

**Policies and Procedures**

Policy Title: Moderate Sedation	Date of Origin: April 1991
Entity(s) Covered: <input type="checkbox"/> Organization-Wide <input type="checkbox"/> Foundation <input checked="" type="checkbox"/> Hospital <input type="checkbox"/> Auxiliary <input type="checkbox"/> Pavilion <input type="checkbox"/> Medical Staff	Type:  <input type="checkbox"/> Department Specific:  <input checked="" type="checkbox"/> Multiple Departments
Policy Owner (Department): Nursing	Policy Category: Provision of Care, Treatment Services
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**Purpose:** To establish uniform requirements and minimum standards for the use of “moderate sedation” (conscious sedation) for therapeutic, diagnostic or surgical procedures performed at Jupiter Medical Center.

**Policy:**

Jupiter Medical Center provides guidelines for monitoring patients receiving moderate sedation as part of diagnostic, therapeutic, or invasive procedures. These guidelines are consistent with the following JCAHO standards:

1. Moderate sedation is provided by qualified individuals.
2. A Registered Nurse supervises perioperative nursing care.
3. A pre-sedation assessment is performed for each patient.
4. Sufficient numbers of qualified staff (in addition to the individual performing the procedure) are present to evaluate the patient, assist with the procedure, provide the sedation, monitor, and recover the patient.
5. A “Time Out” is conducted immediately before starting the procedure as described in the Universal protocol
6. Each patient’s physiological status is monitored during sedation.
7. The patient’s status is assessed immediately after the procedure and/or administration of moderate sedation.

The non-anesthesia provider managing the care of the patient who has received sedation must be able to define and recognize the different levels of sedation, and be able to provide the appropriate corresponding care. Sedation occurs on a continuum from light sedation to general anesthesia, and allows the patient to progress from one degree to another, based on the medications administered, the routes, the dosages, and the patient’s current clinical status.

**Definitions:**

1. 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.
2. Moderate Sedation / Analgesia (“conscious sedation”)  
A drug-induced depression of consciousness during which patients respond purposefully to verbal commands (note, reflex withdrawal from a painful stimulus is not considered a purposeful response) – either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patient airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.
3. Deep Sedation / Analgesia  
A drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully after repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining patent airway and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained. Deep sedation is restricted to use by anesthesiologists and practitioners credentialed to administer.

4. 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 are not arousable, 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. Anesthesia is restricted to use by anesthesiologists and practitioners credentialed to administer.

*Note:* If minimal sedation or moderate sedation inadvertently progresses to a state of deep sedation or general anesthesia:

- a. Provide any necessary emergency care, i.e., airway support.
- b. Notify appropriate resource personnel, i.e., nursing supervisor, anesthesia provider.
- c. Call a Code Blue if needed.

5. Loss of protective reflexes

An inability to handle secretions without aspiration or to maintain a patent airway independently.

6. Aldrete Score

Physiologic assessment scoring system (Appendix 1)

7. ASA Score

American Society of Anesthesiologists' Physical Status Classification (Appendix 2)

8. Level of Consciousness

Degree of responsiveness used to assess level of sedation achieved (Appendix 3)

9. Airway Status

Assessed by physician and classified based on that assessment (Appendix 4)

10. Fasting Protocol

Guidelines for evaluating patient prior to sedation in light of last intake of food and/or fluid (Appendix 5)

11. Recommended Drug Dosages

General guidelines regarding drugs and dosages used for moderate sedation (Appendix 6)

**EXCEPTIONS:**

This policy specifically excludes the following:

1. Patients who are not undergoing a diagnostic or therapeutic procedure (e.g., postoperative analgesia, sedation for treatment of insomnia).
2. Management of pain, anxiety, seizures, or physiological symptoms.
3. Sedation of patients on ventilators.
4. Sedation use in obstetrical labor.
5. Patients requiring urgent intubation or anxiolytics administered on a routine and regular basis.
6. Patients receiving local or topical anesthesia, or peripheral nerve blocks.
7. The use of any level of sedation/analgesia in any area of the hospital where an anesthesiologist is present.

