

PROCEDURAL SEDATION: ADULT

[NOTE: Swedish/Edmonds users only, go to [Procedural Sedation Adult Policy](#)]

Clinical Procedure	
Approved: February 2011	Next Review: February 2014
Clinical Area: All patient care departments	
Population Covered: All adult patients receiving procedural sedation	

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Purpose

To provide clinical management guidelines for the purpose of ensuring uniformity of care provided to patients receiving procedural sedation.

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](#). Procedures and treatments that include sedation require a review of the patient's pertinent medical history, informed consent from the patient or parent/guardian, monitoring of the patient, and provision for immediate response to emergent situations. The monitoring occurs prior to the procedure, during the procedure, and through the recovery process. At a minimum, the monitored parameters include level of sedation, ventilatory 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.

Licensed independent practitioners (LIP) (see [Definitions](#)) intending to induce *moderate* sedation are competent as evidenced by medical credential in anesthesiology, emergency medicine, critical care and verification of education, training, and experience supporting the granting of these privileges; or completion of the SMC moderate sedation self-learning 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.

Those physicians permitted to administer *deep* sedation are competent as evidenced by credential in anesthesiology, emergency medicine, or critical care 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.

Sufficient numbers of qualified personnel are present during procedures using *moderate* or *deep* sedation to:

- Appropriately evaluate the patient prior to beginning moderate or deep sedation.
- Provide the 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 organization.

The minimal necessary qualified personnel are defined as follows:

- During procedures requiring *moderate* sedation, in addition to the LIP, one qualified registered nurse (RN) is present to monitor the patient and assist with minor, interruptible tasks which do not interfere with the ability to monitor the patient.
- When the intent is to provide *deep* sedation, the following health care providers are present:
 - The LIP, credentialed in anesthesiology, emergency medicine, or critical care, who orders the medications is present during the procedure and administration of the medications.
 - The qualified registered nurse (see [Definitions](#)) may monitor depth of sedation and cardiopulmonary status and administer the medications *only* if the prescribing privileged physician is present in the room, and there is verbal confirmation between physician and nurse to administer the medication.
 - A second LIP, RN, or a certified respiratory care practitioner assists with airway management. If the second physician is privileged, he or she may administer the medications and monitor.

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.

LIP Order Requirement

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

Responsible Persons

Qualified LIPs, registered nurses, and certified respiratory care practitioners.

Prerequisite Information

None.

PROCEDURE

► Requires an LIP order

Responsible Person	Steps
RN	<p>PRIOR TO PROCEDURAL SEDATION ADMINISTRATION</p> <ol style="list-style-type: none">1. Verify the following prior to giving sedation for planned and unplanned procedures:<ul style="list-style-type: none">• The correct patient using two patient identifiers• Type of procedure to be performed2. For planned procedures, verify the following. For emergent procedures, verify as many as possible, subject to peer review.<ul style="list-style-type: none">• Written consent for the procedure or treatment• Allergies• NPO status: (1) only clear liquids eight hours prior to patient check-in; (2) nothing by mouth three hours prior to procedure.• Presence of sleep apnea symptoms, including:<ul style="list-style-type: none">▪ Diagnosis of sleep apnea▪ Apneic periods when sleeping▪ Gasping or choking when asleep▪ Loud or frequent snoring and obesity▪ Daytime sleepiness,▪ BMI greater than 35• How to report any symptoms during procedure• Patient understands effects of sedation and the precautions to take for 24 hours after receiving sedation, including:<ul style="list-style-type: none">▪ Do not drive a car.▪ Do not make major decisions or sign legal documents.▪ Do no activities requiring skilled physical coordination or hand-eye coordination.▪ Alcohol should be avoided for a period of 24 hours.▪ Conditions under which immediate emergency care should be sought.▪ It is recommended that someone is available for 24 hours. <p>→ Patients being discharged less than 24 hours after receiving sedation need to make arrangements to have someone drive or accompany them home and to have someone available in case of an emergency.</p> <ol style="list-style-type: none">3. Check that the following is available for immediate use:<ul style="list-style-type: none">• Oxygen delivery system• Suction equipment• Blood pressure device• Pulse oximeter• End-tidal CO₂ monitor during deep sedation procedures• Emergency Code Blue cart• Cardiac monitor (EKG is monitored on patients with significant cardiovascular disease or when dysrhythmias are anticipated or detected as determined by the prescribing LIP.)• Medications and reversal agents

