SECTION: **PATIENT CARE**

SUBJECT: **PROCEDURE RELATED DEEP SEDATION (PRDS) FOR EMERGENCY DEPARTMENT PHYSICIANS**

APPROVED BY: _____
Unit Manager

POLICY

I. The Department of Anesthesiology, in collaboration with the Department of Emergency Medicine developed this policy for the use of drugs which, when given by any route, could reasonably be expected to alter consciousness, depress respiration, and/or alter reflexes of the oropharynx and upper airway. This policy governs PRDS in the Emergency Department.

II. The Performance Improvement Department will track and trend all adverse outcomes related to the administration of sedatives and analgesics by non-anesthesia providers during procedures.

III. The use of PRDS at Arrowhead Regional Medical Center (ARMC) is divided into two groups:

A. Group I – Adults and Children
   1. This group is bound by this policy and the formulary established in Attachment A.

B. Children under 2 years of age
   1. This group should have PRDS performed in conjunction with Anesthesia Department consultation.

PROCEDURE

I. This policy has been established to provide guidelines for patient management of all procedures where sedatives and analgesics are titrated by Emergency Medicine Physicians that result in deep sedation during procedures per this protocol.

II. Goals
A. Provide age-appropriate care to all patients by ensuring that the clinical providers have the appropriate clinical competencies.
B. Achieve adequate sedation with minimal risk.
C. Minimize discomfort and pain.
D. Minimize negative psychological responses by providing adequate anxiolysis, analgesia and amnesia.
E. Decrease agitation and improve cooperation during a procedure
F. Provide for rapid recovery and safe discharge.
G. Facilitate improved technical performance of the procedure.

LEVELS OF SEDATION AND ANESTHESIA DEFINED IN PRDS

I. **Mild Sedation (anxiolysis)** - This is a drug-induced state during which patients respond normally to verbal commands, although cognitive function and coordination may be impaired.

II. **Moderate 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 should be required to maintain a patent airway and spontaneous ventilation should be adequate. Additionally, cardiovascular function is usually maintained. Since the response of patients varies, a higher level of assessment and monitoring of these patients is required.

III. **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 patient airway and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained. Deep sedation will be only performed by Anesthesiologists, certified registered nurse anesthetist (CRNA) under the supervision of an anesthesiologist, and emergency medicine physicians who have been granted deep sedation clinical privileges by the Department of Anesthesiology.

IV. **Dissociative Sedation** – Dissociative sedation is a trance like cataleptic state induced by the dissociative agent Ketamine (alone or in conjunction with a dose of a Benzodiazepine) characterized by profound analgesia and amnesia. There is usually retention of protective airway reflexes, spontaneous respirations, and cardiopulmonary stability. In some cases, however, cardiovascular instability and respiratory compromise (desaturation, laryngospasm) may occur as published in the literature. For this reason, dissociative sedation will be considered the same as deep sedation and with the guidelines that follow shall apply to deep dissociative sedation.

V. **Anesthesia** - Consists of general anesthesia or major regional anesthesia. It does not include simple local anesthetic infiltration. 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 usually impaired. Patients usually require significant 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. The Department of Anesthesiology is consulted in all such cases.

VI. **Specific Exclusions** – The use of sedatives for mechanically ventilated patients undergoing procedures is specifically excluded from this policy. The use of anxiolytics or analgesics for the purposes other than to facilitate a procedure is excluded from this policy. The use of sedative agents to facilitate emergency and lifesaving procedures is specifically excluded from this policy.

LOCATION FOR DEEP SEDATION

I. It is the policy of ARMC that PRDS by emergency department physicians be performed only in the emergency and trauma departments.

