

THE UNIVERSITY OF CONNECTICUT HEALTH CENTER  
JOHN DEMPSEY HOSPITAL  
ADMINISTRATIVE MANUAL

SECTION: PATIENT CARE

NUMBER: 08-013

SUBJECT: MODERATE SEDATION

PAGE: 1 of 5

POLICY:

1. Moderate sedation is the administration of sedation, with or without analgesia, in any setting, by any route, for a diagnostic or therapeutic procedure, where there is a reasonable expectation that the sedation and/or analgesia will not result in the loss of protective reflexes or the ability to respond purposefully to commands. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.
2. The care of patients receiving moderate sedation is the responsibility of a qualified, licensed independent practitioner with appropriate clinical privileges. Moderate sedation is practiced in various departments within UCHC.
3. The practitioner must obtain informed consent for the moderate sedation procedure and document the consent in the patient record.
4. The choice of sedative and analgesic medications to be administered will be based on the knowledge, training, experience and license of the practitioner administering moderate sedation. Subsequent doses of sedative and analgesic medications should not be administered until sufficient time has elapsed for the effects of previous doses to be assessed. Examples of sedative and analgesic medications are shown in Attachment 1.
5. There will be an additional staff member, in addition to the licensed, independent practitioner, whose sole responsibility is to monitor physiologic parameters and assist with any supportive or resuscitative measures that may be necessary during moderate sedation. This person must be competent in basic life support skills for the age of the patient being monitored, and shall have specific assignments in the event of an emergency.
6. Age- and size-appropriate advanced cardiac life support and airway management equipment as well as personnel qualified to provide advanced life support will be immediately available on site whenever moderate sedation is administered.
7. The Moderate Sedation/Analgesia Flow Sheet or computerized equivalent will be the documentation / process improvement tool for all moderate sedation done at UCHC.
8. Routine quality assurance monitoring and performance improvement will be done in accordance with UCHC policy.
9. This policy will be reviewed annually by the Department of Anesthesiology.

SECTION: PATIENT CARE

NUMBER: 08-013

SUBJECT: MODERATE SEDATION

PAGE: 2 of 5

**DESIRED PATIENT OUTCOME:**

1. Patient will maintain protective reflexes throughout the procedure.
2. Patient will receive appropriate monitoring throughout the procedure to maintain safe moderate sedation.
3. Patient and family will understand benefits and risks of moderate sedation.
4. Patient comfort will be maintained throughout the planned procedure.
5. Patient will return to usual home environment, unit or other facility.
6. The patient, significant other, parent, and/or responsible person will receive necessary teaching to ensure an optimal level of functioning after discharge as appropriate.

**CLINICAL ASSESSMENT AND CARE:**

1. The procedure/test is performed only after an appropriate history (including moderate sedation history), physical examination and any indicated laboratory and x-ray examinations have been completed, and the pre-procedure or pretest diagnosis has been recorded in the medical record.
2. Patients undergoing sedation/analgesia for elective procedures should not drink fluids or eat solid foods for a sufficient period of time to allow for gastric emptying prior to their procedure, as recommended by the American Society of Anesthesiologists "Guidelines for Preoperative Fasting" (Attachment 3). In urgent, emergent, or other situations where gastric emptying is impaired or there is the possibility of gastric contents, the potential for pulmonary aspiration of gastric contents must be considered in determining (1) the target level of sedation, (2) whether the procedure should be delayed or (3) whether the trachea should be protected by intubation.
3. The practitioner responsible for the patient authenticates and records a pre-procedure or pretest diagnosis or test. The plan for sedation (e.g., i.v., oral) is documented in the patient record.
4. A pre-sedation review will be performed by the practitioner, which includes an ASA physical status.
5. A pre-procedure and a post-procedure acute pain score (0-10) will be recorded; comfort levels will be monitored throughout the procedure in conjunction with the level of consciousness and response to procedure (per flowsheet).

