

	<p>Policies & Procedures</p> <p>Title: PROCEDURAL SEDATION/ANALGESIA GUIDELINES – PEDIATRIC</p> <p>I.D. Number: 1121</p>
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INTRODUCTION

Moderate or deep sedation/analgesia may be used to reduce the distress and pain associated with diagnostic and therapeutic procedures.

The drugs will vary in the intensive care settings. These guidelines do not encompass all drugs used for moderate/deep sedation/analgesia, but focuses on the drugs commonly used on the wards and in ambulatory care.

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.

Responsiveness	Normal response to verbal stimulation
Airway	Unaffected
Spontaneous ventilation	Unaffected
Cardiovascular function	Unaffected

Moderate Sedation: a drug-induced depression of consciousness during which patients respond purposefully (reflex withdrawal from a painful stimulus is not considered a purposeful response) 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.

Deep sedation/analgesia: a drug-induced depression of consciousness during which the patient cannot be easily aroused but responds purposefully following repeated or painful stimulation. The patient may require assistance in maintaining a patent airway. Cardiovascular function is usually maintained. Regardless of the intended level of sedation or route of administration, sedation represents a continuum and protective reflexes may be lost. The patient may move from light sedation to obtundation rapidly and unpredictably. Most procedures that are painful or need the child to be completely immobile will require the child to be deeply sedated.

CONTINUUM OF DEPTH OF SEDATION

	Minimal Sedation (Anxiolysis)	Moderate Sedation/ Analgesia	Deep Sedation/ Analgesia	General anesthesia
Responsiveness	Normal response to verbal stimulation	Purposeful response to verbal or tactile stimulation	Purposeful response following repeated or painful stimuli	Unarrousable even with painful stimulus
Airway	Unaffected	No intervention required	Intervention may be required	Intervention often required
Spontaneous ventilation	Unaffected	Adequate	May be inadequate	Frequently inadequate
Cardiovascular function	Unaffected	Usually maintained	Usually maintained	May be impaired

From ASA (1999). Continuum of depth of sedation. Accessed from www.asahq.org

1. PURPOSE

- 1.1 To provide effective, standardized guidelines for the safe administration, monitoring, recovery, and discharge of patients who have received sedation/analgesia in ambulatory or inpatient settings.

2. POLICY

- 2.1 Moderate or deep sedation/analgesia may only be used if the following criteria are met:

2.2 Personnel:

- 2.2.1 Personnel administering or monitoring sedation/analgesia must have an understanding of the drugs administered, the ability to monitor the patient's response to the medications given, and the skills necessary to intervene in managing all potential complications, including the resuscitation of children.
Recommendation: Certification in Pediatric Advanced Life Support Course unless a pediatric intensivist or designate or an anesthesiologist is present.
- 2.2.2 Intravenous sedation may be administered by a physician with an RN or other health care professional in attendance or by an RN with a physician in attendance. The RN must also be certified in Direct IV Push Medication.
- 2.2.3 Observation should be by a designated, trained provider who is not performing the procedure.

3. PROCEDURE**3.1 Pre-Sedation:**

- 3.1.1 Patient Assessment/Preparation
- 3.1.2 Obtain patient history to identify allergies, medications, past medical history, last meal, last fluids, and events leading to sedation.
- 3.1.3 Obtain informed consent.

3.1.4 Parents should be informed of procedure, effects of medication being used, after care, and discharge criteria. Upon discharge, if an adult is driving it is recommended that another adult be present to accompany and observe the child.

3.1.5 Child to be NPO as ordered.

3.1.5.1 Obtain baseline BP, heart rate, respiratory rate, O₂ saturation and LOC. (See Appendix A & B)

3.1.5.2 For dose determination of medications, record patient's weight in kilograms on sedation record (Appendix B)

3.1.5.3 If IV access required, apply topical anesthetic to site prior to establishing IV.

3.1.5.4 Establish IV access for IV route medication. For other routes of sedation, the IV equipment will be readily available.

3.1.6 Location:

3.1.6.1 Treatment area must allow for easy access to patient in the event of respiratory or circulatory collapse.

3.1.7 Equipment/Supplies

3.1.7.1 The following should be immediately available:

- Medication as ordered for sedation. (Extra supply for titration.)
- Appropriate reversal agents: Naloxone, Flumazenil
- Suction and size appropriate suction catheters.
- Supplemental oxygen and size appropriate airway management equipment including oral airways, and bag/valve/mask
- IV access supplies.
- Emergency cart/Code cart with length based resuscitation tape (such as the Broselow Pediatric Emergency Tape) or emergency medication sheet listing doses appropriate for resuscitation.