**STAFFING:**

A minimum of two persons must be involved in the care of patients undergoing moderate sedation during the entire procedure:

1. The physician who performs the diagnostic, therapeutic, or surgical procedure.
2. The RN whose responsibility is directed only to the patient: to administer medication, to monitor the patient, and to observe the patient's response to both the sedation and the procedure. This RN must be with the patient at all times and may not engage in tasks that would compromise continuous monitoring during the procedure.

**LOCATION:**

Moderate sedation may be administered in various departments within the organization where appropriate monitoring can be accomplished. All appropriate equipment and credentialed personnel must be available.

**ESSENTIAL EQUIPMENT AND SUPPLIES:**

The following equipment must be available whenever sedation is to be used:

1. Minimal monitoring equipment must include blood pressure (preferably automated), cardiac monitor, and pulse oximeter with both digital and audible display.
2. Resuscitation equipment for management of airway must be readily available, along with a fully assembled and functioning suction apparatus.
3. A defibrillator and cardiac resuscitation drugs in accordance with ACLS standards must be readily available, as well as reversal agents.
4. Oxygen delivery equipment.
5. Appropriate equipment to administer intravenous fluids and drugs, including blood and blood components, is available as needed.

**QUALIFICATIONS:**

Physicians responsible for the oversight of the patient receiving sedation must meet the credentialing requirements for administration of moderate sedation.

Registered Nurses must be able to demonstrate Moderate sedation competency and have current Advanced Cardiac Life Support (ACLS) certification.

**I. PRE-PROCEDURE CARE:****A. Physician responsibilities:**

- Informed Consent: The patient/guardian must be informed by the physician about the risks, possible complications, benefits and alternatives to sedation anesthesia as a component of the planned procedure. Patients or their authorized representatives should be informed of and agree to the administration of moderate sedation before the procedure begins.
- Review of systems specific to cardiopulmonary disease, review of current medications, and history of any adverse or allergic drug reactions with anesthesia or sedation.
- History and physical required for patients undergoing invasive or surgical procedures
- Pre-procedure assessment to include:
  - Physical status assessment for anesthesia risk (ASA Classification) (Appendix 1)
  - Airway Assessment (Appendix 4)
  - A re-evaluation of the patient just prior to planned sedation.
- Before sedating a patient, a licensed independent practitioner with appropriate clinical privileges plans or concurs with the plan for sedation.

**B. RN Responsibilities**

- Document pre-procedure assessment including, but not limited to
  - Allergy status
  - NPO status; document last time food or fluids intake occurred
  - IV access
  - Vital signs (heart rate, blood pressure, respiratory rate, and oxygen saturation)
  - Level of consciousness
  - Cardiac rhythm
  - Pre-procedure Aldrete Score (Appendix 1)
- Written discharge instructions will be reviewed with the patient and/or family prior to the administration of sedation. This will include effects of sedation that may affect discharge.
- The anticipated needs of the patient will be determined in order to assess and plan the appropriate level of post procedural care.
- Conduct and document a "Time Out" immediately before starting the procedure.

**II. INTRA-PROCEDURE:****A. Physician responsibilities:**

The physician will be present within the department where the sedation is planned and be immediately available during the initial and continued administration of the sedation and will remain in attendance until the patient's vital signs and state of consciousness are at baseline or stable.

## B. RN Responsibilities

- Monitoring of the patient is to be continuous throughout the procedure and will include documentation of:
  - Vital signs, including blood pressure, pulse rate, respiratory rate, percentage of oxygen saturation, and level of consciousness assessed and recorded on the chart prior to initiation of sedation and at the end of the procedure.
  - Blood pressure, pulse rate, respiratory rate, level of consciousness and oxygen saturation must be documented at regular intervals during the procedure, at a minimum of every five minutes.
  - Cardiac monitor and pulse oximetry monitor will remain in place continuously throughout the procedural and post-procedural periods.
  - Medications administered, including dose, route, and times.
- Assess patient continuously for changes in condition and/or untoward responses; report any of these to the responsible physician immediately and initiate the appropriate intervention.
- Administer oxygen as directed.
  - *Note:* The application of oxygen reduces the incidence and severity of hypoxemia during moderate sedation. However, it must be remembered that the use of supplemental oxygen will delay the onset of clinical hypoxemia, which will delay the detection of apnea by the pulse oximeter. This emphasizes the importance of clinical monitoring of respiratory function.
  - *Fire Safety:* If electrocautery will be used during the invasive procedure, use the minimum amount of oxygen necessary to maintain adequate hemoglobin saturation. Minimize the build-up of oxygen beneath drapes and oropharynx. Position drapes so that gasses will not collect and can dissipate. If at all possible, stop supplemental O<sub>2</sub> at least one minute before and during the activation of the Electrosurgical Unit.

