EMR:
   - Respiratory rate
   - Blood pressure
   - End tidal CO₂ (for deep sedation procedures), TcCO₂ for neonates
   - Oxygen saturation
   - Heart rate and rhythm
   - Level of sedation (Ramsay score for the ED RN)
   - Pain (for the ED RN)
   - Any abnormal baseline parameters (such as cardiac rhythm or rate, hypotension, or breathing difficulties)

**NOTE:** Level of sedation and analgesia is continuously being assessed and monitored by the LIP and medications are adjusted based on those assessments.

**NOTE:** Items under # 6 are documented every 5 minutes. If unforeseen circumstances arise and unable to document vital signs every 5 minutes, the next set of vital signs should be obtained as soon as possible, not to exceed 10 minutes.

**NOTE:** Report to LIP immediately any adverse reactions, complications, or side effects (i.e. respiratory depression or hypotension).

### Change in Clinical Condition

1. LIP notification should occur for any of the following (reference Vital Signs: Pediatric for normal ranges including neonates):
   - Change in Heart Rate
   - Cardiac Monitoring changes from baseline
   - Change in Respiratory Rate if obstructing
   - Change in Systolic Blood Pressure (SBP)
   - Oxygen Saturation less than 92%, if not baseline value
   - Increase in oxygen requirement
   - End tidal CO₂ (etCO₂) significantly changes from baseline, TcCO₂ for neonates
   - Unexpected decrease in level of consciousness
   - Agitation
   - Any other concern for patient safety and/or discomfort

2. If clinically indicated, consider activating the [Emergency Measures: Pediatric](#) protocol.

**NOTE:** If patient condition deteriorates or no response to reversal treatment is noted, call Anesthesia for assistance. Call a [Pediatric Rapid Response Team (PRRT)](#) or [Code Blue: Pediatric](#) or [Code: Neonatal](#) if warranted by patient condition.
3. If a patient becomes more deeply sedated than intended, document the sedation level and the interventions taken (if necessary) to return the patient to the intended level.

   a. These may include, but are not limited to
      - provider notification
      - increased inspired oxygen concentration
      - airway support
      - fluid resuscitation
      - use of reversal agents as well as close observation during dissipation of drug effects

   **NOTE:** Sedation is a continuum without clear boundaries between levels. Furthermore, the amount of discomfort a patient experiences during a procedure may change rapidly and require titration of medications. Patients may respond unpredictably and reach deeper levels than intended. LIPs and qualified PA-Cs should consider the factors which affect a patient’s response including the planned procedure, age, body habitus, comorbidities, and current medications.

### POST PROCEDURE

1. Document the conclusion of the procedure in the EMR.
2. After the procedure, continue to monitor the patient documenting vital signs, pain level and level of consciousness using the Aldrete Score in the EMR every 5 minutes until the Aldrete Score has returned to greater than or equal to 8 or pre-procedure baseline then move to Step 3.

   **NOTE:** If unforeseen circumstances arise and the RN is unable to document vital signs, pain level, and level of sedation every 5 minutes, the next set is obtained as soon as possible, not to exceed 10 minutes.

3. Once the patient’s Aldrete score has returned to baseline, reassess the following in 10-30 min:
   a. Vital signs
   b. Pain Level
   c. Aldrete score

4. If the patient’s Aldrete Score remains greater than or equal to 8 or at pre-procedure baseline and vital signs remain appropriate, the patient may be discharged from the procedure and patient monitoring may return to unit standard until discharge or transfer.

   **NOTE:** If the Aldrete Score is less than 8 or not back to baseline, an LIP or qualified PA-C order is required to transfer patient. If the patient is not progressing as expected, notify the LIP or qualified PA-C.

### DISCHARGE

1. Patient and parent/guardian (responsible escort) have been educated on effects of procedure, sedation, symptoms to report, and how to seek emergency care, and the importance of having someone available to provide help with his or her care for 24 hours following the procedure.

2. **Outpatients** may be discharged when all of the following discharge criteria are met.

   Confirm and document in the EMR:
   - Vital signs are stable (or return to baseline) for a minimum of 15 minutes after Aldrete score is 8 or greater or back to pre-procedure baseline
   - Minimal to no nausea.
   - No need for parenteral medications.
   - Pain adequately controlled.
• A minimum of two hours has elapsed after the last administration of reversal agents (naloxone, flumazenil) to ensure that the patient does not experience continued sedative effects after the reversal agents have worn off.