3.2 During Sedation:

3.2.1 Vital signs (respiratory rate, heart rate, and blood pressure), O₂ sats, and LOC will be done and recorded every 5 minutes on sedation record (Appendix B). The frequency of blood pressure may be adjusted at the discretion of the RN or physician.

3.2.2 If IV route medication used, continually maintain IV access.

3.2.3 Continuous monitoring of O₂ saturation throughout the procedure. Continuous ECG monitoring is required for deep sedation. Qualified personnel must be present throughout the procedure.

3.3 During Recovery:

3.3.1 Have resuscitative equipment available (including suction and oxygen). Qualified personnel must be available to continuously monitor the recovery process.

3.3.2 Continuous O₂ saturations will be monitored. Continuous ECG monitoring is required for deep sedation.

- 3.3.3 V.S. will be done and recorded q15 min on sedation record until the patient is awake.
- 3.3.4 When awake, monitor and record oxygen saturation, respiratory rate, blood pressure, and heart rate every 15 minutes for at least one hour following the last medication dose or until the patient's signs have returned to pre-sedation levels.
- 3.3.5 If a reversal agent is administered to the patient, the child must be closely monitored for a minimum of 2 hours after the last dose of the reversal agent. Frequency of vital signs, O₂ sats, and LOC is as above; depending on if child is awake. Note that the half-life of the reversal agent is frequently shorter than the half-life of the sedative agent. Observe for recurrence of sedation after the effects of the reversal agent dissipate.

Note: Call physician immediately if patient is not responding to painful stimuli or if other concerns arise.

3.4 Transportation of Sedated Patients

- 3.4.1 Whenever the patient must be transported to another area or back to the unit, the following will be required:
 - 3.4.1.1 Patient will be transported with a portable oxygen saturation monitor on.
 - 3.4.1.2 Qualified personnel are required to accompany the patient. Recommendation is for a transport team consisting of a R.T. and RN or resident, with PEDALS. An RN will notify the R.T. and the resident (from the service the patient is admitted under) to accompany the patient off the unit. If the R.T. or resident is not available, the charge nurse will determine if staffing levels allow an RN to go. If appropriate personnel are not available, the most responsible physician will be notified by the resident or nurse. If the MRP cannot make alternate arrangements, then the procedure will be cancelled.
 - 3.4.1.3 Appropriate equipment will accompany the patient: oxygen, resuscitation bag, mask, oxygen tubing, oral airway, E.T. tubes, laryngoscope blades and handles, stylette, portable suction and suction catheters, and IV access supplies if no IV in situ.

3.5 Discharge Criteria

- 3.5.1 The patient may be discharged when:
 - 3.5.1.1 Patient is conscious, at their baseline level of verbal ability, and able to follow age-appropriate commands
 - 3.5.1.2 Vital signs including respiratory rate and oxygen saturation are within normal limits for this patient for a minimum of 30 minutes
 - 3.5.1.3 Respiratory status is not compromised
 - 3.5.1.4 Motor function has returned to pre-procedural levels, or patient is able to sit or ambulate unassisted (if appropriate for age) without dizziness
 - 3.5.1.5 Pain and/or nausea are controlled or are consistent with procedure

3.5.1.6 Patient has voided

3.5.1.7 Dressing/procedure site are dry/clean and CSWM is adequate

3.6 Discharge Instructions

3.6.1 Discharge instructions are verbally reviewed with patient/parent/caregiver prior to discharge

3.6.2 Written instructions (information pamphlet) are reviewed and sent with patient/parent/guardian (Appendix B)

3.6.3 Patient/parent/guardian express understanding of information

4. REFERENCES

American Heart Association and American Academy of Pediatrics PALS Provider Manual, 2002.

Bhatt-Mehta V., Rosen D.A., Sedation in Children: Current Concepts. Pharmacotherapy 1998; 8(4): 790-807.

Gloor J., Analgesia and Sedation in Childhood. Pediatric Child Health 1998; May/June 3(3): 160-16

SDH/SPH Intravenous Medication Reference Manual, February 2001.