REQUIREMENTS OF ADULT AND PEDIATRIC PRDS PROVIDERS

I. Use of PRDS will be limited to emergency medicine physicians that are qualified to be granted PRDS clinical privileges and who have demonstrated current clinical competency in the administration of adult and pediatric PRDS medications and rescue techniques including emergency airway management. Documentation for initial approval is as follows:

A. Completion of residency training in emergency medicine and granted Emergency Medicine Core Privileges at ARMC.
B. Continuing medical education certificate in Procedural Deep and Moderate Sedation Self Learning Module provided by the medical staff office.
C. Only those emergency medicine physicians who have been granted PRDS clinical privileges are permitted to order and supervise the administration of deep sedation.
D. The ordering emergency department physician must be at the patient's bedside.

ADDITIONAL REQUIREMENTS OF PRDS

I. All requirements of PRDS privileges with oversight by the Chairman of the Department of Anesthesiology.

II. Licensed Registered Nurses assisting with the monitoring of PRDS will be under the supervision of an Emergency Medicine physician who has PRDS privileges.

III. Patients receiving PRDS will be monitored and assessed during and following the procedure by a Licensed Registered Nurse possessing current Basic Life Support (BLS), Pediatric Advanced Life Support (PALS), and Advanced Cardiac Life Support (ACLS) certification and completion of sedation training module.

IV. All providers will be knowledgeable with the medications being used with respect to dosage, administration route, adverse reactions, methods of reversal, and interventions.

V. Additionally, all providers will be able to recognize and correct an obstructed airway, assess the patient's physiological status utilizing cardiac monitoring for rate and rhythm, oxygen saturation, blood pressure, and level of consciousness.

VI. The additional requirement of the bedside presence of a respiratory therapist and the ordering physician prior to administration of ordered medication for sedation.

VII. The physician ordering and supervising PRDS will not be the primary provider performing the procedure that required deep procedural sedation.

PATIENT ASSESSMENT AND SELECTION

I. Candidates for deep sedation are those patients who must undergo brief painful or difficult procedures, where cooperation and/or comfort will be difficult or impossible without pharmacological support through the titration of sedating agents.

II. Patients must be screened for potential risk factors for any pharmacological agents selected. The decision on which agent to use will be based on the goals of sedation, the type of procedure being performed, and the age and physiologic condition of the patient.

III. All patients will be screened by the ordering physician for risk factor utilizing the American Society of Anesthesiologists (ASA) Physical Status Classification Scale.

IV. An H&P Short Form, Informed Consent and Physician Pre-procedure Assessment Note will be documented prior to the procedure.

V. Department of Anesthesia consultation for patients of:
   a. ASA class 4 or above

b. Children 2 years of age and under
c. Pregnancy
d. If it appears likely that sedation to the point of unresponsiveness or general anesthesia is necessary to obtain adequate condition.

ASA PHYSICAL STATUS CLASSIFICATION:

I. **Class I: No** organic, physiologic, biochemical, or psychiatric disturbance. Normal healthy patient.

II. **Class II**: Mild to moderate systemic disturbance: may or may not be related to the reason for the procedure. (Examples: hypertension and diabetes)

III. **Class III:** Severe systemic disturbance. (Examples: poorly controlled hypertension, heart disease)

IV. **Class IV:** Life-threatening systemic disturbance. (Examples: Congestive Heart Failure (CHF), persistent angina)

V. **Class V:** A moribund patient not expected to survive 24 hours with or without intervention.

VI. **E is added:** If the procedure is performed as an emergency.

SEDATION/LEVEL OF CONSCIOUSNESS SCALE

I. Notify the attending physician immediately of a sedation score of less than 5 or a score of 0 in any category.

Category	Score	Sedation Criteria
Respiratory	2 1 0	Spontaneous resp. appropriate for age/patient's baseline Spontaneous resp. requires minimal airway support (positioning, oxygen) Apnea-bagging patient, requires artificial airway
Alertness	2 1 0	Awake, alert appropriate for age, developmental level/patient's baseline Drowsy, awakens with gentle tactile stimulation Unresponsive to painful stimuli
Activity	2 1 0	Moves all extremities appropriate for age/patient's baseline Diminished movement but appropriate for age Minimal movement in response to stimuli
Heart Rate/Blood Pressure	2 1 0	HR/BP with normal range of pre-sedation levels/patient's baseline HR/BP 20-30% from pre-sedation level baseline HR/BP less than 30% pre-sedation baseline
Oxygen (O2) Saturation	2 1 0	O2 sat greater than 90% on room air/patient's baseline O2 sat greater than 90% on minimal O2/increase in baseline O2 needs O2 sat less than 90% with O2 supplementation