For units utilizing modified Aldrete scoring for outpatient discharge, confirm and document in the EMR:
• Modified Aldrete of 15/20 or greater
  • Vital signs are stable (or return to baseline) for a minimum of 15 minutes after Aldrete score is 8 or greater or back to pre-procedure baseline
  • Minimal to no nausea.
  • No need for parenteral medications.
  • Pain adequately controlled.
  • A minimum of two hours has elapsed after the last administration of reversal agents (naloxone, flumazenil) to ensure that the patient does not experience continued sedative effects after the reversal agents have worn off.

If discharge criteria is not met due to the absence of a responsible escort, notify the LIP or qualified PA-C.

3. ► Inpatients may be transferred to the unit when all of the following criteria are met:
   Confirm and document in the EMR:
   • Vital signs are stable (or return to baseline) for a minimum of 15 minutes after Aldrete score is 8 or greater or back to pre-procedure baseline.
   • Verbal report has been provided
   • A minimum of one hour has elapsed after the last administration of reversal agents (naloxone, flumazenil) to ensure the patient does not experience continued sedative effects after the reversal agents have worn off.

4. Infants: The following patients are monitored for 12 hours post procedure and may be discharged when all of the above discharge criteria are met and there have been no apneic events:
   • Term infants less than 44 weeks post conceptual age at time of procedure.
   • Premature infants (at birth) less than 52 weeks post conceptual age at time of procedure.
   If any apnea occurs during initial monitoring, the patient continues to be monitored until apnea free for 12 hours.

DOCUMENTATION

1. Document the procedure and patient outcomes in the EMR.
2. LIP completes a Sedation Procedure Note documenting the sedation, outcome and any complications in the EMR.
3. Document all education provided in the Patient Education section of the EMR.
Definitions

*Aldrete Score.*

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<th>ALDRETE SCORE</th>
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<tr>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>• Moves 4 extremities voluntarily or on command</td>
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<tr>
<td>• Moves 2 extremities voluntarily or on command</td>
</tr>
<tr>
<td>• Moves 0 extremities voluntarily or on command</td>
</tr>
<tr>
<td><strong>Respiration</strong></td>
</tr>
<tr>
<td>• Able to breathe and cough freely</td>
</tr>
<tr>
<td>• Dyspnea or limited breathing</td>
</tr>
<tr>
<td>• Apneic</td>
</tr>
<tr>
<td><strong>Circulation</strong></td>
</tr>
<tr>
<td>• BP within 20% of pre-anesthetic level</td>
</tr>
<tr>
<td>• BP within 20-50% of pre-anesthetic level</td>
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<tr>
<td>• BP within 50% of pre-anesthetic level</td>
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<tr>
<td><strong>Consciousness</strong></td>
</tr>
<tr>
<td>• Fully awake</td>
</tr>
<tr>
<td>• Arousable on calling</td>
</tr>
<tr>
<td>• Not responding</td>
</tr>
<tr>
<td><strong>Oxygen Saturation (SaO₂)</strong></td>
</tr>
<tr>
<td>• Able to maintain SaO₂ above 92% on room air</td>
</tr>
<tr>
<td>• Needs O₂ to maintain SaO₂ above 90%</td>
</tr>
<tr>
<td>• SaO₂ less than 90% even with O₂</td>
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<td><strong>TOTAL SCORE:</strong></td>
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## MODIFIED ALDRETE SCORE

