

Safe Conscious Sedation for Emergency Procedures in the Emergency Department	Type: Clinical Guideline Register No: 12031 Status: Public
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It is the personal responsibility of the individual referring to this document to ensure that they are viewing the latest version which will always be the document on the intranet

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Appendix 1 Broomfield Emergency Department Sedation Record

1.0 Purpose

1.1 To standardise/ improve patients care

1.2 This guideline is to help the clinicians (Emergency Medicine or other specialties) safely deal with adults who need procedures requiring sedation in the emergency department e.g. joint reduction, fracture manipulation.

2.0 Scope

2.1 Adult patients requiring procedural sedation in the emergency department age 18 or over.

2.2 Procedural sedation is contraindicated if any one of these applies:

- Procedures involving stimulation of the posterior pharynx
- Procedures that are more appropriately performed under general anaesthesia or in sterile operating theatre conditions
- History of airway instability, tracheal surgery, or tracheal stenosis or abnormal facial anatomy
- Active pulmonary infection or disease (including upper-respiratory infection, exception is for asthma)
- Head injury associated with loss of consciousness, altered mental status, or vomiting
- Central nervous system masses, abnormalities, or hydrocephalus
- Poorly controlled seizure disorder
- Acute Glaucoma or acute globe injury
- A full meal within 3 hours

2.3 Sedation may only take place in appropriately equipped areas where full monitoring and resuscitation facilities are available. There should be a tilting trolley, suction, oxygen, and equipment for advanced airway management

2.4 The use of Entonox as a sole agent or Intranasal Diamorphine is outside the scope of this guideline.

3.0 Staffing and Training

3.1 Sedation is always a 3 person team: 2 doctors and a dedicated nurse.

- All procedural sedation should be supervised by a consultant or a lead middle grade
- Procedural Doctor (Consultant or middle grade)
- Sedation Doctor (Consultant or middle grade)
- Registered Nurse – for entire sedation and recovery period
- Staff should be familiar with the drugs used; especially dose calculation and potential side effects.
- All staff undertaking a procedural sedation should have had training in advanced airway skills.

4.0 Introduction

4.1 Procedural sedation is a common practice in Emergency departments and is often performed in conjunction with clinicians from other specialties. The aims are to relieve anxiety, reduce pain, facilitate a procedure and provide amnesia. Sedation

can produce a continuum of states, ranging from minimal sedation (anxiolysis) through to general anaesthesia. This guideline specifically applies to moderate sedation (i.e. “conscious sedation”) and deep sedation.

- 4.2 Conscious Sedation is a technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. The drugs and technique used to provide conscious sedation should carry a margin of safety wide enough to render loss of consciousness unlikely.
- 4.3 If verbal responsiveness is lost the patient requires a level of care identical to that needed for general anaesthesia.

5.0 Overview of Process

- 5.1 ALL potential sedation cases MUST be discussed with the consultant/ the Lead Middle Grade and Sister in charge prior to sedation taking place
- 5.2 Sedation may only take place in appropriately equipped areas where full monitoring and resuscitation facilities are available.
- 5.3 Ensure pre-sedation assessment and consent
- 5.4 Give supplemental oxygen and use Capnography during the procedure and post procedure observation period.
- 5.5 Use only agents with which you are familiar
- 5.6 Full monitoring is required until the patient is fully recovered
- 5.7 Document episode in ED notes and fill out sedation record

6.0 Patient Assessment

- 6.1 Clinical Assessment prior to sedation should include a full history specifically:
- events leading to current problem
 - co-morbidities
 - past medical history
 - past surgical history and anaesthesia
 - fasting time
 - medications/recreational drugs
 - allergies.
- 6.2 Fasting status (assume full stomach in seriously ill/injured). Ideally, patients should be fasted for 6 hours prior to sedation, with sips of clear fluids permitted up to an hour before the procedure. It is accepted in emergency medicine that some patients will not be adequately fasted and a risk benefit analysis should be performed for each case. Following discussion with a senior Doctor, American Emergency Department guidance can be followed whereby patients can be fasted for 3 hours prior to sedation, with clear fluids permitted up to 2 hours prior. See the chart below for consensus based guidelines on fasting for emergency department sedation.