Respiratory Rate (normal)		Blood Pressure (normal)	Heart Rate (normal)	
Neonate	40-60	Verify baseline with Registered	Awake	100-180

		Nurse (RN) (differs with age & wt.)	Asleep 80-160
Infant	30-60	Systolic 87-105 Diastolic 53-66	Awake 100-160 Asleep 75-160
Toddler	24-40	Systolic 95-105 Diastolic 53-66	Awake 80-110 Asleep 60-90
Preschooler	22-34	Systolic 97-112 Diastolic 57-71	Awake 70-110 Asleep 60-90
School-age	18-30	Systolic 112-128 Diastolic 80	Awake 65-110 Asleep 60-90
Adolescent	12-16	Systolic 112-128 Diastolic 80	Awake 60-90 Asleep 50-90

Nothing by Mouth (NPO) GUIDELINES

I. A privileged practitioner weighing the risks and benefits of the procedure on a case-by-case basis should make the decision of NPO status.

II. For patients that are very low risk, as determined by an ASA classification of I, NPO status of 3 hours following food is reasonable, but should not be a limiting consideration for proceeding with PRDS where no other specific concerns are present.

III. NPO period should not be a consideration for patients who have only consumed clear liquids.

IV. High-risk patients should have the standard 8-hour fasting prior to sedation, when possible. These conditions may include, but are not limited to, pregnancy, severe obesity, diabetes, hiatal hernia, gastroesophageal reflux, ileus, or bowel obstruction, critical trauma patients or possible difficult airway management.

V. When proper fasting has not been ensured, or in the case of a valid emergency, the increased risks of sedation shall be weighed against its benefits and the lightest level of effective sedation employed. An emergency procedure may require prophylactic administration of antiemetic medication and/or protection of the patient's airway against aspiration (intubation) before sedation.

MONITORING AND RESUSCITATION EQUIPMENT

I. The following equipment, in good working order, must be immediately available and patient age appropriate:

A. Pulse oximeter
B. End Tidal Capnography
C. Non-invasive blood pressure cuff
D. Cardiac monitoring equipment
E. Suction
F. Oxygen supply
G. Crash cart and defibrillator (including laryngoscope and blades, endotracheal tubes, oral/nasal airways, anticholinergics, pressor agents, and drug-specific reversal agents)
H. Intubation Equipment and Difficult Airway adjuncts in proximity.

PERFORMANCE OF PROCEDURE

I. Pre-procedure preparation:

A. Physician Responsibility

1. History and Physical Requirement:
    a. The History and Physical Short Form for Moderate Sedation must also be completed prior to the procedure.

2. Complete The Physician Pre-Procedure Assessment Form:
    a. The Physician Pre-Procedure Assessment Form must be completed prior to the procedure.
    b. Document the risks, benefits and alternatives of sedation and procedure that were discussed and accepted by the patient.
    c. If there is no change, document no interval change in patient's condition since H&P complete; or document change to update record on the History and Physical Short Form for Moderate Sedation.
    d. Make sure to document:
        i. ASA class
        ii. Patient is appropriate candidate for the procedure
        iii. Anesthesia plan (deep sedation) and
        iv. Immediate assessment of airway status.

II. Obtain Informed Consent

III. Participate in the Time Out Procedure with the responsible nurse

REGISTERED NURSE RESPONSIBILTIES

I. Verify the presence of a current History and Physical, pre-procedure notes, which includes documentation of ASA physical status classification and a signed Surgical/Procedural Consent prior to the administration of any sedation.