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<tbody>
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<td>Moves 4 extremities voluntarily</td>
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</tr>
<tr>
<td>or on command</td>
<td></td>
</tr>
<tr>
<td>Moves 2 extremities voluntarily</td>
<td>1</td>
</tr>
<tr>
<td>or on command</td>
<td></td>
</tr>
<tr>
<td>Moves 0 extremities voluntarily</td>
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</tr>
<tr>
<td>or on command</td>
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<table>
<thead>
<tr>
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<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to breathe and cough freely</td>
<td>2</td>
</tr>
<tr>
<td>Dyspnea or limited breathing</td>
<td>1</td>
</tr>
<tr>
<td>Apneic</td>
<td>0</td>
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<thead>
<tr>
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<tr>
<td>BP within 20% of pre-anesthetic</td>
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<table>
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<tr>
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<tbody>
<tr>
<td>Fully awake</td>
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<tr>
<td>Arousable on calling</td>
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<td>Not responding</td>
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<tr>
<th>Oxygen Saturation (SaO₂)</th>
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<tr>
<td>Able to maintain SaO₂ above 92%</td>
<td>2</td>
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<tr>
<td>on room air</td>
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<tr>
<td>Needs O₂ to maintain SaO₂ above</td>
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<tr>
<td>90%</td>
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<tr>
<td>SaO₂ less than 90% even with O₂</td>
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<td>Dry and clean or not applicable</td>
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<td>Wet but marked and not increasing</td>
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<tr>
<td>Growing area of wetness</td>
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<td>Pain free</td>
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<td>Mild pain handled by oral</td>
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<td>medication</td>
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<td>Severe pain requiring parenteral</td>
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<tr>
<td>Able to stand up and walk</td>
<td>2</td>
</tr>
<tr>
<td>straight, on ordered bed rest,</td>
<td></td>
</tr>
<tr>
<td>or performing at previous level</td>
<td></td>
</tr>
<tr>
<td>of function</td>
<td></td>
</tr>
<tr>
<td>Vertigo when erect</td>
<td>1</td>
</tr>
<tr>
<td>Dizziness when supine</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fasting/Feeding</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to drink fluids or NPO</td>
<td>2</td>
</tr>
<tr>
<td>Nauseated</td>
<td>1</td>
</tr>
<tr>
<td>Nauseated and vomiting</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Urine Output</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has voided, adequate urine output</td>
<td>2</td>
</tr>
<tr>
<td>per device or not applicable</td>
<td></td>
</tr>
<tr>
<td>Unable to void but comfortable</td>
<td>1</td>
</tr>
<tr>
<td>Unable to void and uncomfortable</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL SCORE:</th>
<th>Score</th>
</tr>
</thead>
</table>
Ramsay Sedation Scale or Ramsay Score.

<table>
<thead>
<tr>
<th>SCORE</th>
<th>LEVEL OF SEDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Patient anxious and agitated or restless, or both</td>
</tr>
<tr>
<td>2</td>
<td>Patient cooperative, oriented and tranquil</td>
</tr>
<tr>
<td>3</td>
<td>Patient responds to commands only</td>
</tr>
<tr>
<td>4</td>
<td>Exhibits brisk response to light glabellar tap or loud auditory stimulus</td>
</tr>
<tr>
<td>5</td>
<td>Exhibits sluggish response to light glabellar tap or loud auditory stimulus</td>
</tr>
<tr>
<td>6</td>
<td>Exhibits no response</td>
</tr>
</tbody>
</table>

**Body Mass Index (BMI):** a measure of someone's weight in relation to height; to calculate one's BMI, take one's weight in kilograms and divide that by the square of one's height in meters (kg/m²); overweight is a BMI greater than 25; obese is a BMI greater than 30.

**Case end.** The time in which both (1) the proceduralist completes the case and (2) sedation medication administration has ended. For pediatric patients: deep sedation has ended when the patient has returned to near baseline mental status. The LIP continues monitoring q5 min vitals during this time.

**Case start.** The time in which the first sedation medication is administered (does not include anxiolytics medications).

**Obstructive sleep apnea (OSA).** Repeated episodes of complete or partial cessation in air flow during sleep secondary to upper airway obstruction, resulting in drop in oxygen. With the use of opioids and benzodiazepines, untreated sleep apnea patients are at increased risk for developing respiratory failure and respiratory arrest.

**Pain management.** An analgesic administered only for the purpose of managing either existing pain or anticipated pain from a procedure in a patient who has previously received analgesics, e.g., morphine sulfate 2 mg IV for the removal of a chest tube 5-15 minutes prior to procedure; the patient has been receiving 1-2 mg morphine IV every three hours as needed for pain.

**Procedure pause or safety pause.** The moment immediately prior to the incision or insertion of instruments when the nurse states the patient’s name, the procedure, and, when applicable, the operative side, and receives verbal agreement from all members of the team. Correct patient position and the availability of correct implants and any special equipment or special requirements are also verified during the pause.

**Procedural sedation.** A technique of administering sedatives or dissociative agents with or without analgesics to induce a state that allows the patient to tolerate unpleasant procedures while maintaining cardiorespiratory function. Procedural sedation is intended to result in a depressed level of consciousness that allows the patient to maintain oxygenation and airway control independently.

Following are the American Society of Anesthesiologists definitions of levels of sedation. In preverbal children and infants, as well as those who are developmentally impaired, response to verbal commands is not helpful in assessment of level of sedation. Gentle touch and vigorous tactile stimulation may be substituted to assess responsiveness, but may rouse the child and interfere with the procedure. Infants and children can pass rapidly from one level of sedation into a deeper level, and the distinction between levels may be unclear.
Minimal sedation (anxiolysis). A drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilatory and cardiovascular functions are unaffected.

Moderate sedation/analgesia (conscious 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.

Deep sedation/analgesia. A drug-induced depression of consciousness during which patients cannot be easily aroused but can 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.

