



**Association for Radiologic & Imaging Nursing**  
**Clinical Practice Guideline**  
**Moderate Sedation and Analgesia**

**Overview:** Moderate Sedation and Analgesia medications are frequently administered by Imaging Nurses. Moderate Sedation and Analgesia is defined as 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.<sup>1</sup> The American Society of Anesthesiologists (ASA) has published a series of Practice Guidelines for sedation care providers.

**Target Audience:** Healthcare Providers, Radiological Nurses, Radiological Technologists, Medical Students and Interns, Radiology Residents, Radiologists, Radiology Managers

**Content/Strategies:** Patient comfort and safety are paramount in the nursing process. Invasive procedures performed for diagnostic and/or therapeutic reasons may be anxiety producing and/or painful for patients.

- To enhance the patient's procedural experience, medications such as a sedation and/or analgesia agents are administered.
- The ASA has published a series of guidelines, which are generally followed during the administration of moderate sedation/analgesia.
- The ASA has recently endorsed the implementation of capnography monitoring to better monitor the ventilatory status of patients receiving moderate sedation/analgesia.
- Nurses involved with sedation and analgesia should be experienced in Advanced Cardiac Life Support (ACLS)/Pediatric Advanced Life Support (PALS) and airway management. In some states, certification for sedation providers is necessary.
- The individual involved in Moderate Sedation and Analgesia administration should always reference and follow their organization's policy and procedure.
- Medications:
  - Direct conversation for medication orders occurs between radiologist and nurse with nurse performing "read back, repeat back" when verbal orders are prescribed by physician.
  - Midazolam (Versed) is generally the benzodiazepine of choice due to its rapid onset of action, short half-life, and reasonable recovery time. Dosage guideline is 0.5mg – 2 mg intravenously over 2-3 minutes and repeated at 5-minute intervals as indicated, monitoring the patient so as to prevent untoward events. Maximum dose is 5 mg administered over one hour.
  - Precautions should be used when administering the above medication to the elderly and chronic obstructive pulmonary disease (COPD) population. An initial dose of Midazolam 0.5 mg intravenously is prudent practice.
  - Sublimaze (Fentanyl) is generally the analgesic agent of choice due to its rapid onset of action, short half-life and reasonable recovery time. Dosage guideline is 25 mcg – 50 mcg intravenously over 2-3 minutes and repeated at 5-minute intervals as indicated, monitoring the patient so as to prevent untoward events. Maximum dose should not exceed 200 mcg within one hour.
  - Flumazenil (Romazicon) is the reversal for benzodiazepine medications. Dosage is 0.2 mg IV over 15 seconds, waiting 45 seconds to note effect. Medication may be repeated at 60-second intervals as above up to 1 mg. Onset of action is 45 – 60 seconds, with duration of effect for 3 hours. If sedation recurs, repeat dose at 20-minute intervals. Maximum dose is 3 mg/hour. Administering Romazicon faster than 45 sec- 1 min. has led to seizure activity in some patients
  - Naloxone (Narcan) is the reversal agent for opioid medications. Dosage is 0.1mg – 0.2 mg IV over 15 seconds, subsequent dose is 0.4 mg IV, administered every 2 – 3 minutes as indicated. Duration of effect is 60 – 90 minutes. Maximum dose is 10 mg.
- Patient assessment pre-sedation/pre-procedure:

- Physician assessment should be conducted to include: (1) review of history and physical examination, medication, allergies; (2) determination of Mallampati Score and ASA classification; (3) performance and documentation of a cardio-pulmonary assessment. The physician performing the procedure must obtain informed consent.
- Nursing assessment should include a review of the H&P, medications, allergies, last food/fluid intake, weight, height (in children) and should include (1) a cardio-pulmonary assessment and level of consciousness (LOC), (2) current VS measurement to include baseline heart rate, blood pressure, pulse oximetry, ventilatory status, location and severity of pain and LOC.
- Universal Protocol is completed as per institution policy.
- Intra-procedure monitoring: Patients are continuously monitored via a cardiac monitor (rate and rhythm), NIBP, respiratory frequency, oxygen saturation, ventilatory status, and depth of sedation with parameters measured and documented every 5 minutes
- Reversal agents are at hand in case needed.
- Post-procedure monitoring: patient recovery begins at the end of the procedure and continues for a minimum of 30 minutes post procedure (documented at 15 and 30 minutes intervals) and/or until patient returns to their baseline status.
- Should reversal agents be administered, the patient should be monitored a minimum of 2 hours. This time frame is based on the patient's recovery and return to baseline status.
- Caregiver to caregiver communication occurs prior to the procedure and as needed throughout the procedure. Patient handoff occurs from the imaging department nurse to the patient's nurse prior to the patient's transfer from the imaging suite. An opportunity to clarify the information and ask questions is then provided.
- Post procedure discharge instructions are reviewed and provided in written format. These are reviewed with the patient and responsible person accompanying the patient home.
- Documentation of the care provided and medications administered occurs as per institution's policy and procedure.

#### References:

1. Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists. *Anesthesiology* 2002; 96, 4: 1004-1017
2. Moderate Sedation, Adult Plan of Care. Frankford Hospital, Philadelphia, PA 2007.
3. Clinical Practices of the University of Pennsylvania Policy Manual. Hospital of the University of Pennsylvania.
4. Joint Commission 2008.
5. ARNA Orientation Manual. 2008.

#### Other Resources

American Society of Anesthesiologists House of Delegates Report, October 2005.

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