Alberta Health Services

PROCEDURE

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PROCEDURAL SEDATION

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NOTE: The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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OBJECTIVES

- This procedure sets out guidance that shall be followed when **patients** are receiving **procedural sedation** for **treatments/procedure**(s).
- To ensure that safe care is provided to all patients receiving procedural sedation in all **Alberta Health Services settings**.

APPLICABILITY

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, Students, Volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary).

This procedure does not apply to patients less than 15 years of age, anesthesiologists administering sedation in the operating room, patients receiving medications for anxiolysis, patients receiving continuous intravenous sedation in a critical care setting or in the setting of patients in palliative care.

ELEMENTS

1. Procedural Sedation Pre-procedure Requirements

1.1 Confirm **informed consent** has been obtained from the patient.

1.2 Check for an order by an **authorized prescriber** for procedural sedation, ensuring the correct dose and route of medication(s) are ordered (see section 3 of the Alberta Health Services *Procedural Sedation* Policy).

a) Identify the intended target level of sedation and communicate it clearly to all involved staff. (See Appendices, A *The Ramsay Sedation Scale* and B *Continuum of Depth of Sedation.*)

b) For Emergency Medical Services, ensure that initiating the use of procedural sedation conforms to the conditions of use of the Alberta Health Services Emergency Medical Services *Medical Control Protocols*.

1.3 Prior to administering the medication, where practical (i.e., the situation is not an emergency where the life or safety of the patient, or of health care providers, may be jeopardized by complying) and in order of priority, do the following:

a) document patient weight and current medications in patient **health record**;

b) check for history of allergies and previous adverse reactions to sedatives, narcotics (opioids) or general anesthesia;

c) ensure patient medical history and clinical exam, including an airway assessment, are completed and documented in the patient health record by the authorized prescriber;

d) check if any narcotics (opioids), respiratory depressants or medications with central nervous system depressing effects (including over-the-counter, anti-seizure or illicit drugs) were given/taken within the last 12 hours;

e) perform a baseline assessment and document in the patient health record. The parameters for the baseline assessment include:

(i) level of consciousness,

(ii) heart rate,

(iii) blood pressure, and

(iv) oxygen saturation;

f) ensure an authorized prescriber is present or immediately available to order procedural sedation medication;

g) verify time and type of last intake of food or drink and document in patient health record;

h) ensure appropriate emergency medications, including appropriate antagonist medications, are present at bedside;

i) ensure appropriate monitoring equipment is readily available, set up and operational (see section 1.4 this document and Appendix C *Procedural Sedation Monitoring and Response Requirements*); and

j) ensure intravenous access is patent or equipment for intravenous access is present. (This procedure does not mandate an intravenous start in the event the authorized prescriber deems it unnecessary.)

1.4 If the clinical area is not covered by a “code blue team” or a “rapid response team”, a fully stocked cardiac resuscitation cart should be readily available. (See the College of Physicians and Surgeons of Alberta *Non-Hospital Surgical Facility Standards & Guidelines* for more details.) The cart shall include:

a) a cardiac monitor with defibrillator and backboard for cardiopulmonary resuscitation (CPR);

b) endotracheal tubes, stylets, Magill forceps, an array of extraglottic devices to accommodate the adult population; and,

c) two (2) functioning laryngoscopes, a variety of sizes of laryngoscope blades and endotracheal tubes.

2. Special Considerations

2.1 The authorized prescriber may wish to consult with an Obstetrician after 24 weeks gestation for patients receiving procedural sedation for a non-obstetrical-related event, with particular emphasis on fetal monitoring during and after any treatment/procedure, and resource requirements/location for same.

2.2 The authorized prescriber may wish to consult with a Lactation Consultant for analgesia or sedative use advice for breastfeeding patients.

a) Analgesia/sedation for breastfeeding patients depends on numerous factors, notably the health and physiological development of the infant.

b) The recommendation for Lactation Consultant advice in this section is contingent on accessibility and availability for any site. If a Lactation Consultant is not available, call the Obstetrician or Anesthesiologist on call for direction.

