

Status **Active** PolicyStat ID **13558126**



Boston Children's Hospital

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Effective 11/17/2021
Next Review 11/16/2024

Owner Ashley Renaud
Department Patient Care Manual (PCM)
Applicability Boston Children's Hospital- Policies & Procedures

Patient Sedation for Procedures Policy/Procedure

Internal Approval

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Scope

The policy applies to all patients, all areas where procedural sedation is performed and all clinical staff in all clinical settings across Boston Children's Hospital.

Definitions

Procedural sedation is a technique of administering sedatives or dissociative agents with or without analgesics to induce a state that allows the patient to tolerate unpleasant procedures while maintaining cardiorespiratory function.

The following terms are used in this document and defined in the Patient Services Glossary: [Minimal Sedation](#), [Moderate Sedation](#), [Deep Sedation](#), [Anesthesia](#)

The Ramsay Sedation Scale

Clinical Score	Level of Sedation	Patient Responses	Airway Maintained	Hemodynamics Maintained
1		Anxious, agitated, restless	Yes	Yes
2	Minimal Sedation	Cooperative, orientated, tranquil	Yes	Yes
3	Moderate Sedation	Asleep, brisk response to a light stroke to the cheek	+/-	Yes

4	Moderate Sedation	Asleep, sluggish response to a light stroke to the cheek	+/-	+/-
5	Deep Sedation	No response to a light stroke to the cheek	+/-	+/-
6	Anesthesia	No response to painful stimulus (nailbed pressure)	NO	NO

Modified from Ramsay MAE, Savege TM, Simpson BRJ, Goodwin R. (1974). Controlled sedation with Alphaxalone-alphadolone. **British Medical Journal**, 2, 656-659.

The Ramsay Sedation Scale (RSS) was designed as a test of rousability. The RSS scores sedation at six different levels, according to how rousable the patient is.

Patient Criteria for Procedural Sedation

- Patients sedated as **outpatients** are accompanied to and from the hospital by an adult who is required to remain onsite for the entire duration of treatment.
- Patients with an [American Society of Anesthesiologists \(ASA\) Physical Status Classification System](#) Level 1 and 2 are candidates for procedural sedation.
- Areas involved in sedation of ASA level 3 patients will develop procedures for patient selection and sedation protocols with consultation with the Sedation Executive Committee or Department of Anesthesia when necessary
- **Note:** Patients in the Intensive Care Unit who are ASA >3 may on occasion require procedural sedation. These should be assessed by the ICU clinician on an individual basis for risk vs benefit.
- ASA level 4 and 5 patients are **NOT** candidates for procedural sedation outside of the ICU setting (see above).
- **Note:** While most patients are potential candidates for procedural sedation, those that have significant co-morbidities need further evaluation.
 - **Patients with pre-existing pulmonary or cardiac disease** may need a reduced dose of sedative and analgesic medications; such medications may cause significant respiratory and cardiovascular depression.
 - **Patients with hepatic or renal abnormalities** may have impaired drug metabolism and excretion, thus causing sedation duration to be longer than expected.
 - **Patients on anticonvulsant therapy** may require higher doses of sedatives per kilogram of body weight.

Note: Clinicians may consult with members of the Sedation Committee or Department of Anesthesia regarding concerns about the use of procedural sedation with specific patients.

NPO Status

NPO status prior to moderate or deep sedation is the same as that for patients undergoing general anesthesia. See the [NPO Guidelines for Clinicians](#) for more information.

- In emergency situations, the appropriate NPO status may be determined by the attending physician in consideration of patient acuity and the urgency of the proposed procedure.
- As minimal sedation does not impair a patient's ability to protect their airway, the need for NPO may be determined by individual units and providers.

HCG Testing

- HCG testing is required for patients whose planned level of sedation is moderate or deep sedation. In accordance with the policy followed for general anesthesia, HCG testing will be performed on all female age 12 and over or after first menses, whichever occurs first. See [Pregnancy Testing of Post-Menarcheal Female Patients](#) for more information.
 - If the targeted level of sedation is minimal sedation, no pregnancy testing is required, but all patients receiving any level of sedation should be counseled that sedation is contraindicated if pregnant.