Taketomo C., Holding J., Kraus D., AphA Pediatric Dosage Handbook, 5th Ed., 1998-99.

With Contribution From:

- The Hospital for Sick Children
 - Patient Observation, Vital Sign Monitoring and Continuous Electronic Monitoring Criteria. Policies, Guidelines, Procedures. March 2001
 - Nursing Procedure Manual: Conscious and Deep Sedation Guidelines for Care of the Child. Revised July 2001.
- Calgary Regional Health Authority, Alberta Children's Hospital
 - Conscious Sedation Policy

Appendix A

A V P U PEDIATRIC RESPONSE SCALE

A = Alert

V = Responds to Verbal Stimuli

P = Responds to Painful Stimuli

U = Unresponsiveness

- Use to assess LOC/Sedation.
- To evaluate response to a central painful stimulus, pinch the trapezius or rub the sternum with your knuckles. If the patient grabs for your hand, he/she localizes the painful stimuli.

Appendix B

**SASKATOON HEALTH REGION
Saskatoon, Saskatchewan**

RUH SCH SPH OTHER _____

MODERATE SEDATION / ANALGESIA RECORD

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DATE: _____

PROCEDURE: _____

PRE-PROCEDURE CHECKLIST:

- Informed verbal consent obtained by physician
- Previous Anesthesia / IV Sedation Reaction
- Wt _____ kg
- Allergies (list) _____

- Last solids @ _____ fluids @ _____

- SpO2 Monitor BP Monitor
- Cardiac Monitor for deep sedation or as ordered
- Emergency cart readily available
- Oxygen, bag/valve/mask, oral airway, ET tubes, stylette, laryngoscope handle and blade at bedside
- Suction equipment at bedside
- IV access supplies readily available
- Reversal agents available at bedside

PRE-SEDATION ASSESSMENT:

- | | | | | | | |
|---------------------------------------|-----------------------------------|---------------------------------|--------------------------------|--------------------|--------------------------------------------|-----------------------------------------------|
| Airway | Breathing | Colour | Skin | Vital Signs | Oxygen <input type="checkbox"/> N/A | IV Access <input type="checkbox"/> N/A |
| <input type="checkbox"/> Open & clear | <input type="checkbox"/> Normal | <input type="checkbox"/> Normal | <input type="checkbox"/> Moist | BP _____ | <input type="checkbox"/> Cannula _____ | <input type="checkbox"/> Heparin/Saline lock |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Shallow | <input type="checkbox"/> Pale | <input type="checkbox"/> Warm | HR _____ | <input type="checkbox"/> Mask _____ | <input type="checkbox"/> IV Infusing |
| | <input type="checkbox"/> Rapid | <input type="checkbox"/> _____ | <input type="checkbox"/> Dry | RR _____ | Time Initiated: _____ | Site _____ |
| | <input type="checkbox"/> Laboured | | <input type="checkbox"/> Cool | 02SaT _____ | Time discontinued _____ | Size _____ |
| | | | | T _____ | | Time initiated _____ |
| | | | | PO/AX/R _____ | | Time discontinued _____ |

PROCEDURE START TIME: _____ **PHYSICIAN:** _____ **RN:** _____
Cardiac Monitor Time initiated: _____ Document with rhythm strip if not NSR

DURING PROCEDURE:

Time	BP	Pulse	Resp	O ₂ Sat	O ₂ l/min	Medications Dose & Route	AVPU*/ LOC*	Pain	Clinical Observations & Interventions	Initials

<p>*AVPU Pediatric Response Scale</p> <p>A = Alert</p> <p>V = Responds to Verbal Stimuli</p> <p>P = Responds to Painful Stimuli</p> <p>U = Unresponsive</p> <p>PAIN Document as per unit specific scales.</p>	<p>*LOC – Level of Consciousness</p> <p>0 = Unresponsive to painful stimuli</p> <p>1 = Arousable by physical stimuli, opens eyes, groans</p> <p>2 = Arousable by physical stimuli, speech minimally slurred but coherent</p> <p>3 = Easily arousable to verbal stimuli with clear speech</p> <p>4 = Alert and oriented</p>	<p>Clinical observations & Interventions</p> <p>Additional documentation per progress notes.</p>
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