Oral intake in the prior 3 hours	Procedural Urgency ^b			
	<i>Emergent Procedure</i>	<i>Urgent Procedure</i>	<i>Semi-Urgent</i>	<i>Non-Urgent</i>
<i>Nothing</i>	All levels of sedation	All levels of sedation	All levels of sedation	All levels of sedation
<i>Clear liquids only</i>	All levels of sedation	Up to and including brief deep sedation	Up to and including extended moderate sedation	Minimal sedation only
<i>Light snack</i>	All levels of sedation	Up to and including dissociative sedation; non-extended moderate sedation	Minimal sedation only	Minimal sedation only
<i>Heavier snack or meal</i>	All levels of sedation	Up to and including dissociative sedation; non-extended moderate sedation	Minimal sedation only	Minimal sedation only

7.0 Examination and Observation

7.1 The Trust has adopted the grading system used by the ASA (American Society of Anaesthesiologists) and a grade should be given to each patient and documented in the ED medical record.

- ASA 1 (Fit & healthy, no systemic disease)
- ASA 2 (A patient with mild systemic disease).
- ASA 3 (A patient with severe systemic disease.)
- ASA 4 (A patient with severe systemic disease that is a constant threat to life)
- ASA 5 (A moribund patient who is not expected to survive without the operation)

- ASA grades 4 and 5 should only be sedated in the ED in dire emergencies.
- ASA grade 3 patients considered after discussion with the ED Consultant.

7.2 A focused physical examination including auscultation of the heart and lungs

7.3 Vital signs: 3 lead ECG, BP, HR, SpO2 and Capnography

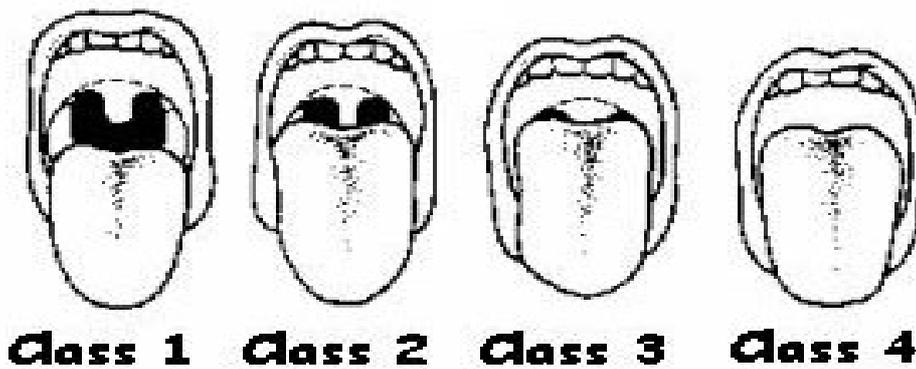
7.4 The patient's AIRWAY should be assessed to identify features associated with increased risk of difficult intubation and/or ventilation such as;

- Obesity
- Short neck,
- limited neck movements,
- dysmorphic face, Small jaw
- small mouth opening, protruding incisors, large tongue

7.4.1 Thyromental distance; measured from the thyroid notch to the tip of the jaw with the neck extended. Normal distance is > 7.0 cm; if less than 6cm intubation may be difficult.

7.4.2 Mobility of the mandible; if able to protrude lower teeth beyond upper incisors intubation usually straightforward.

7.4.3 Mallampati scores (see below); should be assessed with patient sitting up, opposite and on the same level as the examiner. Best assessed with the tongue not protruding.



Class 3 and 4 are associated with difficult intubation.

8.0 Patient monitoring

- 8.1 Observations must be recorded pre-sedation, during sedation and post sedation every 5 minutes
- 8.2 Clinical observation of the patient's appearance, respiratory rate, perfusion and behaviour must be maintained throughout the procedure in conjunction with other monitoring
- 8.3 The following observations are mandatory in all patients:
- Pulse rate
 - respiratory rate
 - Oxygen saturation
 - blood pressure (adults)
 - ECG
 - end tidal CO₂ (Capnography)
- 8.4 The routine use of supplemental oxygenation may allow SpO₂ to remain satisfactory but hide the fact that there is significant hypoventilation and the patient may be on the cusp of losing their airway.
- 8.5 Level of consciousness, using the ASA guidelines (see table 1) will need regular communication with the patient to assess