SECTION: PATIENT CARE

NUMBER: 08-013

SUBJECT: MODERATE SEDATION

PAGE: 3 of 5

6. Pre-Procedure Monitoring - baseline values will be recorded immediately prior to the start of the procedure for the following criteria:
  - level of consciousness
  - heart rate
  - blood pressure
  - oxygen saturation
  - EKG pattern in patients with significant cardiovascular disease or when dysrhythmias are anticipated or detected
  
  - Hypertension management - If the patient has a systolic level of  $\geq 200$  mmHg or a diastolic level of  $\geq 110$  mmHg and the procedure is elective, treat hypertension prior to proceeding. Relaxation techniques may be used and / or minimal sedation may be administered; do not exceed sedation dose of 2 mg midazolam in patients under 65 years or 1 mg for patients 65 or older.
  - The case may not proceed unless both systolic and diastolic levels are below 200 mmHg and 110 mmHg respectively, unless the blood pressure is documented as being under optimal control. If the attending physician wishes to continue with the procedure and the BP remains at or above either of these levels, the attending physician must enter an explanatory note in the patient record prior to starting the procedure. If the case is cancelled, hypertension should be managed acutely and patient instructed regarding follow-up.
  
7. Intraprocedure Monitoring - continuous monitoring of oxygenation and airway patency; rate, depth and pattern of ventilation; and heart rate and blood pressure will occur throughout the procedure. Values for all criteria, as indicated in #4 above, will be recorded at the following intervals:
  - q 5 min x 3 after each administration of medication
  - q 5 min for levels of consciousness of 1 or 0
  - q 15 min at all other times

The various levels of consciousness occur on a continuum. The patient may progress from one level to another. This continuum is recorded on the flow sheet and is defined as:

- awake (4): awake, alert
- minimal (3): ptosis, slight slurring of speech
- moderate /conscious (2): spontaneous eye closure, delayed response to verbal commands, appropriate response to verbal/tactile stimulation
- deep (1): responds only to repeated or painful stimulation
- general anesthesia (0): unresponsive to painful stimulation

8. Post Procedure Monitoring - all patients who have received moderate sedation will be monitored in the treatment area or in a designated recovery area as follows:
  - vital signs, pulse oximetry, and pain score q 15 min x 2 until return to baseline, or continue q 15 min until discharge criteria met
  - Patients who have received reversal agents (naloxone or flumazenil) will be monitored for a minimum of 60 minutes after administration of reversal agents, and continuing q 15 min beyond until discharge criteria met

### **Post Procedure Reportable Conditions:**

The following changes in a patient's condition during recovery require assessment / intervention by a Physician / APRN / PA:

1. Heart rate – adults: less than 60 or greater than 100 beats/min AND differing by more than 15% from its baseline value.  
Heart rate – pediatrics: differing by more than 15% from its baseline value.
2. Blood pressure – adults: systolic less than 90 or greater than 150 mmHg AND differing by more than 15% from its baseline value.  
Blood pressure - pediatrics: systolic blood pressure differing by more than 15% from baseline.
3. Oxygen saturation on room air less than 93% AND more than 3% lower than its baseline value.
4. Inappropriate change in patient's behavior or personality or a decreased level of consciousness
5. Any other condition which the recovery nurse believes warrants the physician's intervention.

### **Discharge Criteria / Desired Outcome**

1. Patient retains the ability to maintain and protect the airway by being able to swallow and cough.
2. Patient displays no signs of respiratory distress, such as snoring, stridor, suprasternal retraction or decreased O<sub>2</sub> saturation or respiratory rate.
3. Patient is fully oriented to time, person and place, or return to baseline mentation.
4. Patient will experience minimal or no nausea or vomiting.
5. Dizziness or lightheadedness, if present, does not interfere with mobility.

ADMINISTRATIVE MANUAL

SECTION: PATIENT CARE

NUMBER: 08-013

SUBJECT: MODERATE SEDATION

PAGE: 5 of 5

6. Vital signs are stable for a minimum of 30 minutes. Skin is pink in color. O<sub>2</sub> saturation greater than 95% breathing room air, or has returned to pre-procedure value.
7. Patient performs age-appropriate ambulation (walk, sit, stand).
8. Dressing is dry and intact, if applicable.
9. Minimal or no pain prior to discharge, or at level deemed acceptable by patient. Assess and document (0-10 pain scale).

**DISCHARGE PROCESS:**

1. A practitioner who has appropriate clinical privileges and who is familiar with the patient is responsible for the decision to discharge the patient when the procedure/test services are performed on an ambulatory basis.
2. When the practitioner is not personally present at the time of discharge, patients may be discharged after a registered nurse, advanced practice registered nurse, or physician's assistant has assessed the patient and found that the relevant discharge criteria have been fulfilled.
3. A designated individual who will be responsible for the patient will accompany patients receiving moderate sedation on an ambulatory basis at discharge.
4. The patient and the responsible adult are instructed to contact the practitioner if the patient develops respiratory difficulty or is unable to tolerate oral fluids or void within 8 hours after discharge.
5. Post-procedure written discharge instructions will be provided to the patient/designated individual and shall include specific information regarding both the procedure and medications administered. A telephone number for the patient to call in the event of an emergency will be included with the instructions.

