PURPOSE
To ensure safe administration of moderate sedation medication by non-anesthesia personnel. 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, spontaneous ventilation is adequate and cardiovascular function is maintained.

POLICY
I. This policy provides specific requirements for safe care of adult and pediatric patients during the delivery of medications for moderate sedation:
   a. Only designated RNs who have demonstrated competency in moderate sedation medication administration and management of complications are authorized to administer moderate sedation with a physician order.
   b. A physician or other Health Professional Affiliate (HPA) who administers/orders sedation medication must have delineated clinical privileges as established by medical bylaws will be referred to as “sedation practitioner” within this document.
   c. An order is written or authenticated by a sedation practitioner for all drugs administered for sedation or reversal of sedation.
   d. This policy is in effect when moderate sedation is administered in any location with personnel and equipment that comply with the requirements delineated in this policy.
   e. This policy does not apply to situation such as minimal sedation for the purpose of anxiolysis; for the purpose of pain management, sedation for patient on
ventilators, IV sedation for seizures or when a qualified anesthesia provider is in attendance.

PROCEDURE

I. American Society of Anesthesiologists (ASA) Classification: See Resource A
   A. Adult Patients receiving moderate sedation have an ASA risk assessment class of 1, 2 or 3.
   B. Pediatric patients receiving moderate sedation have an ASA risk assessment class of 1 or 2.
   C. NICU patients, see addendum: Moderate sedation of neonates for neuroimaging.
   D. Sedation practitioner determines the ASA classification.
   E. Except with a life-threatening emergency, a pre-procedure consultation with a medical specialist is performed before administration of sedation to patients with significant underlying conditions (i.e. pregnancy, severe hepatic, cardiac, pulmonary or renal disease or potentially difficult airway). The choice of specialist depends on the condition and urgency of the situation.

II. Personnel/Training:
   A. The qualifications of individuals providing moderate sedation include:
      1. Current BLS
      2. Current ACLS for adult patients
      3. Current NRP and/or PALS for patients up to age 16
      4. Completion of Moderate Sedation Validation process
   B. A minimum of two personnel are present during the procedure; one individual performing the procedure (physician) who has approved privileges to administer sedation and one registered nurse to monitor the patient.
   C. If the procedure requires complex involvement of the nurse sufficient to prevent continuous monitoring and recording, then a third person’s presence is required to assist with the procedure.
   D. Verify Medical/HPA Staff Credentials: This information is readily available on the hospital internet, Medical Staff Privilege forms.

III. Pre-Procedural Assessment: Documented in medical record
   A. The physician or HPA fully completes
      1. A pre-sedation assessment
      2. Obtain informed consent including risks/benefits/alternatives.
      3. Identify the plan for sedation
      4. Perform a re-assessment immediately prior to start of procedure
      5. Clarify and address resuscitation plans for patients who have DNR orders with patient and document.
   B. The physician’s pre procedure assessment includes but not limited to:
      1. Focused physical exam including auscultation of heart and lungs and evaluation of airway, abnormalities of major organ systems and exam specific to procedure to be performed and level of consciousness (LOC).
      2. Current medication
      3. Allergies
4. History of current illness
5. Smoking history
6. History of use of street drugs and alcohol
7. NPO status (See Resource B as guideline)
8. Previous adverse experience with sedation
9. ASA Score
10. Mental status

C. The RN completes a preprocedure health assessment which includes but not limited to:
   1. Obtain accurate weight (adult/child) in kilograms
   2. Allergy verification
   3. Time and nature of last oral intake
   4. Blood glucose for all diabetic patients

IV. Pre-Procedure Preparation
A. Pre-Procedure baseline assessment is recorded immediately prior to the start of the procedure and includes all of the following vital signs, but not limited to:
   1. LOC (Level of consciousness)
   2. Heart rate
   3. Respiratory rate
   4. Non Invasive Blood pressure
   5. Oxygen saturation

B. Assess the availability of a responsible adult to accompany the patient home after the outpatient procedure.
C. Start IV or validate patency of IV access.
D. Record baseline cardiac rhythm.
E. Validate present at the bedside or easy accessibility to
   1. Emergency resuscitation equipment, including defibrillator
   2. O2 equipment with cannula or face mask or Bag-Valve mask
   3. Vital sign monitoring equipment with pulse oximetry and End-Tidal CO2, if capnography is being used.
   4. Suctioning equipment
   5. Emergency drugs, including reversal agents
   6. Specialized monitoring may be required in special conditions (i.e. fetal monitor)

V. Intra-procedure Monitoring
A. The patient is continuously monitored throughout the procedure and the following is documented in the medical record:
   1. Vital signs, including heart rate, SpO2, blood pressure and respiratory rate are recorded
      a. Prior to initiation of sedation.
      b. After administration of medication.
      c. At regular intervals at least every 10 minutes. Frequency is determined by assessment of patient response to drug, procedure, age and changes in patient condition.
d. At the end of the procedure.

