

St George/Sutherland Hospitals And Health Services



Health
South Eastern Sydney
Local Health District

Clinical Business Rule SGSHHS CLIN081

INTRAVENOUS SEDATION

This clinical business rule (CIBR) applies to adults 16 years and over only.

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| <p>Cross references (including NSW Health/ SESHHS policy directives)</p> | <ul style="list-style-type: none"> • Australian and New Zealand College of Anaesthetists (ANZCA) Policy PS9 <i>Guidelines on Sedation and/or Analgesia for Diagnostic and Interventional Medical, Dental or Surgical Procedures</i> (2010). • IV Sedation Training Course for Nursing and Medical Staff – Training Manual • NSW DOH PD 2005_406 <i>Consent to Medical Treatment; Patient Information</i> • NSW DOH PD 2007_077 <i>Medication Handling in NSW Public Hospitals</i> |
| <p>1. What it is</p> | <ul style="list-style-type: none"> ▪ Recommendations for the care of adults (defined as 16 years and over) receiving minimal to moderate intravenous (IV) sedation and/or analgesia for diagnostic & therapeutic procedures ▪ A framework for the minimum standard of care for patients receiving IV sedation and/or analgesia for procedures in the Radiology Department and other relevant departments |
| <p>2. What it is not</p> | <p>This CIBR does not:</p> <ul style="list-style-type: none"> • Cover every aspect of IV sedation. It reflects the minimum standards for IV sedation, and is based on ANZCA policy PS9 <i>Guidelines on Sedation and/or Analgesia for Diagnostic and Interventional Medical, Dental or Surgical Procedures</i> (2010). • Apply to the administration of IV sedation in the Emergency Department or Operating Theatres. Department specific workplace instructions apply in these areas. |
| <p>3. Employees it applies to</p> | <p>Medical officers (MO) and registered nurses (RN) performing or assisting with procedures requiring IV sedation or analgesia</p> |
| <p>4. When to use it</p> | <p>When administering intravenous sedation for diagnostic and procedural purposes OUTSIDE of the Operating Theatres and Emergency Department.</p> |
| <p>5. Why is it necessary</p> | <p>Because sedation is a continuum it is not always possible to predict how an individual will respond. Practitioners intending to produce a given level of sedation should be able to rescue patients whose level of sedation becomes deeper than initially intended. MO and RN require specific knowledge and skills to maximise patient safety and ensure that complications are effectively managed. Loss of consciousness due to sedation carries the same risks as general anaesthesia. Risks associated with IV sedation include:</p> <ul style="list-style-type: none"> ▪ Unintentional loss of consciousness ▪ Respiratory & cardiovascular depression ▪ Depression of protective reflexes eg: cough and/or gag reflex |
| <p>6. Who is responsible</p> | <p>SGSHSS Director of Clinical Services Directors of Nursing and Midwifery</p> |

7. Process

7.1 Definitions

Procedural sedation and or analgesia implies that the patient is in a state of drug-induced tolerance of uncomfortable or painful diagnostic or interventional medical, dental or surgical procedures. Lack of memory for distressing events and/or analgesia are desired outcomes, but a lack of response to painful stimulation is not assured.

- **Conscious sedation** is defined as a drug induced depression of consciousness during which patients are able to respond purposefully to verbal commands or light tactile stimulation. Only exceptionally will interventions be required to maintain a patent airway, spontaneous ventilation or cardiovascular function. Conscious sedation may be achieved by a wide variety of drugs including propofol and may accompany adequate local anaesthesia. All conscious sedation techniques should provide a margin of safety that is wide enough to render loss of consciousness unlikely.
- **Deep levels of sedation**, where consciousness is lost and patients only respond to painful stimulation, are associated with the loss of the ability to maintain a patent airway, inadequate spontaneous ventilation and/or impaired cardiovascular function. Deep levels of sedation may have similar risks to general anaesthesia, and may require an equivalent level of care.
- **Analgesia** is a reduction or elimination of pain perception, usually induced by drugs which act locally (by interfering with nerve conduction) or generally (by depressing pain perception in the central nervous system).

Level of Consciousness Scale

- 1 = Conscious/ alert
- 2 = Reacts to verbal stimuli/ drifts off to sleep
- 3 = Reacting to physical but not verbal stimuli
- 4 = Unconscious

7.2 Staff Requirements

- One staff member (a RN or MO hereafter referred to as the "monitor"), additional to the proceduralist, must be present whose SOLE responsibility is to monitor the level of consciousness and cardiorespiratory status of the patient, and initiate resuscitation if required. The monitor must not leave during the procedure except when another similarly skilled staff member takes his/her place.
- The monitor must be skilled in basic airway management and cardiovascular resuscitation, and understand the pharmacology of any sedative drugs used.
- Where the proceduralist requires an assistant (e.g. gastrointestinal endoscopy, complex radiological procedures) a minimum of 3 staff members must be present; the proceduralist, assistant to the proceduralist and monitor.