---

Mike H. Summerer, M.D.  
Hospital Director

---

Richard H. Simon, M.D.  
Chief of Staff

Date Issued: 1/95

Date Revised: 10/97, 4/98, 9/00, 11/03, 1/07, 1/08, 9/08, 11/08, 7/09

Date Reviewed: 5/03

## ATTACHMENT ONE

### Examples of Medications Used for Moderate Sedation (Conscious Sedation) and Reversal Agents

<b>Medication</b>	<b>Typical Dose Range</b>	<b>Route</b>
Chloral Hydrate	50-100 mg/kg (max < 2 gm)	Oral, pr
Diazepam (Valium®)	0.05-0.2 mg/kg 0.1-0.4 mg/kg	i.v. oral
Fentanyl	0.5-3.0 mcg/kg	i.v.
Ketamine	1-3 mg/kg 0.2-1.0 mg/kg	i.m. i.v.
Lorazepam (Ativan®)	0.02-0.05 mg/kg	i.v.
Meperidine (Demerol®)	0.5-1.0 mg/kg	i.v.
Midazolam (Versed®)	0.01-0.1 mg/kg	i.v.
Morphine	0.05-0.2 mg/kg	i.v.
Nitrous Oxide <sup>1</sup>	Up to 50% in O <sub>2</sub>	inhaled
Pentobarbital (Nembutal®)	2-10 mg/kg	i.v.
Propofol <sup>2</sup>	25-100 mcg/kg/min	i.v. infusion
<sup>1</sup> Nitrous oxide use is limited to locations with adequate scavenging equipment. <sup>2</sup> Use of propofol for moderate sedation is limited as described in Attachment 2.		
<b><u>Reversal Agents</u></b>		
Flumazenil (Romazicon®)	5-15 mcg/kg	i.v.
Naloxone (Narcan®)	1-10 mcg/kg	i.v., i.m.

## **ATTACHMENT TWO**

### Special Requirements for the Use of Propofol for Moderate Sedation (Conscious Sedation)

1. Use of propofol is strictly limited to practitioners (anesthesiologists, emergency physicians, oral surgeons) with training in the management of unintubated, sedated and paralyzed patients.
2. The practitioner must be familiar with the indications and contraindications for propofol as well as the therapeutic effects, side effects, and complications associated with its use.
3. Use of propofol by emergency physicians is limited to the Emergency Department, and use by oral surgeons is limited to the oral surgery suite.
4. Arterial oxygen saturation and respiratory rate and depth must be continuously monitored during moderate sedation with propofol. Blood pressure and heart rate must be measured at least every 5 minutes throughout the procedure. An individual who is not performing the diagnostic or therapeutic procedure, and must continue until the patient's level of consciousness must perform monitoring and vital signs have returned to their pre-sedation state.
5. Functioning suction apparatus as well as equipment for providing positive pressure ventilation and endotracheal intubation must be immediately available in the treatment area whenever propofol is administered.
6. Refer to Attachment 1 for examples of propofol doses used for moderate sedation.

## ATTACHMENT THREE

### Summary of American Society of Anesthesiologists Pre-Procedure Fasting Guidelines<sup>1</sup>

<u>Ingested Material</u>	<u>Minimum Fasting Period</u> <sup>2</sup>
Clear liquids <sup>3</sup>	2 h
Breast milk	4 h
Infant formula	6 h
Non-human milk <sup>4</sup>	6 h
Light meal <sup>5</sup>	6 h

<sup>1</sup> These recommendations apply to healthy patients who are undergoing elective procedures. They are not intended for women in labor. Following the guidelines does not guarantee a complete gastric emptying has occurred.

<sup>2</sup> The fasting periods noted above apply to all ages.

<sup>3</sup> Examples of clear liquids include water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee.

<sup>4</sup> Since non-human milk is similar to solids in gastric emptying time, the amount ingested must be considered when determining an appropriate fasting period.

<sup>5</sup> A light meal typically consists of toast and clear liquids. Meals that include fried or fatty foods or meat may prolong gastric emptying time. Both the amount and type of foods ingested must be considered when determining an appropriate fasting period.

<sup>1</sup>**American Society of Anesthesiologists Practice Guidelines For Sedation And Analgesia By Non-Anesthesiologists.** Anesthesiology 2002;96:1004-1017.