Table 1. Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia

	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 after 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

9.0 Consent

- 9.1 Informed consent for sedation and procedure must be obtained. Verbal consent is sufficient but must be documented.
- 9.2 In the event that the Patient has an impairment of, or a disturbance in the functioning of, their mind or brain and assessment shows that the Patient lacks capacity then a “best interest” decision is required and Family/Friends/Carers all need to be consulted and involved in the decision making process.” Completion of MCA2 documentation is required.
- 9.3 Where the Patient is deemed to be vulnerable, ie: any issues arising surrounding Learning disabilities/autism/elderly/dementia/mental health, then additional support can be gained by contacting the Lead Nurses in these areas.

10.0 Commonly used drugs (see table below)

- 10.1 Intravenous sedative/analgesic drugs should be given in small, incremental doses that are titrated to the desired end-point of analgesia and sedation
- 10.2 Familiarity with effect of the drug(s) used and their potential side effects is most important
- 10.3 In general single agents are safer than polypharmacy though no one agent or regime is conclusively more effective than another
- 10.4 Specific antagonists for the drug(s) given should be at hand (i.e. Naloxone and Flumazenil)
- 10.5 Doses in table are a guide. Care is required in old age, poor clinical condition etc.
- 10.6 Allow peak drug effect to occur before titrating further doses or other agents

Drug	Guide Dose		Peak	Duration	Cautions and Notes
MORPHINE (I.V.)	0.1-0.2mg/kg		5-30mins	3-4hours	If given with Midazolam, give morphine first and await peak effect
MIDAZOLAM (I.V.)	Adults <60yrs	Adults ≥ 60 y / debilitated or chronically ill	1-5mins	hours	Half life is approx. 2 hours but can be up to 4 times in the elderly. May cause hypotension and respiratory depression, particularly when rapidly administered or given with fentanyl (consider reduced dose of Midazolam) May be reversed with Flumazenil Consider reduced dose if used in combination with other agents.
	Initial dose: 2 - 2.5 mg Titration doses: 1 mg Total dose: 3.5 - 7.5 mg	Initial dose: 0.5 - 1 mg Titration doses: 0.5 - 1 mg Total dose: < 3.5 mg			
NITROUS & OXYGEN	O2:nitrous oxide 50:50		2mins	minutes	Useful supplement to other agents

11.0 Alternative Drugs (see table below)

11.1 The drugs named in the following table are for use only by doctors trained in their use, currently:

- Emergency Department consultants
- Named ED registrars or middle grades
- Anaesthetists (Registrar and above)

11.2 Other specialty doctors should not use these agents without discussion with ED consultant.

Drug	Guide Dose	Peak	Duration	Cautions and Notes
PROPOFOL	Elderly > 75 yrs 0.5 mg/kg bolus then 0.25 mg/kg Adults < 75 yrs 1 mg/kg bolus then 0.5 mg/kg	1 min	10mins	Prolonged apnoeas may occur, especially with fentanyl Causes cardiovascular depression and hypotension Beware using Propofol with Opioids (can cause severe respiratory and cardiovascular depression) 1% solution contains 10mg per mL
KETAMINE	IM 2-4mg/kg IV 0.5-1mg/kg (slow)	<5mins	5- 20mins	Rapid I.V. administration → apnoea/hypoventilation Be aware of emergence phenomena & hypersalivation. Consider adjunctive agents Avoid in patients in whom elevation of blood pressure would be a serious hazard. Contraindicated in patients with cardiovascular disease, thyroid disease or if agitated and sympathetically stimulated Atropine 0.01mg/kg (min 0.1mg, max 0.5mg) should be made ready in case of bradycardia Smaller doses (e.g. 20mg, sometimes repeated) can be used to facilitate short procedures e.g. radial fracture manipulation, where a haematoma block has already been given
FENTANYL	IV 0.5-2mcg/kg	2- 5mins	30- 60mins	Prolonged apnoeas may occur, especially with Propofol: reduce dose or omit if long acting opiates have been given in last 30 – 40 minutes. Action reversed by Naloxone Should be drawn up into a 2ml syringe (100micrograms in total) and labelled. Dosage intravenously of 50 - 100 microgram over 30 – 60 seconds. May cause significant respiratory depression and hypotension. Give at least 3 minutes before sedation ⁸

