MURRAY-CALLOWAY COUNTY HOSPITAL
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Patient Care Standards Manual
Reference Number: B-003

TITLE:

Moderate Sedation Management Protocol

POLICY STATEMENT:

Murray-Calloway County Hospital has developed this protocol to provide guidelines for monitoring sedation administered by non-anesthesiologists to patients undergoing invasive, manipulative, or constraining procedures in a manner that is uniform throughout the organization.

PROCEDURE(S) FOR IMPLEMENTATION:

1. Definitions:
   a. 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.
   b. 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.
   c. 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. Patient may require assistance in maintaining a patent airway and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.
   d. 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.
2. This protocol relates to the care of patients requiring moderate sedation/analgesia by non-anesthesiologists, e.g., CRNA's, MD's, PA's, etc.
3. Any practitioner not certified as an anesthesia provider may not administer medications classified as anesthetics, including but not limited to Ketamine, Propofol, Sodium Pentothal, and Brevital. An anesthesiologist or CRNA credentialed to administer such anesthetics may do so and must continue to remain with the patient after the administration of the drug.
4. Anesthetizing Locations: Sedation is practiced in the following areas:
   a. Emergency Department;
   b. CCU;
   c. CCL/Radiology;
   d. Endoscopy Unit;
   e. Operating Room; and
   f. PACU.

5. Patient Selection:
   a. The physician/PA/NP is responsible for identification of patients who are appropriate for any short term therapeutic, diagnostic, or surgical procedure and subsequent use of sedation.
   b. The Anesthesiology Service is available for consultation in the instance of questions regarding the appropriate delivery of sedation.
   c. There must be documented pre-procedure evaluation of the patient prior to any short-term therapeutic, diagnostic, or surgical procedure requiring sedation.
   d. Patients for sedation must have a responsible driving adult to accompany them home after the procedure. This is verified prior to giving sedation. If no ride/responsible adult can be arranged, the procedure will be cancelled or the hospital will ensure safe transport of the patient home.
   e. NPO requirements are dependent on the procedure performed.
6. Informed Consent: The patient should be made aware of the risks associated with sedation, analgesia, and anesthesia, along with the procedure performed. The informed consent for any short-term therapeutic, diagnostic, or surgical procedure in which sedation is to be employed should include the risks of sedation, as appropriate.
   KEYPOINT: Consent for sedation can be incorporated into any existing procedure specific consent form.
7. Required Personnel:
   The available personnel for any procedure employing sedation shall be, but not limited to:
   a. The operator (person, e.g., physician, surgeon, etc. performing the procedure);
   b. The monitor (an assistant trained to monitor appropriate physiological parameters and to assist in any supportive or resuscitative measures required, e.g., RN). The sedation monitor must be able to monitor and respond appropriately to the patient's response to medication, including adverse drug reactions, and at a minimum, changes in vital signs, level of consciousness, presence or lack of patent airway, oxygen saturation, and patient's response to medication.

   KEYPOINT: These personnel are available to the patient from the time of the administration of the sedation until recovery of the care of the patient is transferred to personnel performing recovery care.
8. Qualifications for Personnel Administering and Monitoring Sedation:
   a. Physician/PA/NP: The physician/PA/NP administering sedation is required to be credentialed to do so through the medical staff appointment/reappointment process. The granting of privileges in sedation recognizes that the physician/PA is:
      1) Familiar with proper dosages, administration, adverse reactions, and interventions for adverse reactions and overdoses.
      2) Able to recognize an airway obstruction.
      3) Assess total patient care requirements or parameters, including but not limited to blood pressure, pulse, respirations, oxygen saturation, level of consciousness, and cardiac rhythm.
      4) Knowledgeable and skillfull to intervene in the event of complications.
   b. Nursing: The RN monitoring patients receiving sedation is required to demonstrate the following competencies on an annual basis:
      1) The use of oxygen, adjunct devices and airway management.
      2) Initiating and maintaining I.V. therapy.

3) Dysrhythmia interpretation and treatment.
4) Recognition of the cardiovascular and respiratory side effects of sedatives, as well as the variability of patient response.
KEYPOINTS: BLS is required for all RNs (see separate policy).

ACLS is recommended for all RNs with responsibilities for monitoring sedation.

