POLICY AND GUIDELINE

TOMAH HEALTH

Tomah, Wisconsin 54660

EFFECTIVE DATE: 02/16/2022
DIVISION: Patient Care Services
P&G #: 500-Gen-017
ORIGINATION DATE: 11/91
TITLE: Sedation/Analgesia
PAGE: 1 of 5

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01 INVOLVES

Patient Care Services and Medical Staff

02 PURPOSE

To provide a guideline for the safe administration of sedation/analgesia

03 POLICY

All patients receiving sedation/analgesia will be monitored according to the following guidelines. In order to ensure quality care, the level of sedation/analgesia to be administered must be determined by a credentialed practitioner. A registered nurse, trained in the use of sedation/analgesia, can administer minimal to moderate sedation under direct supervision of any appropriately credentialed provider with sedation/analgesia privileges. A CRNA must be responsible for administering deep sedation or administering anesthesia outside of the emergency room. The trained RN or CRNA must have no other significant responsibility that would leave the patient unattended or compromise continuous monitoring. All patients receiving procedural sedation must have a responsible adult, assuming care of patient, present at time of discharge unless being hospitalized or transferred via EMS to another institution. This policy does not apply to medications administered for pain control, seizures, sedation of mechanically ventilated patients, or for urgent/ emergent endotracheal intubation.

04 GUIDELINES

A. There are four levels of sedation and anesthesia as defined below. The standards for sedation and anesthesia care apply when patients receive, in any setting, for any purpose, by any route, minimal, moderate, or deep sedation.
    a. **Minimal sedation (anxiolysis):** A drug-induced state in which patients respond normally to verbal commands. Although cognitive function and physical coordination may be impaired, airway reflexes and ventilatory and cardiovascular functions are unaffected.
    b. **Moderate sedation/analgesia formerly called "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 following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.
    d. **General anesthesia:** 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.

B. A registered nurse, trained in the use of sedation/analgesia, can administer minimal to moderate sedation under direct supervision of any appropriately credentialed provider with sedation/analgesia privileges. Emergency physicians may provide emergent sedation services of any level required for the stabilization and treatment of life or limb threatening and emergent conditions. Emergency physicians are encouraged to involve a CRNA to assist them at their discretion for non-emergent procedures or to provide sedation services in cases where the emergency physician is also performing the procedure

C. **Emergency Equipment:**
    a. The following must be immediately accessible during administration of sedation/analgesia:
        i. Code cart
        ii. Vitals monitor (including ECG, BP, oximeter, ETCO2)
        iii. Suction device
        iv. Pharmacologic antagonists (Flumazenil and Naloxone)

D. **Physician/Nursing care responsibility:**
    a. Pre-procedure assessment includes a baseline history and physical within 30 days to include:
        i. Indications/symptoms for procedure
        ii. Current medications
        iii. Allergies and previous adverse drug reactions
        iv. Medical and surgical history
        v. Assessment of mental status
        vi. Physical exam
        vii. Vital signs/height/weight
        viii. Airway assessment
        ix. ASA physical status category (appendix B)
    b. A physician must update the H&P the day of procedure unless it was completed in our facility within the past 24 hours.
    c. **Fasting status:** If non-urgent procedure, adults should be NPO from solids a minimum of 6 hours, 8 hours for patients with diagnosed/suspected GERD or gastroparesis. NPO from clear liquids 2-3 hours. This recommendation is due to the possibility that minimal or moderated sedation may turn into dep analgesia/sedation. This offers better airway protection for patients who may be at risk for aspiration (GERD, diabetics, hiatal hernia).
    d. **Informed Consent:** The patient or legal guardian shall receive informed consent from the physician or CRNA about the risks, benefits, and alternatives to sedation as a component of the planned procedure. This discussion must be documented in the medical record.
    e. All pediatric patients up to age of 18 years old, receiving deep sedation outside the Emergency Department, must have CRNA present.

E. **Pre-Induction:** A final airway assessment must be completed and documented by a qualified provider immediately prior to administration of sedation to ensure patient remains an appropriated candidate for the planned sedation/analgesia. A final timeout is performed just prior to starting the procedure.