## III. POST-PROCEDURE CARE:

### A. Physician Responsibilities

- Procedural physician documents a post-procedure/sedation progress note immediately following the procedure.
- Provides order for discharge if Aldrete score of 9-10 (or baseline) is not reached or for transfer to PACU if required.
- Signs orders for medications administered.

### B. RN Responsibilities

- Patient monitoring will be continued into the recovery period for a time appropriate to the route and type of medication administered. A minimum recovery period of thirty minutes from the last dose of sedation administered is required, unless reversal agents are used. If reversal agents are administered the patient must be observed for two hours after the last dose of an antagonist to ensure that respiratory depression does not recur.
- All patients receiving moderate sedation will be monitored until the effects and/or possible complications of medications have been minimized, for a minimum of 30 minutes after the last dose of sedation administered. During the recovery phase cardiac monitor and pulse oximetry monitor will remain in place continuously and the following will be assessed and documented:
  - Vital signs (blood pressure, pulse rate, respiratory rate), level of consciousness, O<sub>2</sub> saturation immediately following the procedure
  - Continued monitoring of vital signs, LOC, and O<sub>2</sub> Sat every 15 minutes for 30 minutes after the last dose of sedation and until the patient reaches a 9-10 discharge Aldrete Score (or returns to baseline). Relative to their pre-procedure status, the patient should be awake, easily aroused, able to sit unaided, talk, or walk without assistance.
  - Notification of the physician if any variations occur, including but not limited to
    - Variation of +/- 20 points of BP or pulse
    - Oxygen saturation 5% or more below baseline
    - Serious cardiac arrhythmia
    - Dyspnea, apnea, diaphoresis
    - Inability to arouse
    - Need to maintain airway mechanically
    - Any other untoward or unexpected patient response
  - Post Procedure Aldrete Score
  - Pain Assessment
- As appropriate documents all medications administered via verbal order on the Physician Order

- Form
- Signs Moderate Sedation form
- Again reviews discharge instructions with patient and/or escort

#### IV. DISCHARGE CRITERIA

##### A. Inpatient

Patients will be discharged from the recovery area to other Medical Center departments when they have met the following criteria:

- Aldrete score of 9-10 (or pre-sedation baseline).
- An appropriate time has elapsed based on the route and type of medication administered; a minimum of thirty minutes has elapsed since the last dose of sedation was administered.
- Stable vital signs have been documented over a period of time appropriate to the route and type of medication administered.
- Adequate ventilation and oxygenation as evidenced by a stable respiratory rate and oxygen saturation appropriate for the patient. (Patients with room air oxygen saturation of less than 90 percent will be transported with supplemental oxygen).
- Ability to maintain/protect airway; level of alertness and orientation appropriate to pre-procedure status.

Patients meeting the above criteria may be discharged after handoff report is given to nurse on the receiving unit. Inpatients will be transported via stretcher or wheelchair accompanied by a staff member. Patients will be instructed regarding procedure and post procedure status and activities.

Patients not meeting the above criteria may be transferred only after evaluation and written order by a practitioner familiar with their care.

##### B. Outpatient

Patients will be discharged home from the recovery area when they have met the following criteria:

- All discharge criteria listed above for inpatients
- Patients who have received sedation or anesthesia are discharged in the company of a responsible designated adult. The patient will have arrangements for transportation from the hospital. Patients will not be allowed to drive themselves home.
- The patient has received written discharge instructions that have been reviewed with the patient and/or escort.

#### MONITORING AND EVALUATION

Moderate sedation practices throughout the organization shall be monitored and evaluated by each department using moderate sedation. Results are forwarded to the Quality Department to tabulate and forward to the Anesthesia Department for review and reporting to the Surgical Evaluation Committee.