Anesthesia. Consists of general anesthesia and spinal or major regional anesthesia. It does not include local anesthesia. General anesthesia is a drug-induced loss of consciousness during which patients cannot be aroused, 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.

Qualified personnel. Registered nurse who has successfully completed the SMC Procedural Sedation self-learning module annually, has completed the Procedural Sedation Competency Verification upon hire, and is a current ACLS certified provider for adults, a PALS certified provider for pediatrics, or a NRP certified provider for neonates. When the intent is deep sedation, a certified respiratory care practitioner, RN, or second LIP may serve as qualified personnel to assist with airway management and must also have current ACLS, PALS, or NRP training (patient age dependent).

Licensed independent practitioner (LIP). Physician or allied health professional with appropriate credentials as defined by the medical staff bylaws and allied health manual, i.e., physician, certified registered nurse anesthetist (CRNA), and advanced registered nurse practitioner (ARNP).

Responsible escort. Includes significant others or pre-arranged private or community-sponsored vehicles/drivers responsible for “door-to-door” transport (does not include random taxi transportation).

Sleep apnea. Characterized by recurrent episodes of lack of breathing during sleep, resulting in oxygen desaturation. With the use of opioids and benzodiazepines, untreated sleep apnea patients are at increased risk for developing respiratory failure and respiratory arrest.

See addendum, Recommended Moderate Sedation Drugs and Doses: Pediatric and Neonatal.

Examples of procedures associated with moderate sedation include the following:

- Endoscopy
- Bronchoscopy
- Cardioversion
- Thoracentesis
- Paracentesis
- Liver / lung biopsy
- Foreign body removal
- Arteriogram
- CT scan guided biopsies
- Lumbar puncture
- Peripheral IV placement
- MRI
- Silo placemen
- Chest tube insertion
- Invasive line insertion
- Extensive I & D / debridement
- Reduction of dislocated joints
- Laceration repair
- Cleaning of extensive abrasion
- Temporary pacemaker insertion
- Electrophysiology studies
- Cardiac catheterization
- CT scan
- Diagnostic medical imaging studies
- Gastrochisis beside repair
See addendum, *Recommended Deep Sedation Drugs and Doses: Pediatric and Neonatal.* Examples of procedures associated with *deep sedation* include the following:

- Cardioversion
- Liver / lung biopsy
- Foreign body removal
- Reduction of dislocated joints
- Extensive I & D / debridement
- Invasive line insertion
- Medical imaging

It is not always possible to predict how an individual patient receiving sedation will respond. Patient response variables include such things as age, current state of health, pre-existing conditions or illnesses, and/or other underlying factors.

*Pain scales.* See the *Pain Management* protocol for appropriate description of pain scales.

**Forms/Addenda**

- [Pediatric Procedural Sedation Flow Sheet](form 37358, downtime use only)
- [The Comfort Promise](form 37358, downtime use only)

**Supplemental Information**

All patients are screened by the LIP for sleep apnea according to the *Algorithm: Pre-Procedure Assessment for Sleep Apnea, Pediatric Patients Undergoing Procedural Sedation.* Patients assessed to be at moderate or severe risk for OSA require Pediatric Critical Care or Anesthesiology consultation.

When providing discharge teaching to patients with previously diagnosed OSA, encourage the use of their home CPAP machine when taking a nap or sleeping after receiving procedural sedation medication.

The procedural sedation team culture includes respect for active communication between the LIP, RN, and supporting members regarding patient status, medication administration, and concerns to ensure patient safety and quality care.

All quality variances are reviewed by a Procedural Sedation subcommittee. Findings are shared with all members of the procedural sedation committee at each meeting. Recommendations for quality improvement are determined at the general procedural sedation committee meeting and communicated to the LIP and the leadership of the unit involved with the variance.

**Regulatory Requirement**

Centers for Medicare & Medicaid Services (CMS). 482.52(b)(1); 482.52 (b)(3) – Anesthesia Services.


Det Norske Veritas (DNV). MS.17 – Medical Staff; AS.1 – Anesthesia Services.

The Joint Commission (TJC). Provision of Care, Treatment, & Services – PC 03.01.01, PC 03.01.03, PC 03.01.05, PC 03.01.07; Record of Care – RC 02.01.03.

**References**


Addenda

- Recommended Moderate Sedation Drugs and Doses: Pediatric and Neonatal
- Recommended Deep Sedation Drugs and Doses: Pediatric and Neonatal
- Algorithm: Pre-Procedural Assessment for Sleep Apnea, Pediatric Patients Undergoing Procedural Sedation
- Procedural Sedation Competency Verification
- Procedural Sedation Quick Guide

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