F. **Intra-procedure:**
    a. The personnel in the room during the procedure include: the practitioner, sedation RN or CRNA for medication administration and patient monitoring, and circulating RN.
    b. Vital signs documented every 5 minutes (BP, HR, EKG, O2 saturation, ETCO2 level, sedation level, pain level)
    c. Medications administered are documented in EMR. See **Adult IV Sedation/Analgesia Table** (Appendix D) for recommended doses
    d. If suggested maximum dose for patient is reached, the sedation RN will inform the provider and document any additional orders.
    e. Reversal agents for Versed and Fentanyl shall be readily available. See **Adult IV Sedation/Analgesia Table** (Appendix D) for recommended doses
    f. Any monitor that interferes with the accuracy of reliability of any diagnostic procedure, e.g. MRI, can be removed at the discretion of the attending physician and must be documented.
    g. Supplemental oxygen is recommended for all patients other than minimal sedation

G. **Post-procedure:**
    a. Patients who have received sedation/analgesia are to be assessed at regular intervals per provider order. Assessment includes:
        i. Vital signs
        ii. Modified Aldrete score must be completed upon arrival to post procedure area and prior to discharge home.
        iii. Patients who received reversal agents shall be monitored for at least one hour following administration.

H. **Disposition:** patients must meet criteria suitable for discharge or equal to their pre-procedure baseline prior to discharge home (Appendix C).

I. **Credentialing and Competency:**
    a. The Medical Staff Credential Committee will recommend to the Medical Staff Executive Committee approval of practitioners to prescribe, administer, and select sedation/analgesia medications.
    b. The ability of the sedation RN to provide monitoring for patients undergoing sedation/analgesia will be assessed and maintained through the sedation/analgesia competency program. Minimum requirements include BLS and ACLS certification.

05 FORMS

Anesthesia Consent (500-Gen-014)

06 REFERENCES

1994 Pediatric Emergency Nursing Manual
2021-2022 Perianesthesia Nursing Standards, Practice Recommendations, & Interpretive Statements

Appendix A

AIRWAY ASSESSMENT & ANESTHETIC HISTORY

Positive pressure ventilation, with or without endotracheal intubation, may be necessary if respiratory compromise develops during sedation/analgesia. This may be more difficult in patients with atypical airway anatomy or conditions, which place them at risk for aspiration. Also, some airway abnormalities may increase the likelihood of airway obstruction during spontaneous ventilation. Factors that may be associated with difficulty in airway management are:

History

- Previous problems with anesthesia or sedation
- Stridor, snoring or sleep apnea
- Dysmorphic facial features (e.g., Pierre-Robin syndrome, trisomy 21)
- Advanced rheumatoid arthritis
- Upper airway soft tissue edema
- History of Gastric problems (see below*)

Physical Examination

Habitus

Significant obesity (especially involving the neck and facial structures)

Head and Neck

Short neck, limited neck extension, decreased hyoid-mental distance (<6 cm in an adult), neck mass, cervical spine disease or trauma, tracheal deviation

Mouth

Small opening (<3 cm in an adult); protruding incisors; loose or capped teeth; high arched palate; macroglossia; tonsillar hypertrophy, non-visible uvula

Jaw

Micrognathia/receding mandible, retrognathia, trismus, significant malocclusion

If a patient presents with the above factors, an anesthesia consult should be considered.

* Patients may also present with an increased risk of aspiration of gastric contents. Factors that may be associated with aspiration include: obesity, history of acid reflux, history of hiatal hernia and the patient with a full stomach or delay in gastric emptying (pregnancy, diabetes, trauma, recent narcotic ingestion, and mechanical obstruction).

Careful attention must be given to prevent the patient from entering a deep level of sedation. A non-particulate antacid such as sodium citrate may be administered in advance to neutralize stomach acid. Metoclopramide may also be administered to stimulate upper GI tract motility, increase LES tone and minimize risk of aspiration. If appropriate, a field block or regional anesthetic may be employed in order to minimize level of sedation required.