3. Intra-procedure and Post-procedure Monitoring Requirements

3.1 Refer to Appendix D *Health Care Professional and Monitoring Frequency Requirement*.

3.2 In circumstances where the **health care professional** administering the procedural sedation medication is performing the diagnostic or therapeutic procedure, and the targeted level of sedation is a Ramsay Sedation Scale (RSS) score of five or six (5 or 6; deep sedation per the American Society of Anesthesiologists’ definitions), there shall be a second health care professional **competent** in patient monitoring present in the room with the patient, dedicated to the monitoring function.

a) Both *The Ramsay Sedation Scale* and the *Continuum of Depth of Sedation* definitions can be found in Appendices A and B of this document, respectively**.**

3.3 Monitor the following:

a) vital signs (blood pressure, heart rate and respirations);

b) oxygen saturation;

c) end tidal carbon dioxide ($ETCO_2$ – capnometry or capnography) if available in the event a Ramsay Sedation Scale (RSS) score of five or six (5 or 6; deep sedation) is targeted (end tidal carbon dioxide monitoring is optional in patients where Ramsay Sedation Scale score of one to four [1 – 4; light or moderate sedation] is contemplated);

d) level of consciousness, responsiveness; and

e) general status.

3.4 Electrocardiogram monitoring is not required for all patients, though strongly advised in patients where underlying cardiopulmonary disease (e.g., previous myocardial infarction or dysrthymias) may impact the patient outcomes during or post-procedure.

3.5 The patient's vital signs and clinical responses should be monitored/observed closely at all times. Document all assessment data, including vital signs, medication used in sedation and the patient's response to both the procedure and sedation every 15 minutes as a minimum standard, and more frequently as needed dependent on the patient's condition.

3.6 Complete and document recovery from sedation (Aldrete Recovery Score or Ramsay Sedation Scale) post-procedure in the patient health record (see Appendix E *The Aldrete Recovery Score*).

4. Recovery and Discharge of Patients Following Procedural Sedation

4.1 Discharge only if the patient meets the following criteria prior to discharge and has returned to a physical and mental status that is comparable to his/her pre-sedation condition.

a) Aldrete Recovery Scores of eight (8) or greater are considered adequate for discharge.

b) Alternatively, recovery to a Ramsay Sedation Score of two (2) constitutes reasonable recovery to permit discharge.

c) Any patient that does not reach an Aldrete Recovery Score of eight (8) (Ramsay Sedation Scale, two [2]) or greater and/or the patient's baseline level of assessment, or has experienced any complications during the

treatment/procedure, shall be monitored post-procedure in an appropriate clinical area.

d) No matter the scale used, documentation in the patient's health record following procedural sedation is required.

4.2 For an outpatient discharged home, the patient will, if at all possible, be accompanied by a family member/caregiver who is able to care for the patient, with instructions and contact information for whom to report any post-procedural complications. If the patient chooses to leave without being accompanied or does not have this support available to them, document this information in the patient's health record.

4.3 Along with any other discharge materials and instructions (verbal and written) given, caution patients strongly against engaging in major decision-making or driving, operating heavy machinery, or engaging in similarly hazardous activities for a minimum period of eight (8) hours post-sedation or a period of time described by the authorized prescriber's orders.

4.4 Advise patients diagnosed with obstructive sleep apnea (OSA), and treated with any form of continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BiPAP), to employ their devices in any setting where they may fall asleep for a period of 24 hours post-discharge.

5. Transfer of Patients Following Procedural Sedation

5.1 The authorized prescriber may authorize the transfer of a patient who has received procedural sedation to an alternate clinical area or site if it is deemed necessary or appropriate.