9. Equipment List: The available equipment must be present, in working order, and be ready for use in the area where sedation is being administered:
   a. Emergency cart with intubation equipment, bag-valve mask, and defibrillator/cardiac monitor;
   b. Oxygen source;
   c. Suction at bedside;
   d. Appropriate oral and nasal airways (pediatric and adult as appropriate);
   e. Non-invasive blood pressure machine;
   f. Pulse oximeter; and
   g. Reversal agent(s).
10. All documentation related to the administration of moderate sedation/analgesia by a non-anesthesiologist will be recorded on the Moderate Sedation Management Record.
11. Pre-procedure monitoring includes the following:
   a. Date.
   b. Diagnosis.
   c. Allergies.
   d. Location of procedure.
   e. Procedure.
   f. Physician.
   g. ASA score (1, 2, 3, 4, 5, E) as determined by the non-anesthesiologist.
   h. A definitive check that a medical history and physical examination is in the medical record.
   i. A definitive check that an informed consent is in the medical record.
   j. Notation of patient NPO since ______.
   k. LOC code (A/O=Awake/Oriented, C=Confused, L=Lethargic, D=Drowsy, U=Unconscious).
   l. A definitive check that pre-procedure instructions were given.
   m. Notation of skin temperature (Cool, Moist, Dry, Warm).
   n. Notation of color of skin.
   o. Notation of I.V.(s) infusing.
   p. Notation of I.V.site.
   q. Notation of pain score (1-10).
   r. Initial vital signs, to include baseline blood pressure, pulse rate, cardiac rhythm interpretation, respiratory rate, and SpO_2..
   s. General nurses' notes.
   t. Signature of RN performing pre-procedure monitoring.
12. Intra-procedure monitoring includes the following:
   a. Notation of sedation start time.
   b. Notation of procedure start time.
   c. Notation of procedure end time.
   d. Notation of pain score (1-10).
   e. Additional assessments.

f. Medications administered to include time, medication name, dose, route, practitioner administering the medication, and the patient's response.
g. Vital signs, to include blood pressure, pulse rate, cardiac rhythm interpretation, respiratory rate, SpO_2, and LOC every 5 minutes during this phase.
h. General nurses' notes.
i. Signature of RN performing intra-procedure monitoring.

13. Post-procedure monitoring includes the following:
    a. Vital signs to include blood pressure, pulse rate, cardiac rhythm interpretation, respiratory rate, SpO_2, and LOC every 15 minutes during this phase, for a minimum of 1 hour, until discharge criteria are met.
    b. Medications administered to include time, medication name, dose, route, practitioner administering the medication, and the patient's response.
    c. Signature of RN performing post-procedure monitoring.
14. Discharge Criteria: The non-anesthesiologist may discharge the patient by written order or the RN may discharge the patient based on established criteria is so ordered by the non-anesthesiologist. Medical staff approved criteria are as follows for RN discharge using the Modified Aldrete Scoring System:
    a. Completion of Modified Adrete Scoring System as follows:

ELEMENT	SCORE
Activity:	
Able to move 4 extremities	2
Able to move 2 extremities	1
Not able to control any extremities	0
Respirations:	
Able to breathe deeply and cough	2
Limited respiratory effort (dyspnea)	1
No spontaneous respiratory effort	0
Circulation:	
BP +/- 20% pre-sedation level	2
BP +/- 20-50% pre-sedation level	1
BP +/- 50% pre-sedation level	0
Consciousness:	
Fully alert and able to answer questions	2
Arousable	1
Failure to elicit response	0
Oxygen Saturation:	
$SpO_2 > 92\%$ on room air	2
Needs oxygen to maintain $SpO_2 > 90\%$	1
$SpO_2 < 90\%$ with oxygen	0
TOTAL:	

    b. Patient achieves a score of ≥ 8 or pre-procedure baseline.
    c. Additionally, patient must:
        1) Demonstrate motor/sensory function intact, e.g., enough motor strength to change position in bed and sufficient sensory function to prevent possible injury.

2) Demonstrate level of pain, nausea, or vomiting at acceptable level, e.g., most minimal level of pain ____ and minimal level of nausea.
3) Demonstrate expelling flatus and abdomen soft (only for endoscopy patients).

d. Notation that discharge criteria is met.

KEYPOINTS: Any patient receiving a reversal agent must be observed for 1-2 hours after the last dose of reversal agent.

Any patient who does not meet the above discharge criteria and who exhibits any untoward reaction, including but not limited to: respiratory insufficiency, hypoxemia, hypotension/hypertension, bradycardia/tachycardia, adverse reactions such as rash, use of reversal agent, during or after must be evaluated by the anesthesiologist and/or non-anesthesiologist performing the procedure. In this case the Untoward Reaction box should be checked.