Appendix B

SELECTION CRITERIA

Physical Status Classification of the American Society of Anesthesiologists

Status	Definition
I	A normal healthy patient
II	A patient with mild systemic disease
III	A patient with a severe systemic disease that limits activity, but is not incapacitating
IV	A patient with an incapacitating systemic disease that is a constant threat to life
V	A moribund patient not expected to survive 24 hours with or without operation

- Patients appropriate for RN sedation will be determined by using the Physical Status Classification of the American Society of Anesthesiologists (ASA) table above.
- Patients classified as ASA I or II are appropriate for RN sedation
- Anesthesia will be consulted for patients who are classified as >ASAIII
- Patients classified as ASA IV or V are not appropriate for RN sedation and will have an anesthesia provider responsible for their care.
- Any patient with a personal or family history of malignant hyperthermia or pseudocholinesterase deficiency are not candidates for RN sedation.
- Any patient undergoing a procedure where significant amounts of fluid loss is anticipated, i.e., paraplegic having a major debridement is not a candidate for RN sedation

Appendix C

DISCHARGE FROM SEDATION/ANALGESIA CRITERIA

Minimum discharge/transfer criteria for a patient receiving sedation/analgesia is as follows:

Inpatients

Prior to transfer to inpatient unit, the patient will meet the following criteria:

- Awake, alert, oriented, responsive (or return to baseline)
- Minimal pain
- No active bleeding
- Vital signs stable (not likely to require pharmacologic intervention)
- Minimal nausea
- No vomiting
- Oxygen saturation of 92% on room air (3 minutes or longer) **OR** return to baseline or higher

Outpatients

Prior to discharge home, the patient will meet the following criteria:

- Awake, alert, responds to commands appropriate to age or returned to pre-procedure baseline
- Modified Aldrete score of 8 or greater or at pre-procedure baseline
- Room air oxygen saturation >92% or at pre-procedure baseline
- Respirations are WNL for adults or at pre-procedure baseline
- Blood pressure is stable, at baseline, or within +/- 20mmHg of pre-procedure baseline
- Afebrile or return to pre-procedure baseline
- Swallow without difficulty
- Skin color/condition WNL
- Ambulates/transfers without dizziness and with minimal assistance or has returned to pre-procedure baseline
- Operative site dry, dressing intact with minimal to no drainage (if applicable)
- Pain controlled with oral medications
- No active vomiting and reports tolerable nausea
- Discharge instructions reviewed and patient verbalized understanding
- Responsible adult to provide transportation home

ADULT IV SEDATION / ANALGESIA

This table is meant to provide a quick reference to some commonly recommended sedatives which may be used in adults. These are meant only as suggestions. The clinician must individualize treatment for his/her own patient. ALL PATIENTS MUST BE MONITORED USING GUIDELINES FOR SEDATION/ANALGESIA MONITORING (See reference below).

DRUG	DOSE	TIME of ADMINISTRATION	ONSET of ACTION	DURATION	ELIMINATION (Half-Life Hours)	ADDITIONAL INFO
Diazepam (Valium)	1-3 mg IV titrated to effect. **Maximum dose 0.15 mg/kg.**	5-10 minutes prior to procedure	1-3 minutes	1 hour	Up to 48 hours	*Not appropriate for RN Sedation*
Morphine	1-2 mg IV titrated to effect. **Maximum dose 0.3 mg/kg.**	15-20 minutes prior to procedure	1-2.5 minutes	3-4 hours	1.5 – 2 hours	*Not appropriate for RN Sedation*
Ketamine	5-10 mg IV titrated to effect. **Maximum dose 0.5 mg/kg.**	3-5 minutes prior to procedure	< 1 min	30-60 minutes	2-3 hours	*Not appropriate for RN Sedation*
Midazolam (Versed)	0.5 mg- 2 mg every 1-5 minutes IV titrated to effect. **Maximum dose of 0.1 mg/kg.**	1-5 minutes	1-5 minutes	30-60 minutes	2-6 hours	
Fentanyl (Sublimaze)	12.5 mcg to 50 mcg IV every 2-5 minutes titrated to effect. **Maximum dose of 3 mcg/kg.**	3-5 minutes prior to procedure	2-5 minutes	30-120 minutes	90 minutes	
Naloxone (Narcan)	0.4-2 mg IV. May repeat every 2-3 minutes until effect achieved. **Maximum dose 10 mg.**		1-2 minutes	1-4 hours	0.5-2 hours	*Reversal of Opioids*
Flumazenil (Romazicon)	0.2 mg IV every 1 minute. May redoes with 0.3 mg or 0.5 mg every 1 minute.		1-2 minutes	1-3 hours	40-80 minutes	*Reversal of Benzodiazepines*