LIP ordering sedation	<p>4. Update the History & Physical in accordance with the Medical Staff Rules & Regulations.</p> <p>5. Assess and document the patient’s suitability for sedation prior to any medication administration, including a minimum of:</p> <ul style="list-style-type: none"> • Airway evaluation • ASA status • Time of last oral intake <p>6. Discuss the plan, risks, alternatives and benefits of sedation and the procedure with the patient.</p> <p>7. Mark site of procedure according to Site Marking policy.</p>																																														
RN	<p>8. Obtain baseline vital signs, including:</p> <ul style="list-style-type: none"> • Temperature • Height and weight • Respiratory rate • Blood pressure • End tidal CO₂ for deep sedation procedures (anesthesiologist or CRNA responsible) • Oxygen saturation • Heart rate • Level of sedation • Patient’s baseline pain level (0-10 numeric scale or PABS scale) • Baseline Aldrete score <table border="1" data-bbox="560 999 1349 1860" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">ALDRETE SCORE</th> </tr> </thead> <tbody> <tr> <td colspan="2"><u><i>Movement</i></u></td> </tr> <tr> <td>▪ Can move 4 extremities.....</td> <td style="text-align: right;">2</td> </tr> <tr> <td>▪ Can move 2 extremities.....</td> <td style="text-align: right;">1</td> </tr> <tr> <td>▪ Can move 0 extremities.....</td> <td style="text-align: right;">0</td> </tr> <tr> <td colspan="2"><u><i>Respiratory Effort</i></u></td> </tr> <tr> <td>▪ Can deep breathe & cough</td> <td style="text-align: right;">2</td> </tr> <tr> <td>▪ Dyspnea/Impaired breathing</td> <td style="text-align: right;">1</td> </tr> <tr> <td>▪ Apnea.....</td> <td style="text-align: right;">0</td> </tr> <tr> <td colspan="2"><u><i>Blood Pressure</i></u></td> </tr> <tr> <td>▪ +/- 20 mmHg of baseline</td> <td style="text-align: right;">2</td> </tr> <tr> <td>▪ +/- 20-50 mmHg of baseline</td> <td style="text-align: right;">1</td> </tr> <tr> <td>▪ +/- 50 mmHg of baseline</td> <td style="text-align: right;">0</td> </tr> <tr> <td colspan="2"><u><i>Sedation Level</i></u></td> </tr> <tr> <td>▪ Awake and responding.....</td> <td style="text-align: right;">3</td> </tr> <tr> <td>▪ Sedated, but responds to normal voice</td> <td style="text-align: right;">2</td> </tr> <tr> <td>▪ Sedated, but responds to loud voice or movement</td> <td style="text-align: right;">1</td> </tr> <tr> <td>▪ Deeply sedated, unable to respond.....</td> <td style="text-align: right;">0</td> </tr> <tr> <td colspan="2"><u><i>Oxygen Saturation</i></u></td> </tr> <tr> <td>▪ Able to maintain O₂ saturation greater than 94% on room air (or pre-procedure baseline).....</td> <td style="text-align: right;">2</td> </tr> <tr> <td>▪ Needs supplemental O₂ to maintain O₂ saturation greater than 90%</td> <td style="text-align: right;">1</td> </tr> <tr> <td>▪ O₂ saturation less than 90% even with supplemental oxygen.....</td> <td style="text-align: right;">0</td> </tr> <tr> <td colspan="2" style="text-align: center;">TOTAL SCORE:</td> </tr> </tbody> </table>	ALDRETE SCORE		<u><i>Movement</i></u>		▪ Can move 4 extremities.....	2	▪ Can move 2 extremities.....	1	▪ Can move 0 extremities.....	0	<u><i>Respiratory Effort</i></u>		▪ Can deep breathe & cough	2	▪ Dyspnea/Impaired breathing	1	▪ Apnea.....	0	<u><i>Blood Pressure</i></u>		▪ +/- 20 mmHg of baseline	2	▪ +/- 20-50 mmHg of baseline	1	▪ +/- 50 mmHg of baseline	0	<u><i>Sedation Level</i></u>		▪ Awake and responding.....	3	▪ Sedated, but responds to normal voice	2	▪ Sedated, but responds to loud voice or movement	1	▪ Deeply sedated, unable to respond.....	0	<u><i>Oxygen Saturation</i></u>		▪ Able to maintain O ₂ saturation greater than 94% on room air (or pre-procedure baseline).....	2	▪ Needs supplemental O ₂ to maintain O ₂ saturation greater than 90%	1	▪ O ₂ saturation less than 90% even with supplemental oxygen.....	0	TOTAL SCORE:	
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RN, LIP	<p>9. Perform safety pause, including:</p> <ul style="list-style-type: none"> • Identify and verify correct patient using two identifiers from two sources. • Verify site marking and procedure. • Verify that airway evaluation, including teeth intact, jaws open adequately, soft tissue evaluation, and verification with RN, was completed. <p>10. Document time of safety pause on the Adult Procedural Sedation Flow Sheet.</p>
RN	<p>ADMINISTRATION, ONGOING ASSESSMENT, AND MONITORING</p> <p>▶ 1. Administer all drugs used for the purpose of sedation according to individual drug/dosing protocols as defined in the ordersets in the electronic medical record.</p> <p>2. Assess and monitor all patients receiving sedation, either inpatients or outpatients, as outlined below.</p> <p>3. Report to LIP immediately any adverse reactions, complications, or side effects such as respiratory depression or hypotension.</p> <p>4. At the time sedation drugs are being given and during the procedure, monitor the following, recorded every five minutes in the Adult Procedural Sedation Flowsheet:</p> <ul style="list-style-type: none"> • Respiratory rate • Blood pressure • End tidal CO₂ for deep sedation procedures • Oxygen saturation • Heart rate • Level of sedation • Pain level (0-10 numeric scale or PABS scale) • Any abnormal baseline parameters (such as cardiac rhythm or breathing) <p>5. After the procedure or test, monitor the following, recorded every five minutes until stable for three readings in a row. Then, monitor every 15 minutes. Record in the Procedural Sedation Flow Sheet:</p> <ul style="list-style-type: none"> • Respiratory rate • Blood pressure • End tidal CO₂ for deep sedation procedures • Oxygen saturation • Heart rate • Level of sedation • Pain level (0-10 numeric scale or PABS scale) • Any abnormal baseline parameters (such as cardiac rhythm or breathing) <p>6. The patient cannot be transferred to another unit or to the care of another RN until:</p> <ul style="list-style-type: none"> • The patient's Aldrete score is 8 or greater <i>or</i> returned to pre-procedure vital signs; AND • Vital signs are stable for a minimum of 15 minutes <p>▶ Resuming pre-procedure monitoring or being transferred back to the unit without meeting these requirements requires a physician/LIP order.</p>