5.2 The patient's Aldrete Recovery Score or Ramsay Sedation Scale score shall be assessed, acted upon, and recorded in the patient's health record prior to transfer to an alternate clinical area or site.

5.3 Patients with an Aldrete Recovery Score less than eight (8) or a Ramsay Sedation Scale score three (3) or higher following procedural sedation, shall:

a) only be transported/transferred post-procedure, if it is deemed necessary and authorized by the authorized prescriber; and

b) only be transported/transferred if the patient is accompanied by a health care professional competent to both monitor the patient and provide care in an emergency situation during transfer.

(i) The health care professional accompanying the patient shall remain with the patient until the receiving area accepts care of the patient.

5.4 Sedation beyond anxiolysis shall not be administered immediately prior to transfer between departments or sites unless authorized by the authorized prescriber.

a) If such approval from the authorized prescriber is obtained, the patient shall be accompanied by a health care professional competent to monitor the patient and to provide care in an emergency situation.

6. Documentation

6.1 Documentation of assessments; administration of medications, monitoring, transportation, and discharge – prior to, during and following the administration of procedural sedation – shall be recorded in the patient's health record.

6.2 Confirmation of the patient's planned post-procedure transportation shall be documented in the patient's health record.

6.3 Written post-procedural sedation discharge instructions shall be documented in the patient's health record and reviewed with the patient, family member and/or the patient's caregiver/**alternate decision-maker**, prior to the patient's discharge.

6.4 All **adverse events** and **close calls** occurring with patients receiving procedural sedation should be considered for reporting through the Alberta Health Services Safety Learning Reporting System immediately.

DEFINITIONS

Adverse event means an event that could or does result in unintended injury or complications arising from health care management, with outcomes that may range from death or disability to dissatisfaction, or require a change in care, such as prolongation of hospital stay.

Alberta Health Services setting means any environment where treatment/procedures and other health care are delivered by, on behalf of, or in conjunction with, Alberta Health Services.

Alternate decision-maker means a person who is authorized to make decisions with or on behalf of the patient. These may include, specific decision-maker, a minor's legal representative, a guardian, a "nearest relative" in accordance with the *Mental Health Act* or an agent in accordance with a Personal Directive or a person designated in accordance with the *Human Tissue and Organ Donation Act*.

Anxiolysis means a medication-induced state during which patients respond normally to verbal commands; although cognitive function and coordination may be impaired, ventilatory and cardiovascular functions are unaffected.

Authorized prescriber means a health care professional who is permitted by Federal and Provincial legislation, her/his regulatory college, Alberta Health Services and practice setting (where applicable) to prescribe medications.

Close call means an event in which a patient is exposed to or involved in a situation with the potential for harm. For one or more reasons the danger did not reach the patient (that is, no harm occurred).

Competent means a health care professional who possesses the knowledge, skills, attitudes and judgment required to safely perform professional health services.

Health care professional means an individual who is a member of a regulated health discipline, as defined by the *Health Disciplines Act* [Alberta] or the *Health Professions Act* [Alberta], and who practises within scope and role.

Health record means the Alberta Health Services legal record of the patient's diagnostic, treatment and care information.

Informed consent means the agreement of a patient to undergo a treatment/procedure after being provided with the relevant information about the treatment/procedure(s), its risks and alternatives and the consequences of refusal.

Patient means an adult or child who receives or has requested health care or services from Alberta Health Services and its health care providers or individuals authorized to act on behalf of Alberta Health Services. This term is inclusive of residents, clients and outpatients.

Procedural sedation means the administration of sedatives/anxiolytics/analgesics via the oral, intranasal, inhaled, intravenous, intramuscular, rectal or sublingual route, for the purposes of assisting patients in their ability to tolerate unpleasant diagnostic or therapeutic treatments/procedures

Treatment/procedure(s) means a specific treatment, investigative procedure(s), or series of treatment/procedure(s) planned to manage a clinical condition.