7.3 Educational Preparation for the Procedure Monitor

- MOs/RNs involved in ordering or administering IV sedation will have successfully completed the requirements of the *IV Sedation Training Course for Nursing and Medical Staff*.
- It is strongly recommended that RN's successfully complete Advanced Life Support training.
- Information regarding IV sedation and Advanced Life Support training are made by contacting the Staff Education department at St George Hospital 9113 2594.

7.4 Preparation of the Patient and Staff Responsibilities

The proceduralist or delegate (who must be a MO) is responsible for:

- Obtaining and documenting a comprehensive medical history
- Obtaining informed written consent for the procedure/administration of sedation using the *Request/Consent to Medical Treatment/Procedure form* (refer to NSW Health PD 2005_406)
- Obtaining anaesthetic consultation for patients with severe or multiple co-morbid illnesses, or if the patient has had previous anaesthetic or airway difficulties
- Arranging anaesthetic attendance throughout the procedure if it is likely that sedation to the point of unconsciousness will be necessary
- Arranging anaesthetic attendance for procedures in non-fasted patients or patients with abnormal gastric emptying
- Reviewing medications to determine potential interaction with sedative drugs and adjusting treatment plan accordingly

The nurse is responsible for ensuring:

- The pre sedation assessment section of the SESIAHS IV sedation chart and medical assessment have been completed and documented in the clinical notes
- Advise patients that they are not to consume alcohol within 24hrs post procedure
- All patients for elective procedures under sedation are fasted - 6 hours for solids and 2 hours for clear fluids
- Secure IV access is established prior to the procedure

7.5 Equipment

Equipment to efficiently oxygenate and ventilate the patient must be immediately available and functioning including:

- High wall suction
- Wall oxygen
- Oxygen delivery masks and tubing – Hudson and non-rebreather masks
- A self-inflating bag plus a range of equipment for advanced airway management including Guedel's airways, nasopharyngeal airway, endotracheal tubes and related equipment
- Range of intravenous fluids suitable for resuscitation, cannulae and administration sets
- A fully stocked resuscitation trolley containing all required equipment and medication must be immediately available

7.6 Monitoring during the Procedure

Refer to section 7.2 for staffing requirements during the procedure.

- Baseline oxygen saturation, blood pressure, heart rate and respiratory rate must be recorded
- During the procedure all patients must be monitored with continuous pulse oximetry
- Blood pressure, heart rate and respiratory rate must be measured and documented at least every 5 minutes during the procedure and sedation
- Other monitors such as ECG or capnometry may be required for patients with severe or multiple co-morbid diseases/ illnesses
- **ALL** sedated patients must receive supplemental oxygen as clinically indicated, to maintain the patient's baseline oxygen saturations
- Oxygen should remain insitu until the patient has returned to their pre procedure state of consciousness.

7.7 Medication Administration during the Procedure

- All relevant policies and clinical business rules must be followed when both prescribing and administering intravenous sedative agents (refer to cross references).
- Intravenous anaesthetic agents such as propofol must only be used by an anaesthetist. These agents **MUST NOT** be administered by the proceduralist, assistant or monitor (unless

the monitor is an anaesthetist).

- The most appropriate and recommended agents used are small incremental doses of midazolam (0.5 -2 mg) and fentanyl (25-50 microg). These doses are a guide only, and must be modified according to the patient's age, weight and clinical condition. Refer to 7.8 for additional precautions for using IV midazolam.
- Reversal agents (naloxone, flumazenil) must be immediately available
- Simply reversing the sedation is not appropriate as the patient can become re-sedated after discharge from the procedure area.
- Drugs commonly used for cardiovascular resuscitation (adrenaline, atropine, lignocaine) must be immediately available
- All drugs, dosages and timing of administration must be documented on the SESIAHS IV Sedation Chart or Anaesthetic Record

7.8 Additional Precautions for the Administration of Intravenous Midazolam

- The dose of midazolam must be individualised and titrated. The onset of sedation varies with the physical status of the patient. The onset of action is approximately 2 minutes post injection with maximum effect taking place in 5-10 minutes.
- IV midazolam must be administered slowly in incremental doses at a rate of no more than 1 mg in 30 seconds.
- *In adults below the age of 60* the initial dose is 2 to 2.5mg given five to 10 minutes before the beginning of the procedure. Further doses of 1mg may be given as necessary. A total dose greater than 5mg is usually not necessary.
- *In adults over 60 years of age*, debilitated or chronically ill patients, the initial dose must be reduced to 0.5-1.0mg and given five to 10 minutes before the beginning of the procedure. Further doses of 0.5 to 1mg may be given as necessary. Since in these patients the peak effect may be reached less rapidly, additional midazolam should be titrated very slowly and carefully. A total dose greater than 3.5mg is usually not necessary.

7.8.1 Storage of midazolam

- Midazolam is available in strengths of 1mg/mL and 5mg/1mL
- Departments where midazolam is used should keep one strength only
- In departments where both strengths must be kept these must not be stored adjacently. They must be stored so they are clearly differentiated.