II. Document the NPO status. See NPO status guidelines.

III. Complete the nursing assessment utilizing the conscious sedation documentation. This may include:

A. Patients' level of consciousness or understanding.
B. Pediatric patients complete pre-procedure sedation score.
C. Anxiety level
D. Vital signs (including temperature and pain assessment)
E. Skin color and condition
F. Sensory deficits
G. Current medications and drug allergies
H. Relevant medical/surgical history, including substance abuse
I. Patient perceptions regarding procedure and conscious sedation

IV. Establish patent intravenous access except for IM pediatric Ketamine at the discretion of the ordering physician.

V. Ensure proper placement of blood pressure cuff, pulse oximeter, and cardiac monitoring equipment.

VI. Ensure proper administration of oxygen via nasal cannula/mask per physician or as appropriate.

VII. Remain with the patient from the time sedation is initiated.

VIII. Medications for Deep Sedation are only administered by the physician

INTRA PROCEDURE

I. The patient is to be continuously monitored and evaluated throughout the procedure by a registered nurse using an electrocardiogram (EKG), pulse oximeter, blood pressure cuff and patient interaction to establish a level of consciousness and tolerance of procedure and sedation.

II. The registered nurse helping monitor the sedation should not be part of the procedural team or used as an assistant.

III. All vital signs and assessments are to be documented every 5 minutes.

IV. Sudden and/or significant changes in monitoring parameters should be immediately reported to the physician and documented on the sedation flowsheet. For adults and children 10 years and older this would include:
   A. Respiratory rate less than 10 or greater than 24 per minute
   B. Heart rate plus or minus 15 per minute from baseline
   C. Systolic blood pressure or diastolic blood pressure plus or minus 15 mm Hg from baseline
   D. O2 saturation equal to or less than 93%

V. Pediatric patients less than 10 years of age, refer to the Pediatric Sedation Scoring Criteria.
   A. A sedation score of 5 or greater should be maintained during the procedure.
   B. The physician responsible for deep sedation needs to be notified immediately of a sedation score of less than 5 or a score of 0 in any category.

VI. Any reactions or significant changes in monitoring parameters or from the patient's baseline vital signs are reported immediately to the physician. All reactions are treated on an individual basis and are subject to the appropriate standards.

POST PROCEDURE

I. A registered nurse will recover all patients receiving conscious sedation for a minimum of 30 minutes by the following criteria:

   A. Monitor patient as was done during procedure.

   B. Document vital signs every 15 minutes for the first hour if stable decrease to every hour or as ordered by the physician or designee.

   C. Document return of sedation score to 10 or pre-procedure score/assessment for pediatric patients.

   D. Administer O_2 (6-1/min by mask or 2-1/min by nasal prongs) if indicated, until recovery from medication is complete.

E. The provider will evaluate patient and write specific discharge orders. The recovery period extends from completion of the procedure until a Provider document that the patient has sufficiently recovered from the effects of the medication, including level of consciousness and vital signs using the Modified Aldrete Score.

F. A responsible adult should accompany patients with home written discharge instructions.

MEDICATION USAGE (DEEP SEDATION)

I. The medications used in Attachment A may be used as directed, without an anesthesiologist, by a physician who has been granted the appropriate privileges outlined in this policy.

II. The additional requirement of a respiratory therapist and the ordering physician presence at the bedside prior to any medication administration listed in attachment A.

REFERENCES: **Centers for Medicare and Medicaid Services, Condition of participation: Anesthesia services, §482.52.**
The Joint Commission - Provision of Care Standard 03.01.07.
American Society of Anesthesiologists. https://www.asahq.org/standards-and-practice-parameters/statement-on-continuum-of-depth-of-sedation-definition-of-general-anesthesia-and-levels-of-sedation-analgesia
Department of Nursing (NRS) Policy 571.00, Medication Administration: General Guidelines and Safe Practices

DEFINITIONS: **N/A**

ATTACHMENTS: **ATTACHMENT A: (PRDS by Emergency Physician)**

APPROVAL DATE:

3/14/2025	**Dr. Steven Barr, Chair, Anesthesia** Applicable Administrator, Hospital or Medical Committee
3/31/2025	**Emergency Department Workgroup** Applicable Administrator, Hospital or Medical Committee
3/20/2025	**Pharmacy and Therapeutics** Applicable Administrator, Hospital or Medical Committee
4/16/2025	**Nursing Standards Committee** Applicable Administrator, Hospital or Medical Committee
7/3/2025	**Quality Management Committee** Applicable Administrator, Hospital or Medical Committee
9/25/2025	**Medical Executive Committee** Applicable Administrator, Hospital or Medical Committee
12/16/2025	**Board of Supervisors** Approved by the Governing Body

REPLACES: **N/A**

EFFECTIVE: **9/25/2025**

REVISED: **N/A**

REVIEWED: **N/A**

ATTACHMENT A (PRDS by Emergency Physician)

***All drugs should be diluted as indicated and titrated to the appropriate effect.**
***When sedatives and narcotics have been given the doses may be decreased.**
***Higher or lower doses may occasionally be necessary depending on the patient's history and physical status.**
***Medications are administered by appropriate Physician.**

Drug	Pediatric Dose	Adult/Older Child Dose	Geriatic Dose	Comments
Ketamine (Ketalar)	IV 1 to 2 mg/kg IM Dosing 4-5mg/kg	Not routinely indicated for patients over the age of 10 years for conscious sedation.	Not recommended as first line agent	Onset 1 min Duration 10 – 15 min Do not use in patient with increased intracranial pressure, airway instability or history of psychosis. Slow IV injection. Emergence reactions may include hallucination, confusion, and delirium. Glycopyrolate 0.006mg/kg or atropine 0.01mg/kg (max 0.5mg and min 0.03) is useful as an antisialagogue
Propofol (Diprivan)	IV bolus 0.5 to 1 mg/kg over 30 seconds. Titrate with 0.1 to 0.2 mg/kg every 60 seconds as needed	IV bolus 0.5 to 1 mg/kg over 30 seconds. Titrate with 0.1 to 0.2 mg/kg every 60 seconds as needed	IV bolus 0.25 to 0.5 mg/kg over 30 seconds. Titrate with 0.1 mg/kg every 60 seconds as needed	Onset 1 min Duration <10 min Careful titration to avoid desaturation, apnea and hypotension.
Etomidate (Amidate)	IV 0.1 to 0.2mg/kg	IV 0.1 to 0.2mg/kg	IV 0.1 to 0.2mg/kg	Onset 1 min Duration 5 to 10 min Adverse effects include respiratory depression, myoclonus, temporary adrenal suppression, and emergence delirium
Midazolam (Versed)		Incremental doses of 1-2 mg to effect not to exceed 10 mg	Incremental doses of 0.5mg to effect not to exceed a total dose of 0.15mg/kg	Onset 1-2 mins. Duration 30 mins. Use Flumenazil for reversal only if respiratory depression occurs.
Fentanyl (Sublimaze) *not to exceed 2mcg/kg or 200mcg/kg in 1hr period		Incremental doses of 25 mcg to effect not to exceed a total dose of 2mcg/kg/hr. or 200mcg/hour	Incremental doses of 25 mcg to effect not to exceed a total dose of 2mcg/kg/hr or 200mcg/hour	Onset 1 min. Duration 30-60 mins. Risk of thoracic and skeletal muscle rigidity with rapid injection. Reversal with Naloxone if respiratory depression occurs
Hydromorphone (Dilaudid)		Incremental doses of 0.2 mg not to exceed 6 mg maximum.	Incremental doses of 0.2mg – 0.5 mg not to exceed 6mg maximum	
Duramorph (Morphine)		Incremental doses of 1 mg to effect not to exceed a total of 0.15 mg/kg	Incremental doses of 0.5mg to effect not to exceed a total of 0.15mg/kg	