REFERENCES

- Appendix A *The Ramsay Sedation Scale*
- Appendix B *Continuum of Depth of Sedation*
- Appendix C *Procedural Sedation Monitoring and Response Requirements*
- Appendix D *Health Care Professional and Monitoring Frequency Requirement*
- Appendix E *The Aldrete Score*
- Alberta Health Services Governance Documents:
  - *Consent to Treatment/Procedure(s) Adults with Impaired Capacity and Adults Who Lack Capacity* Procedure (#PRR-01-02)
  - *Procedural Sedation* Policy (#PS-21)
- Alberta Health Services Resources:
  - Emergency Medical Services *Medical Control Protocols*
- Non-Alberta Health Services Documents:
  - College of Physicians and Surgeons of Alberta *Non-Hospital Surgical Facility Standards & Guidelines* (2014)

VERSION HISTORY

Date	Action Taken
September 16, 2016	Revised

APPENDIX A

The Ramsay Sedation Scale (RSS) (modified)

Value	Description (level of sedation)	Test to follow:
1	Awake: Patient is anxious and agitated, or restless, or both.	Observe the patient.
2	Awake: Patient is co-operative, orientated, and tranquil.	Observe the patient. Does patient make eye contact and respond to commands?
3	Awake: Patient responds to commands only.	Talk to the patient. Does patient make eye contact and respond to commands?
4	Asleep: Patient reacts with a brisk response to a light glabellar tap or a loud auditory stimulus.	Physically stimulate the patient by shaking the shoulder while speaking loudly. Does patient respond within 10 sec?
5	Asleep: Patient reacts with a sluggish response to a light glabellar tap or a loud auditory stimulus.	Physically stimulate the patient by shaking the shoulder while speaking loudly. Does patient respond after 10 sec?
6	Asleep: Patient does not respond to pain.	Use painful stimuli. No response.

Modified after Ramsay M.A., Savege T.M., Simpson B.R., Goodwin R.: *Controlled sedation with alphaxalone-alphadolone*. BMJ 1974, 2:656-659; and, van Dishoeck A.M. et al. *Reliable assessment of sedation level in routine clinical practice by adding an instruction to the Ramsay Scale*. Eur J Cardiovasc Nurs. 2009 Jun;8(2):125-8. [Used with permission.]

APPENDIX B

Continuum of Depth of Sedation

(American Society of Anesthesiologists)

	Minimal Sedation Anxiolysis	*Moderate Sedation/ Analgesia* *("Conscious Sedation")*	*Deep Sedation/ Analgesia*	*General Anesthesia*
Responsiveness	Normal response to verbal stimulation	Purposeful** response to verbal or tactile stimulation	Purposeful** response following repeated or painful stimulation	Unarousable 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

Committee of Origin: Quality Management and Departmental Administration (Approved by the ASA House of Delegates on October 13, 1999, and amended on October 21, 2009)

Definition of General Anesthesia and Levels of Sedation/Analgesia*

Minimal sedation (anxiolysis) is a drug-induced state during 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.

Moderate sedation/analgesia ("conscious sedation") is 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.

Deep sedation/analgesia is 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.

[Continued next page]

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.

Because sedation is a continuum, it is not always possible to predict how an individual patient will respond.

- Hence, practitioners intending to produce a given level of sedation should be able to rescue*** patients whose level of sedation becomes deeper than initially intended.
- Individuals administering Moderate Sedation/Analgesia ("Conscious Sedation") should be able to rescue*** patients who enter a state of Deep Sedation/Analgesia, while those administering Deep Sedation/Analgesia should be able to rescue*** patients who enter a state of General Anesthesia.

* Monitored Anesthesia Care does not describe the continuum of depth of sedation, rather it describes "a specific anesthesia service in which an anesthesiologist has been requested to participate in the care of a patient undergoing a diagnostic or therapeutic procedure."