7.9 Post Procedure Recovery and Discharge

- Monitoring according to the clinical condition of the patient must continue after the procedure by RN or MO appropriately trained in the management of patients with a decreased level of consciousness.
- If no dedicated recovery staff or space is available, no further procedures should be performed until the first patient has adequately recovered according to the following criteria:
 - Patient is able to maintain own airway
 - Level of consciousness < or equal to 2 (refer to section 6 Definitions)
 - Oxygen saturations > or equal to 95% on room air (or back to baseline levels),
 - Respiratory rate > 10 breaths/minute
 - Blood pressure and heart rate are within 20% of baseline levels
- The medical officers performing both the procedure and sedation must be available to manage complications in the recovery period until transfer back to the ward/unit
- The ward/unit nurse accepting responsibility for an inpatient post procedure must receive verbal and written handover including: type of procedure, name/dose of the medications administered and the patient's cardiorespiratory status during and post the procedure.
- Written handover will be sufficiently covered by completed documentation in accordance with section 7.10 Documentation.

7.9.1 Criteria for Transfer to Post Anaesthetic Care Unit (PACU)

- If the patient remains unresponsive to voice, requires airway support, or is haemodynamically unstable 15 minutes after the procedure concludes transfer to the PACU will be required
- The patient must be escorted by a MO from the procedure location during transfer to PACU.
- Monitoring of the patient's BP, pulse and oxygen saturations must be in place during transfer. Portable suction must also be available during transfer.

7.9.2 Additional Requirements for Outpatients

- Outpatients must remain under observation for at least two hours post administration of sedation administration. In addition, patients must score less than 5 on the modified Chung's Post Anaesthetic Scoring System prior to discharge home (Refer to 7.11 Discharge of Patient's following Procedure Involving IV Sedation)
- A MO must be consulted prior to discharging an outpatient
- Outpatients must be given the following discharge instructions:
 - Following sedation, patients may experience drowsiness or dizziness for up to 24 hours
 - Do NOT drive a motor vehicle, operate machinery or sign legal documents for at least 24 hours following sedation
 - All patients following sedation MUST be accompanied home by a responsible adult and have someone stay with them overnight

7.10 Documentation

- Pre-procedure medical assessment must be documented in the clinical notes
- Written informed consent using the *Consent to Medical Treatment Patient Information* form (according to PD 2005_406)
- All drugs given while in the procedure area including sedative, reversal, and resuscitation drugs must be recorded with doses and times of administration on a Anaesthetic Record or SESIAHS IV Sedation Chart
- Oxygen saturation, blood pressure, heart rate, respiratory rate and any other measured parameters must be documented in an appropriate location eg: bedside observation chart or SESIAHS IV sedation chart or Anaesthetic Record.

7.11 Discharge following a Procedure Involving IV Sedation

A total score of less than 5 on the *Modified Chung's Post Anaesthetic Scoring System* is required for the patient to be discharged home following a procedure involving IV sedation

A. Mental Status/ Activity

- 0= Orientated, steady gait, no dizziness or as pre-procedure
- 1= Orientated, ambulating with assistance
- 2= Dizziness, unable to walk

B. BP/ Pulse

- 0= Within 20% of pre-procedure value
- 1= 20%-40% of pre-procedure value
- 2= 40% difference from pre-procedure value

C. Pain and Nausea

- 0= No pain/ nausea
- 1= Mild pain or nausea
- 2= Moderate pain/ nausea

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| <p>D. Bleeding 0= NIL 1= Minimal 2= Moderate</p> <p>E. Intake and Output 0= Has had oral fluids and voided 1= Has had oral fluids or voided 2= Has not had oral fluids and has not voided (Adopted from St George Hospital Day Surgery/ Endoscopy Unit)</p> | |
| <p>8. Compliance evaluation</p> | <p>Q1: What is the responsibility of the monitor during a procedure involving IV sedation? A: The sole responsibility is to monitor the level of consciousness and cardiorespiratory status of the patient, and initiate resuscitation if required.</p> <p>Q2: What characteristics must prompt a reduction in the initial and total doses of midazolam? A: Adults over 60 years of age, debilitated or chronically ill patients. In these patients the initial dose must be reduced to 0.5-1.0mg with a total dose not usually exceeding 3.5mg.</p> <p>Q3: How is an outpatient's readiness for discharge assessed post a procedure involving IV sedation? A: An outpatient must score less than 5 on the modified Chung's post anaesthetic scoring system. A medical officer must also be consulted prior to discharging the patient.</p> <p>AUDITS</p> <ul style="list-style-type: none"> Pharmacy will conduct audits of use of flumazenil and investigate any increased use |
| <p>9. External references</p> | <p>NHS National Patient Safety Agency Rapid Response Report NPSA/2008/RRR011: Reducing risk of overdose with Midazolam injection in adults</p> |

I, Martin Mackertich, Director of Clinical Services of Central Hospital Network attest that this business rule is not in contravention of any legislation, industrial award or policy directive.

Revision and approval history

| Date | Revision number | Contact Officer (Position) | Date for revision |
|-----------|-----------------|---|-------------------|
| Oct 2006 | 0 | Cyrus de Souza, Staff Specialist Anaesthetist | Oct 2009 |
| July 2011 | 1 | Richard Morris, Director Anaesthetics SGH | July 2014 |