RECOMMENDED DRUGS / DOSES FOR PEDIATRIC SEDATION IN DIAGANOSTIC, THERAPEUTIC, OR INVASIVE PROCEDURES

This table is meant to provide a quick reference to some commonly recommended sedatives which may be used in children. These are meant only as suggestions. The clinician must individualize treatment for his/her own patient. ALL PATIENTS MUST BE MONITORED USING GUIDELINES FOR SEDATION/ANALGESIA MONITORING (See reference below).

DRUG	CONCENTR-ATION	ROUTE	ADMINISTRATION TIME	INITIAL DOSE	2ND DOSE IF REQUIRED	ONSET	DURATION
Diazepam (Valium)	Tab 5 mg	Oral	1 hour prior to procedure	5 mg (<7 yr old) 10 mg (>7 yr old)	Same dose (repeat after 60 minutes)	60 minutes	4-8 hours
Midazolam (Versed)	syrup 2 mg/ml	Oral	20 minutes prior to procedure	0.5 mg per kg. **Max** dose 20 mg.	0.2 mg/kg	20-30 minutes	2-6 hours
Diazepam (Valium)	Tab (5 mg) Inj. 5 mg/ml	IM	1 hour prior to procedure	2-10 mg. **Max** dose 10 mg.	May repeat ½ dose after 30 minutes	30 minutes	4-8 hours
Lorazepam (Ativan)	Tab (0.5 mg) Inj. (2 mg/ml)	Oral, IM, SL	1 hour prior to procedure	1-2 mg **Max** PO / IM dose 4 mg **Max** SL dose 2 mg	May repeat ½ dose after 30 minutes	30 minutes	6-8 hours
Morphine	4 mg/ml 10 mg/ml	IM/SC/PO	15 minutes prior to procedure	10-30 mg PO 1-5 mg IM/SC **Max** IM/SC/IV/PO 0.3 mg/kg.	May repeat ½ dose after 15 minutes	20 minutes	3-4 hours

PEDIATRIC IV MODERATE SEDATION (SEDATION/ANALGESIA)

This table is meant to provide a quick reference to some commonly recommended sedatives, which may be used in children. These are meant only as suggestions. The clinician must individualize treatment for his/her own patient. ALL PATIENTS MUST BE MONITORED USING GUIDELINES FOR MODERATE SEDATION/ANALGESIA MONITORING. (See reference below).

DRUG	CONCENTRATION	ADMINISTRATION TIME	DOSING RECOMMENTATIONS	ONSET	DURATION
Midazolam (Versed)	1 mg/ml	3-5 minutes prior to procedure	0.5 mg to 1 mg IV titrated to effect. **Maximum** dose 0.1 mg/kg.	3-5 minutes	2-6 hours
Fentanyl	50 mcg/ml	3-5 minutes prior procedure	12.5 mcg to 25 mcg IV titrated to effect. **Maximum** dose 3 mcg/kg.	3-5 minutes	60-120 minutes
Ketamine	50mg/ml	3-5 minutes prior to procedure	1-2mg/kg IV 3-4mg/kg IM	3-5 minutes	15-60 minutes
Morphine	2-15 mg/ml	15-20 minutes prior to procedure	0.5 mg – 2 mg IV titrated to effect. **Maximum** dose 0.3 mg/kg.	15 minutes	3-4 hours

RASS (Richmond Agitation Sedation Scale)		
4	Combative	Overtly combative, violent, immediate danger to staff
3	Very agitated	Pulls or removes tubes or catheters; aggressive
2	Agitated	Frequent non-purposeful mvmt, fights ventilator
1	Restless	Anxious but movements not aggressive or vigorous
0	Alert and calm	
-1	Drowsy	Sustained awakening to voice (≥10sec)
-2	Light sedation	Briefly awakens with eye contact to voice (<10 sec)
-3	Moderate sedation	Movement or eye opening to voice but no eye contact
-4	Deep sedation	No response to voice but movement or eye opening to physical stimulation
-5	Cannot be aroused	No response to voice or physical stimulation