7. **Outpatients:** May be discharged from the hospital when *all* of the following discharge criteria are met:
- The patient's Aldrete score is 8 or greater *or* returned to pre-procedure vital signs; AND
 - Vital signs are stable for a minimum of 15 minutes
 - Minimal to no nausea
 - No need for parenteral medications
 - A minimum of one hour has elapsed after the last administration of reversal agents (naloxone, flumazenil) to ensure that patients do not become re-sedated after reversal effects have worn off.
 - Patient and a responsible adult (when possible) 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.

Definitions

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.

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 ASA 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.

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.

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. On pediatric patients, the apneic events must meet these criteria:

- 1) Recurrent desaturation less than 90% SpO₂ caused by apneas.
- 2) Apneic events occur once or more per six-minute period (ten events per hour).
- 3) Apneic events are witnessed interruptions in breathing lasting two respiratory cycles or longer in children 11 years and younger.

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.

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

Qualified personnel. Registered nurse who has successfully completed the SMC procedural sedation self-learning module annually and is a current ACLS certified provider, a PALS certified provider for pediatrics. 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.

Sedation level.

LEVEL OF SEDATION	ANTICIPATED RESPONSE
3	Awake and responding.
2	Sedated, but responds to normal voice.
1	Sedated, but responds to loud voice or movement.
0	Deeply sedated, unable to respond.

The desired level of sedation for moderate sedation is 2-1. See addendum, [Recommended Moderate Sedation Drugs and Doses](#). Examples of procedures associated with moderate sedation include the following:

- Endoscopy
- Bronchoscopy
- Cardioversion
- Thoracentesis
- Paracentesis
- Liver / lung biopsy
- Foreign body removal
- Arteriogram
- CAT scan guided biopsies
- Lumbar puncture
- Peripheral IV placement
- MRI
- 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

The desired level of sedation for deep sedation is 1-0. See addendum, [Recommended Deep Sedation Drugs and Doses: Adult](#). 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.

Numeric ten-point scale; 0 = no pain, and 10 = worst pain for adolescents and adults. The faces are used for the pediatric population or as an alternative to use with cognitively impaired adults.

Utilize the Pain Assessment Behavioral Scale (PABS) in the event the patient is unable to verbalize his or her response to the pain intensity scale:

Face. Smiling or relaxed (0), Facial muscle frown, tension, grimace (1), Frequent to constant frown, clenched jaw (2).

Restlessness. Quiet, relaxed appearance, normal movement (0), Occasional restless movement, shifting position (1), Frequent restless movement may include extremities or head (2).

Muscle tone. Normal Muscle tone, relaxed (0), Increased tone, flexion of fingers and toes (1), Rigid tone (2).

Vocalization: No abnormal sounds / ETT: comfortable on awakening (0), Occasional moans, cries, whimpers or grunts / attempting to talk around ETT (1), Frequent or continuous moans, cries, whimpers or grunts /or anxiously attempting to talk around ETT (2).

Consolability. Content, relaxed (0) Reassured by touch or talk. Distractible (1), Difficult to comfort by touch or talk (2).

Forms

None.

Supplemental Information

None.

Regulatory Requirement

The Joint Commission. TJC. 2010 CAMH – PC 03.01.01, PC 03.01.03, PC 03.01.05, PC 03.01.07 RC 02.01.03

CMS Conditions of Participation 482.52(b)(1); 482.52 (b)(3)

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Addenda

[Recommended Moderate Sedation Drugs and Doses: Adult](#)
[Recommended Deep Sedation Drugs and Doses: Adult](#)
[Adult Procedural Sedation Flow Sheet](#) (Form 36644)

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