15. If the patient is transferring to another area verbal report must be given to the nurse caring for the patient. Additionally, the name of the nurse, where the patient was transported, how the patient was transported and the time the patient was transported must be noted as appropriate on the Moderate Sedation Record.
16. Suggested Medications and Doses: Reversal agents, e.g., Romazicon and narcotic antagonist agents, e.g., Narcan must be readily available, for use in situations where the effect of drugs given has gone beyond sedation.
    a. Adult Dosing Schedule:
        1) Midazolam:
            a) Recommended starting dose 0.025 - 0.1 mg/kg (maximum 5mg) IV or Syrup 0.5 mg/kg PO (maximum 20 mg).
            b) Reduce dose 25% if narcotic is used.
            c) Reduce dose 25-50% if patient is over 60 years old.
            d) Recommended initial dose of 1.0 - 2.5 mg given over two minutes with incremental doses of 1 mg every 5 minutes as needed.
            e) Use of other benzodiazepam is discouraged.
        2) Diazepam:
            a) Recommended dose 0.2 mg/kg IV.
            b) Reduce dose 25% if narcotic is used.
            c) Reduce dose 25-50% if patient is over 60 years old.
            d) Recommended initial dose of 2.5 mg given slowly with incremental doses of 2.5 mg every five minutes as needed.
            e) Use of other benzodiazepam is discouraged.
        3) Meperidine:
            a) Recommended dose 0.5 mg/kg IV.
            b) Reduce dose 25% if benzodiazepam is used.
            c) Reduce dose 25% if patient is over 60 years old.
            d) Recommended initial dose of 25 mg with incremental doses of 25 mg every five minutes as needed.
            e) Narcan should be immediately available.
        4) Morphine:
            a) Recommended dose 0.2 mg/kg IV.
            b) Reduce dose 25% if benzodiazepam is used.

c) Reduce dose 25% if patient is over 60 years old.
d) Recommended initial dose of 2 mg with incremental doses of 2 mg every five minutes as needed.
e) Narcan should be immediately available.

5) Fentanyl:
a) Recommended dose is 1 mcg/kg IV.
b) Reduce dose 25% if benzodiazepam is used.
c) Reduce dose 25% if patient is over 60 years old.
d) Recommended initial dose is 50-100 mcg with incremental dose of 25 mcg every five minutes as needed.
e) Narcan should be immediately available.

6) Narcan:
a) Should be immediately available in a dose of 0.4 mg IV.
b) If the desired improvement in respiratory rate and function is not obtained, the dose may be repeated at 2-3 minute intervals.
c) Apply supplemental oxygen.

7) Romazicon:
a) Should be available to be administered in bolus of 0.2 mg over 15 seconds.
b) If the desired level of consciousness is not obtained after waiting an additional 45 seconds, a further dose of 0.2 mg and repeated every 60 seconds until desired level of consciousness is achieved.

8) Inapsine:
a) Recommended dose is 2.5 mg to 5 mg I.M. or slow IV push.
b) Reduce dose for elderly patients or those who have received other depressant drugs.
c) Obtain 12-lead ECG prior to administration.
KEYPOINT: Cases of QT prolongation and torsades de point have been reported.
d) Continue cardiac monitoring for 2-3 hours following administration.

b. Pediatric Dosage Schedule:
1) Choral hydrate 50-100 mg/kg PO.
2) Pentobarbital sodium 2-3 mg/kg IV.
3) Fentanyl 2 mcg/kg IV slowly.
4) Midazolam 0.02 - 0.05 mg/kg IV.
0.05 - 0.1 mg/kg IV.
5) Methohexital 20 mg/kg in 10% solution PR.
6) Morphine 0.1 - 0.2 mg/kg IV.
7) Meperidine 1-2 mg/kg IV.
8) Naloxone 0.01 - 0.1 mg/kg IV.
9) Flumazenil 0.01 mg/kg IV.

17. Performance Improvement Activities Related to Sedation Administration and Monitoring:
a. All areas administering/monitoring sedation will monitor:
1) Adverse drug reactions;
2) Reversal rates; and
3) Patient satisfaction regarding their experience.

c. Reporting of monitoring data is submitted to the Pharmacy & Therapeutics Committee.

REFERENCE(S):

Joint Commission on the Accreditation of Healthcare Organizations. (2004). 2004 Comprehensive accreditation manual for hospitals. Oakbrook Terrace, IL: Author.

APPROVAL(S):

Charge Nurse, Endoscopy Suite	/s/ Myra Melson, RN, BSN	Date:	November 17, 2004
Charge Nurse, PACU	/s/ Janice Wallace, RN, BSN	Date:	November 17, 2004
Chief of Surgery	/s/ Robert Williams, MD	Date:	November 17, 2004
Vice President, Patient Care Services	/s/ Jonathon Brown, RN, CNAA, CHE	Date:	November 17, 2004

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