11.3 Ketamine

- Contraindicated in patients with cardiovascular disease, thyroid disease or if agitated and sympathetically stimulated
- Beware different concentrations available

11.4 Atropine 0.01mg/kg (min 0.1mg, max 0.5mg) should be made ready in case of bradycardia. Smaller doses (e.g. 20mg, sometimes repeated) can be used to facilitate short procedures e.g. radial fracture manipulation, where a haematoma block has already been given

11.5 Fentanyl

- A potent synthetic opiate with a rapid onset and short half life
- .Stocked in 2ml ampoules of 50µg/ml
- Should be drawn up into a 2ml syringe (100µg in total) and labelled.
- Dosage intravenously of 0.5 – 1 µg/kg over 30 – 60 seconds
- May cause significant respiratory depression and hypotension
- Give at least 3 minutes before sedation
- Reduce dose or omit if longer acting opiates already given within 30 – 40 min

12.0 Post-sedation management

12.1 Recovery area

- Admit patients to the observation ward (EAU)
- Advise parents or caretakers not to stimulate patient prematurely
- Continue oxygen saturation monitoring
- Will need continuous nursing observation until fully alert and responsive – beware if the patient has required Flumazenil as may become re-sedated

12.2 Discharge criteria

- The discharge checklist attached to the sedation record should be completed
- Recovery depends on drug(s) used
- Full recovery is defined as the patient returning to their pre-sedation state of consciousness and cardio respiratory function.
- Normal vital signs and ability to take oral fluids
- Give discharge instructions (see advice sheet): Nothing by mouth for 2 hours
- Responsible adult to accompany patient if discharged

13.0 Documentation

13.1 The Emergency department sedation record should be completed for all patients. (see Appendix 1)

13.2 Informed consent should be obtained and documented in the patients' notes

13.3 Patient specific record of the procedure including pre-procedure state of the patient, drugs used during the procedure, observations recorded during the sedation period and any adverse events should be recorded in the patients' medical record.

14.0 Risk Events

- 14.1 A Risk Event form must be completed in all events where this guideline has not been complied with.
- 14.2 Any serious complications or near misses will be reported through the hospital incident reporting system and discussed at the monthly ED clinical governance meetings.

15.0 Audit and Monitoring

- 15.1 The Emergency department will regularly audit the use of sedation against national standards. Compliance with this guideline will be audited once a year and presented at the weekly departmental teaching programme. It will be the responsibility of the author and the department lead for audit to make sure that recommendations from the audit are considered and implemented as necessary.

16.0 Implementation and Communication

- 16.1 It is a corporate responsibility to ensure that the guideline is uploaded to the intranet and website following ratification and to notify all staff via Staff Focus magazine.
- 16.2 It is the responsibility of the author to communicate locally with the ED staff any other relevant staff in the trust.

17.0 References

1. Safe Sedation of Adults in the Emergency Department; Report and Recommendations by the Royal College of Anaesthetists and The College of Emergency Medicine Working Party on Sedation, Anaesthesia and Airway Management in the Emergency Department. November 2012
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3. **Green SM**. Research advances in procedural sedation and analgesia. *Ann Emerg Med* 2007; 49: 31-36
4. **Green SM et al**. Fasting and Emergency department procedural sedation and analgesia: a consensus-based clinical practice advisory. *Ann Emerg Med* 2007;49: 454-461
5. **Goodwin SA et al. Clinical policy: procedural sedation and analgesia in the ED. *Ann Emerg Med* 2005; 45(2): 177-96**
6. Procedural Sedation and Anaesthesia on the Emergency Department (clinical policy); from the American college of Emergency Physicians clinical policies committee. February 2005
7. **Intercollegiate working party chaired by Royal college of Anaesthetists. UK Academy of medical royal colleges and their faculties-implementing and ensuring safe sedation practice for healthcare procedures in adults. London: Royal College Anaesthetists, 2001**

Observations – to be documented every 2-5 minutes until recovery

Time (5mins)	Initial						Final
HR							
BP							
RR							
Sats							
ETCO2							
AVPU							