2. Level of Consciousness using the Ramsey sedation scale (See Resource C)
   a. Prior to initiation of sedation.
   b. At regular intervals at least every 10 minutes. Frequency is determined by assessment of patient response to drug, procedure, age and changes in patient condition.
   c. At the end of the procedure.
   d. If the airway is compromised or Ramsey greater than 3, the physician is notified and activities in (Resource D) are initiated.

3. Document any cardiac rhythm changes.

4. Capnography (CO2) is recommended for use especially in patients whose ventilation cannot be directly observed, monitoring is continuous and record end tidal CO2 with vital signs. Capnography monitoring can be discontinued when the procedure is complete and EtCO2 is within +/-20% of baseline value for at least one minute.

VI. Post Procedure
   A. Post Procedure Monitoring - all patients who have received moderate sedation are monitored in the treatment area or in a designated recovery area as follows:
      1. Vital signs, pulse oximetry, and pain score (i.e. 0-10 pain score or pediatric pain score or based on developmental age) every 15 minutes until discharge criteria met for a minimum of 30 minutes.
      2. Patients who have received reversal agents are observed for two hours for flumazenil and one hour for naloxone use. Vitals signs are recorded every 15 minutes until discharge criteria met.

VII. Discharge Guidelines:
   A. 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 O2 saturation or respiratory rate.
      3. Patient is fully oriented to time, person and place, or return to baseline mentation.
      4. Vital signs are stable for a minimum of 30 minutes.
      5. Pain at level deemed acceptable by patient.

VIII. Medication Administration Information:
   A. Verify calculation of all pediatric doses with another RN, physician or pharmacist.
   B. IV Medications listed below are commonly used for/with moderate sedation, but other sedative and analgesic drugs may also be used.
      1. Sedative Drugs:
         a. Midazolam (Versed)
         b. Ketamine Hydrochloride (ED department only)
         c. Diazepam (Valium)
d. Propofol (Diprivan) (*ED physician only must administer can not be administered by nursing*)
e. Etomidate (ED physician only)

2. Analgesic Drugs:
   a. Fentanyl (Sublimaze)
   b. Morphine
   c. Meperidine (Demerol)

3. Reversal agents:
   a. Flumazenil (Romazicon) For reversal of Benzodiazapines (i.e.) Valium or Versed
   b. Naloxone (Narcan) For reversal of Opioids (i.e.) Demerol or Fentanyl or Morphine

PROTOCOL

Reference:
5. AORN 2012 Perianesthesia Nursing Standard and Recommendation for Practice Recommendations.

Archive Dates
Reviewed: 1/02
Revised: 5/94, 7/94, 11/94, 1/98, 9/99, 3/00, 12/00, 2/01, 3/01, 5/02, 1/03, 4/03, 4/05, 7/06, 6/07, 2/09, 10/09, 2/10, 5/11, 8/12, 6/13
Supersedes: Conscious Sedation 5/02
Addendum: Moderate sedation of neonates for neuroimaging

1. Obtain informed consent, per hospital policy.
2. The physician or Health Professional Affiliate (HPA) ordering sedation must be credentialed in Moderate Sedation, per hospital policy.
3. The physician or HPA determines and documents the ASA classification, per hospital policy.
4. The ASA pre-procedure fasting guidelines are followed, except for emergent events
   a. NPO for 4 hours for breast milk and
   b. NPO for 6 hours with formula
   c. On a case-by-case basis, with a physician order, gastric contents may be aspirated by an orogastric/nasogastric tube prior to administration of sedation.
5. A physician or HPA credentialed in Moderate Sedation and RN accompany and remain with the infant until returning to the NICU. A respiratory therapist accompanies the infant if ventilatory support is required.
6. Transport the infant in a thermally-supportive environment with ancillary equipment including an oxygen source, resuscitation bag and mask, suctioning equipment and emergency airway supplies (including an LMA – laryngeal mask airway).
7. Perform continuous monitoring of HR, BP and oxygen saturation and visual assessment of respiration from the time of sedation administration until the start of the MRI.
8. After arrival in the MRI suite, continuous end-tidal CO2 monitoring is initiated in lieu of visual inspection of respirations.
9. Perform continuous monitoring of end-tidal CO2, HR and oxygen saturation during the MRI.
10. Administer supplemental oxygen via nasal cannula to maintain oxygen saturation greater than or equal to 92%.
11. If end-tidal CO2 measurements rise greater than 20% above the baseline, Stop the MRI study, assess the infant directly, and take corrective action.
12. Nursing Documentation
   a. Pre-sedation: Ramsey score and baseline vital signs (HR, RR, BP, oxygen saturation).
   b. Post-sedation: Ramsey score and vital signs every 10 minutes
   c. During neuroimaging: HR, oxygen saturation, and end-tidal CO2 every 10 minutes
      BP every 10 minutes if hypotension documented post-sedation
   d. Post-neuroimaging: Ramsey score and vital signs every 10 minutes until infant returns to NICU and returns to the pre-sedation Ramsey score.