Informed Consent

- Informed consent is required *separately* for both the procedure (if indicated) and for the sedation, if the intended level of sedation is moderate or above. Minimal sedation does not require separate consent.
- The sedation plan is outlined during the consent process.
- **Note:** Refer to the Patient Care Manual: [Informed Consent](#) policy for additional information about consent requirements and procedures.

Sedation Assessment and Monitoring

- Patients have a pre-sedation assessment documented in the medical record including NPO status; baseline vital signs; physical assessment.
- **Note:** If the pre-sedation assessment is not done immediately prior to the first administration of sedation, a reassessment of vital signs is required when the patient is to have moderate or deep sedation.
- Patients have an individualized sedation plan documented in the medical record. In particular, the intended level of sedation should be indicated prior to administration of sedatives.
- Both intended levels and intra-procedural sedation levels should be scored using the modified [Ramsay Sedation Score System](#).
 - Minimal sedation is defined as Ramsay score of 2; Moderate sedation is defined as a Ramsay Score of 3-4
- During minimal sedation where patients have not lost their ability to maintain their airway and their protective airway reflexes, no further monitoring is necessary
 - Should a patient's level of sedation become deeper, they are monitored and vital signs documented as described below
- During moderate or deep sedation heart rate, respiratory rate, B/P, oxygen saturation and end-tidal CO₂ are continuously monitored and documented in the medical record at a minimum of

every 10 minutes or as clinically indicated.

- **Note:** Patients with a history of cardiovascular instability or who are receiving therapy for hypertension have continuous EKG monitoring; blood pressure is monitored and documented at least every 10 minutes.
- Resuscitation equipment is immediately available in areas that provide procedural sedation.

Post-sedation disposition for infants

Infants who meet the following criteria require routine post-sedation monitoring following moderate or deep sedation:

- Four weeks following birth for full term infants (greater than 37 weeks gestation) without a history of apnea/bradycardia or respiratory distress.
- Sixty weeks post menstrual age following birth for premature infants (less than 37 weeks gestation) and/or history of apnea/bradycardia or respiratory distress, with no residual apnea and bradycardia.

Infants who meet the following criteria require overnight observation with apnea monitoring following moderate or deep sedation:

- Full term infants (greater than 37 weeks gestation) that are less than 4 weeks post-birth.
- Premature infants (less than 37 weeks gestation) that are less than 60 weeks post menstrual age.
- Infants with a history of apnea/bradycardia or respiratory distress greater than 60 weeks post menstrual age with residual apnea and/or bradycardia.
- Children under 12 months with a family history of SIDS.

Discharge

The patient meets the following criteria prior to discharge either to home, an inpatient floor or back to baseline level of nursing care (for ICU):

- Level of cognition/function and sedation score is progressing toward established baseline.
- A minimum of 2 hours has elapsed after the last administration of reversal agents (naloxone, flumazenil).
- The patient is tolerating fluids if clinically appropriate.
- Vital signs are stable and within the patient's baseline.

Document the final clinical post-procedure recovery score using the modified Aldrete score prior to discharge in the outpatient setting and at the end of the procedure, during an inpatient procedure.

- Ready for discharge ≥ 9
- Re-evaluation in 30 minutes 7-8
- Continuous monitoring until stable ≤ 6
- Discharge criteria for patients with known cyanotic heart disease or pulmonary vascular disease with baseline saturations less than normal can be adjusted according to known

clinical condition.

- The patient/family of outpatients receives post-sedation written discharge instructions.

Policy Statements

Purpose

To provide non-intubated patients with the benefits of procedural sedation during non-emergent procedures. This involves the planned administration of medication to alter the level of consciousness in order to facilitate the performance of a procedure while minimizing the associated risk in both the inpatient and outpatient settings at BCH.