** Reflex withdrawal from a painful stimulus is NOT considered a purposeful response.

*** Rescue of a patient from a deeper level of sedation than intended is an intervention by a practitioner proficient in airway management and advanced life support. The qualified practitioner corrects adverse physiologic consequences of the deeper-than-intended level of sedation (such as hypoventilation, hypoxia and hypotension) and returns the patient to the originally intended level of sedation. It is not appropriate to continue the procedure at an unintended level of sedation.

APPENDIX C

Procedural Sedation Monitoring and Response Requirements

Monitoring/Medical Equipment	Emergency Equipment/ Medications
Cardiac monitor and/or non-invasive blood pressure monitor and/or manual blood pressure cuff and stethoscope	Appropriate size airways and resuscitation bag and mask, Extraglottic Devices
Pulse oximeter	Suction
Oxygen administration equipment (connected and ready to administer oxygen)	Medication to reverse the sedation
IV supplies and accessory equipment such as syringes, needles	
End Tidal Carbon Dioxide ($ETCO_2$) monitoring (as possible)	

APPENDIX D

Health Care Professional and Monitoring Frequency Requirement

	Minimal Sedation Anxiolysis (Ramsay 1 and 2)	**Moderate Sedation (Ramsay 3 and 4)**	**Deep Sedation (Requiring Continuous Assistant) (Ramsay 5 and 6)**
Intra-procedural Health Care Professional	**Minimum One (1) Health Care Professional**	**Minimum Two (2) Health Care Professionals** • One to perform procedure and order medication • One to **assist the proceduralist,** monitoring the patient and administer medication as needed	**Minimum Three (3) Health Care Professionals** • One to perform procedure and order medication • One **dedicated** to assisting with procedure • One **dedicated** to monitoring patient and administration of medication (must be Competent to administer medication by IV injection and **must not** be assisting with procedure)
Intra-procedural Monitoring Frequency & Documentation	• Medication documentation is completed • Vital signs may be required dependent on the patient's condition	• Place patient on continuous oximetry • Monitor/observe patients at all times. Document vital signs at the time the assessment takes place or every fifteen (15) minutes as a minimum standard.throughout the procedure and immediately following procedure	• Place patient on continuous oximetry • Monitor and document vital signs every 5 minutes throughout the procedure and immediately following procedure • Capnography (by Dec 31 2016)
Post-procedural Health Care Professionals and Monitoring Frequency & Documentation	• Medication documentation is completed • Vital signs may be required dependent on the patient's condition	• Monitor and document vital signs every 15 minutes for at least 30 minutes and until the patient reaches Aldrete Score of 8 or returns to baseline level of assessment	• Document vital signs every 15 minutes as a minimum standard and more frequently as needed – dependent on the patient's condition throughout the procedure and immediately following procedure; and, until the patient reaches Aldrete Score of 8 or returns to baseline level of assessment

A patient who experiences an intra-procedure complication or requires a reversal agent must be monitored for a minimum of two (2) hours post-procedure and achieve an appropriate Aldrete or Ramsay score prior to being discharged.

APPENDIX E

The Aldrete Score

		Score
Activity ▪ Able to move voluntarily or on command	4 extremities =	2
	2 extremities =	1
	0 extremities =	0
Respiration	Able to deep breathe and cough freely =	2
	Dyspnea or limited breathing =	1
	Apneic =	0
Circulation	BP ± 20% of Pre-anesthetic level =	2
	BP ± 20 – 50% of Pre-anesthetic level =	1
	BP greater than or equal to 50% of Pre-anesthetic level =	0
Consciousness	Fully awake =	2
	Arousable on calling =	1
	Not responding =	0
Colour	Pink =	2
	Pale, dusky, blotchy, jaundiced, other =	1
	Cyanotic	0
	TOTAL SCORE	

Aldrete J.A., Kroulik D. Recovery Score. Anesthesia Analgesia. 1970; 924-933. [Used with permission.]