#### APPENDIX [1]: Aldrete Scoring System

Activity	Score
Able to move four extremities voluntarily or on command	2
Able to move two extremities voluntarily or on command	1
Unable to move extremities voluntarily or on command	0
<b>Respiration</b>	
Able to breathe freely and cough deeply	2
Dyspnea or limited breathing	1
Apneic	0
<b>Circulation</b>	
BP $\pm$ 20% of preanesthetic level	2
BP $\pm$ 21 - 49% of preanesthetic level	1
BP $\pm$ greater than 50% of preanesthetic level	0
<b>Consciousness</b>	
Fully awake	2
Arousable on calling	1
No response	0
<b>O2 Saturation</b>	

Able to maintain O2 saturation greater than 92% on room air	2
Needs O2 inhalation to maintain greater than 90%	1
O2 saturation 90% or less even with O2 supplement	0

**APPENDIX [2]:**

**ASA Classifications: American Society of Anesthesiologists' Physical Status Classification-**

<b>Class</b>	<b>Description</b>
0	A healthy patient (e.g., varicose veins in an otherwise healthy patient).
1	A patient with mild systemic disease that in no way interferes with normal activity (e.g., controlled hypertension or diabetes or chronic bronchitis).
2	A patient with severe systemic disease that is not incapacitating (Insulin-dependent diabetes, angina, pulmonary insufficiency).
3	A patient with severe systemic disease that is a constant threat to life (Cardiac failure, major an insufficiency).
4	A moribund patient who is not expected to survive 24 hours with or without surgery (e.g., intracranial hemorrhage in coma).
5	A declared brain-dead patient whose organs are being harvested for donor purposes.
E	Suffix added when it is Emergency anesthesia in any category.

**Appendix [3]: Level of Consciousness (LOC)**

1. Alert and oriented.
2. Minimal sedation- oriented, able to answer questions.
3. Moderate sedation-easily arousable; has ability to maintain airway.
4. Deep Sedation-depressed consciousness, NOT easily aroused, but has the ability to maintain a patent airway independently. May respond purposefully to physical stimulation or verbal commands.
5. Anesthesia- unconscious, unarousable, may be accompanied by partial or complete loss of the ability to maintain a patent airway and to respond purposefully to physical stimulation or verbal commands.

**If during the intraprocedure or post procedure phase, the LOC is persistently at Level 4 or 5 and cannot be raised to a Level 3 or better, ACLS protocols should be instituted.**

**Appendix [4]: Airway Assessment**

Have patient sit upright with head tipped back, mouth opened and tongue protruded. Compare your view of the posterior pharyngeal structures with the following descriptions.

1. **Class 1:** Can visualize soft palate, fauces, uvula, tonsillar pillars
2. **Class 2:** Can visualize soft palate and fauces; tip of uvula is obscured
3. **Class 3:** Can visualize soft palate
4. **Class 4:** Can visualize hard palate only

**Appendix [5]: Fasting Guidelines**

Sedative and analgesic medications tend to impair airway reflexes in proportion to the degree of sedation achieved. Patients may be at risk of aspirating gastric contents should regurgitation occur. This risk may be minimized by allowing sufficient time for gastric emptying before the procedure begins.

For elective procedures, fasting recommendations should be considered:

1. Patients should be NPO for solids and non-clear liquids after midnight or for six to eight hours prior to the procedure; patients, however may have clear liquids up to four hours prior to the procedure. Medications and enteral feedings may be continued as ordered.
2. In emergent/urgent situations or with impaired gastric emptying (bowel obstruction, pregnancy, opioids, pain), pulmonary aspiration risk should be considered in determining timing of the procedure and target level of sedation. The physician will determine need for sedation when faced with emergent/urgent situations and waive NPO guidelines based on risk versus benefit of procedure to patient.

**Appendix [6]: Drug/Dosage Guidelines**

All drugs commonly used in moderate sedation – regardless of their margin of safety – produce general anesthesia and actually cause cardiorespiratory arrest when administered in excessive dosages. The safety of moderate sedation depends upon keeping the dosages to the minimum necessary to maintain patient comfort and successful performance of the procedure.