Sedation-Privileged Clinicians

- Clinicians who order procedural sedation are listed on the [Children's Hospital Clinical Privileges](#) website.
- **Moderate Sedation:** Non-anesthesiologists (MDs/APCs) prescribers are privileged to administer moderate sedation contingent upon completion of an annual computer-based learning competency and possession of current PALS, ACLS or NRP certification.
- **Deep Sedation:** Non-anesthesiologist prescribers are privileged to administer deep sedation contingent upon the completion of an annual computer-based learning competency, possession of current PALS, ACLS or NRP certification and board certification or board eligibility in Anesthesiology, Pediatric Critical Care, Cardiology, Neonatal-Perinatal Medicine, or Pediatric Emergency Medicine or completion of a BCH Fellowship training program in one of the above specialties.
- A physician not meeting the above requirements may be privileged to administer deep sedation at the discretion and approval of the Chair of the Sedation Committee
- Advance Practice Clinicians (NP and PA) and registered nurses are not privileged to administer deep sedation.

Administration of moderate or deep sedation requires that **a minimum of two clinicians be immediately available:**

- the operator who performs a procedure, and
- a sedation-privileged clinician with the responsibility of monitoring the patient

Documentation

Complete [patient care documentation](#) as described in the Patient Care Manual. In addition, document specific Patient Sedation for Procedures information as follows:

Electronic Medical Record/ Sedation Monitoring Flowsheet	Pre-sedation assessment including NPO status; baseline vital signs; physical assessment. Heart rate, respiratory rate, blood pressure and oxygen saturation are continuously monitored and documented in the medical record a minimum of every 10 minutes.
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	Level of cognition/function. Clinical sedation score. Informed consent.
Medication Administration Record	Sedation medications given.
Discharge Documentation	Level of cognition/function at discharge. Written discharge instructions include an explanation of potential or anticipated post sedation behavior and problems, any limitations in activities, and the 24-hour contact number of a responsible clinician.
Progress Note	Procedure outcomes. Patient tolerance of procedure.

References/Citations

American Society of Anesthesiologists, [ASA Physical Status Classification System](#) (updated 2014). asahq.org Site Accessed 11/1/16.

American Society of Anesthesiologists, [Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia](#) (updated 10/2014) asahq.org, site accessed 11/1/2016.

American Academy of Pediatrics, American Academy of Pediatric Dentistry. (2016). Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016. Pediatrics 138 (1):e20161212.

American Society of Anesthesiologists. (2002). [Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologist](#). asahq.org Site Accessed 11/1/16.

The Joint Commission[®] Hospital Accreditation Standards 2009. Joint Commission Resources, Inc.: Oakbrook Terrace, IL.

Ramsay MAE; How to use the Ramsay Score to assess the level of ICU Sedation. [Ramsay Score](#) Site access 07/09/09.

Ramsay MAE, Savege TM, Simpson BRJ, Goodwin R. (1974). Controlled sedation with Alphaxalone-alphadolone. British Medical Journal, 2, 656-659

Related Content

Policy and Procedure

- [Medical Staff Bylaws and Rules and Regulations](#)

Reference Tools

- [Behavioral Distraction Techniques Reference Tool](#)
- [Pain Assessment Reference Tool](#)

- [Ramsay Sedation Score Reference Tool](#)
- [NPO Guidelines for Clinicians](#)

Forms

- [Sedation and Analgesia Administration Consent Form](#)
- [Sedation and Analgesia Administration Consent Form \[Radiology\]](#)
- [Conscious Sedation: Sedation and Analgesia Administration Consent Form \[Dental\]](#)

Educational Resources

- [Nurse/Physician Sedation Guidelines Post Test \[NetLearning\]](#)

Family Education Information Sheets

- [Echocardiogram with Sedation](#)
- [Home Care Instructions after Sedation \(6 South\)](#)
- [Home Care Instructions after Sedation in the Emergency Department](#)
- [Home Care Instructions after Sedation with Chloral Hydrate](#)
- [Home Care Instructions following Dexmedetomidine Sedation for Radiologic Studies](#)

Website

- [Surgical & Medical Staff with OR Privileges](#) Legislation/Regulatory Standards
- Other Related Policies & Procedures
- Clinical Protocol
- Guidelines
- Professional Standards of Care
- Forms
- Other useful resources

Approval Signatures

Step Description

Approver

Date