Reference:
1. ASA Class 1 The patient has no organic, physiologic, biochemical, or psychiatric disturbance. The pathologic process for which the operation is to be performed is localized and does not entail systemic disturbance. Normal healthy patient with no systemic disease

2. ASA Class 2 Mild to moderate systemic disturbance caused by either the condition to be treated surgically or by other pathophysiologic processes (e.g., non or only slightly limiting organic heart disease, mild diabetes, essential hypertension, anemia, obesity, or smoking). Patient with mild to moderate systemic disease such as diabetes or hypertension.

3. ASA Class 3 - Severe systemic disturbance or disease from whatever cause, even though it might not be possible to define the degree of disability with finality (e.g., severely limiting organic heart disease; severe diabetes with vascular complications; moderate to severe degrees of pulmonary insufficiency; angina pectoris or healed myocardial infarction). Patient with severe systemic disturbance or disease with a functional limitation that is not incapacitating such as active cardiac, pulmonary or renal disease.

4. ASA Class 4 – Indicative of the patient with severe systemic disorders that are already life threatening, not always correctable by operation (e.g., marked signs of cardiac insufficiency; persistent angina syndrome; active myocarditis, advanced degrees of pulmonary, hepatic, renal or endocrine insufficiency).

5. ASA Class 5 – The moribund patient who has little chance of survival but is submitted to operation in desperation. “E” is added if surgery emergent.
Resource B

NPO Status

For elective sedation: Follow American Society of Anesthesiologist Pre-procedure fasting guidelines. These apply to healthy patients who are undergoing elective procedures of all ages.

<table>
<thead>
<tr>
<th>Ingested material</th>
<th>Minimum fasting period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear liquids</td>
<td>2 hours</td>
</tr>
<tr>
<td>Breast Milk</td>
<td>4 hours</td>
</tr>
<tr>
<td>Infant formula</td>
<td>6 hours</td>
</tr>
<tr>
<td>Nonhuman milk</td>
<td>6 hours</td>
</tr>
<tr>
<td>Light meal</td>
<td><strong>6 hours</strong></td>
</tr>
<tr>
<td>Fatty meal</td>
<td>8 hours</td>
</tr>
</tbody>
</table>

Light meal typically consists of toast and clear liquids.

For urgent or emergency procedure: carefully weigh benefits against risks; consider delaying the procedure, use lightest sedation possible. The decision of whether to proceed with the sedation is based upon the judgment of the treating physician.
Resource C
Ramsey Level of Sedation

Ramsey level of sedation scale:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Awake; Agitated/Anxious or Restless</td>
</tr>
<tr>
<td>2</td>
<td>Awake; Cooperative/Calm/Oriented</td>
</tr>
<tr>
<td>3</td>
<td>Drowsy; Responds to voice commands</td>
</tr>
<tr>
<td>4</td>
<td>Asleep; Brisk response loud auditory stimuli or light glabellar tap or deep pain</td>
</tr>
<tr>
<td>5</td>
<td>Asleep; sluggish response to loud response or light glabellar tap</td>
</tr>
<tr>
<td>6</td>
<td>Asleep; No response</td>
</tr>
</tbody>
</table>

Resource D
Steps to implement when airway compromised or Ramsey greater than 3

1. If loss of protective reflexes occurs as evidenced by:
   a. Failure to arouse
   b. Respiratory rate less than 10/min
   c. Lower SpO2 less than 92%
   d. CO2 level decreasing
2. Instruct patient to take a “deep breath”.
4. Stop administration of sedation medication.
5. Recheck vital signs.
6. Is patient spontaneously breathing?
7. **If Yes:** Apply or maintain O2, check airway reflexes
8. **If No:** Then:
   a. Establish an airway (jaw thrust, nasal/oral airway)
   b. Reassess: Is patient breathing? (Consider reversal)
   c. If still **no:** apply positive pressure ventilation with mask/bag.
   d. Consider reversal agents (obtain order).
Reassess and continue to monitor until patient return to baseline level of sedation.