**O2 Saturation**

Able to maintain O2 saturation greater than 92% on room air	2
Needs O2 inhalation to maintain greater than 90%	1
O2 saturation 90% or less even with O2 supplement	0

Recommended first line drugs for intravenous moderate sedation are listed below:

**ADULT DOSAGES – IV**

Drug	Usual Dose (mg)	Usual Dose Range	Onset	Duration
Morphine (Narcotic analgesic)	0.03 - 0.15 mg/kg	2 - 10 mg	1 - 2 min	30 - 60 min
Meperidine (Narcotic analgesic)	1.0 – 1.5 mg/kg	25 - 100 mg	1 - 2 min	20 - 40 min
Fentanyl (Narcotic analgesic)	1-3 mcg/kg	25 - 200/mcg	1 min	10 - 15 min
Midazolam (Sedative)	0.5 – 1 mg	1 – 5 mg	1 - 3 min	15 - 30 min
Lorazepam (Ativan)	0.5 – 2 mg	1 – 6 mg	5 – 20 min	6 - 8 hrs
Etomidate(amidate)	0.1 – 0.2 mg/kg	5 – 20 mg	30 – 60 sec	2 – 3 min

**PEDIATRIC DOSAGES – IV**

( under the age of 12 years)

Medication – Pediatric IV/IM	Dose (Pediatric)	Comments Incremental Dose Interval
Midazolam (Versed)	0.05 – 0.1 mg/kg	Q 3 – 5 min
Fentanyl	Load 1 mcg/kg increase to 0.5 mcg/kg q 5 min up to 3 mcg/kg	Q 15 – 30 min
Morphine	0.05 – 0.1 mg/kg	Given over 5 min Q 5 – 15 min
Meperidine (Demerol)	0.5 – 1 mg	Q 5 min (max dose 2 mg/kg)
Lorazepam (Ativan)	0.02 – 0.09 mg/kg	Q 10 min
** Etomidate(Amidate)	0.1 – 0.2 mg/kg	

\*In pediatric sedation, note that benzodiazepines may be associated with disinhibition.

\*\*Dosing information in children < 10 years old limited with Etomidate

**PEDIATRIC DOSAGES PO/RECTAL/NASAL/SL**

(under the age of 12 years)

Medication – Pediatric PO/RECTAL/NASAL/SL	Dosing Guidelines (Pediatric)	Comments
Midazolam (Versed)	0.3 – 1 mg/kg po/rectal/nasal/SL	Max dose 15 mg Allow 15 – 30 min for effect
Diazepam (Valium)	a) – 0.3 mg/kg po/rectal	Max 10 mg

Specific antagonists: The benzodiazepine antagonist, flumazenil, and the narcotic antagonist, naloxone, will be immediately available when moderate sedation is being performed.

**ADULT REVERSAL DOSAGES**

<b>Drug</b>	<b>Administration</b>
Flumazenil	0.2 mg over 15 seconds; may repeat 0.2 mg up to maximum dose of 1 mg
Naloxone	0.4 - 2 mg

**PEDIATRIC REVERSAL DOSAGES**

(under the age of 12 years)

<b>Sedation / Analgesia Antagonists (Reversal Agents)</b>	<b>Administration (Pediatric)</b>
Naloxone (Narcan)	2-10 mcg/kg
Flumazenil (Romazicon)	0.01 mg/kg (up to 0.2 mg) over 15 seconds; may be repeated up to four times to maximum dose of either 0.05 mg/kg or 1 mg, whichever is lower

The goal is to administer the minimum dose necessary to achieve the desired outcome. Over dosage of the sedatives may cause significant morbidity or mortality despite the administration of these antagonists.

**Note: RN's may not administer Diprivan (Propofol), or Etomidate (Amidate) for moderate sedation.**

4/07 Merged with Surgical Services Policy Moderate Sedation 100737-26

<b>Policy Owner</b>	<b>Authorized Signature</b>
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**References and Contributing Authors:**

- Mary Bishop, RN, CNO
- Dr. M. Rosselli, Director of Anesthesia;
- Beth Suriano, RN, Director, Surgical Services
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- Clinical Policy: procedural sedation and analgesia in the emergency room; National Guideline Clearing House 2005

<b>Policy Retired Date:</b>	<b>Replacement Policy:</b>
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