University Hospitals of Derby and Burton
NHS Foundation Trust

TRUST POLICY FOR INTRAVENOUS SEDATION OF ADULTS

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	1	2015	R. Curtis	Change from guideline to policy
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	3	1/2022	R. Curtis	Update to policy

Intended Recipients: All staff involved in the provision of intravenous (IV) sedation or the care of patients who have undergone IV sedation

Training and Dissemination: All clinical departments using intravenous sedation in adults

To be read in conjunction with:

Trust Policy for the assurance of competence of non-consultant career grade medical staff

Local sedation guidelines in specialist clinical areas

In consultation with and Date:

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TRUST POLICY FOR INTRAVENOUS SEDATION OF ADULTS

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TRUST POLICY FOR INTRAVENOUS SEDATION OF ADULTS

1. Introduction

Intravenous (IV) sedation is used by practitioners to facilitate healthcare procedures in patients that may otherwise be uncomfortable or unpleasant. Due to the nature of the drugs used during sedation there is the potential that events may occur that have the potential to cause harm to patients, with errors in the selection of midazolam during conscious sedation being a Never Event in 2015-16 (1). A recent publication has been produced that describes safe sedation practice (2). This document sets out the necessary conditions to allow safe intravenous conscious sedation to take place within the trust in the adult (over 18 years) patient population. The Policy will be updated as necessary as new guidance from specialist societies and organisations is published.

2. Purpose and Outcomes

The purpose of this Policy is to ensure that high quality, safe sedation is given to patients undergoing procedures in all areas of the Trust.

The expected outcome of the Policy is that each department that provides sedation does so in-line with the Policy.

Whilst primarily aimed at moderate sedation, it should be remembered that sedation is a continuum and that minimal sedation can easily become moderate sedation, and moderate sedation deep sedation.

This Policy specifically excludes patients undergoing sedation to facilitate critical care within the intensive care environment, which is covered by the existing intensive care unit policy, and the sedation of agitated patients not undergoing a healthcare procedure.

3. Definitions Used

Sedationist – dedicated practitioner whose sole role it is to provide sedation for a procedure whilst also monitoring the patient. They should take no part in the procedure itself.

Operator sedationist – practitioner who provides or supervises the sedation for a procedure and who also performs the procedure.

Sedation assistant – a registered nurse, ACP or appropriately trained healthcare assistant whose role is to monitor the patient's comfort, safety and observations during the procedure. They should communicate any changes to the operator-sedationist. If a trained nurse, who has completed their IV drug competencies, then under the direct supervision of the "prescriber" they may administer drugs to the patient. They should be hospital life support trained as a minimum.

Procedure Assistant – a registered nurse, ACP or healthcare assistant whose role it is to assist the operator-sedationist in the performance of the

procedure and who has undergone local training in order that they can do this.

Minimal sedation / anxiolysis – normal response to verbal stimulation, with the cardiorespiratory system and airway unaffected.

Moderate sedation – purposeful response to verbal or tactile stimulation, no airway interventions required, adequate ventilation and cardiovascular function usually maintained.

Deep sedation - describes a state where the patient cannot easily be aroused but responds purposefully to repeated or painful stimulation. It may be accompanied by clinically significant ventilatory depression. The patient may require assistance maintaining a patent airway, and positive pressure ventilation. Cardiovascular function is usually maintained.

4. Key Responsibilities / Duties

Sedation Group

- Produce sedation Policy
- Oversee sedation activities with the Trust including review of adverse events and the reporting of findings to the Learning Review Group.

Clinical Directors

- Ensure that the department complies with this Policy
- Ensure that all members of department providing sedation maintain appropriate continuing professional development regarding sedation and that they remain competent to provide sedation.

Individual Practitioners

- Maintain continuing professional development regarding sedation and be able to demonstrate competence in sedation techniques.

5. Intravenous Sedation in Adult Patients

5.1 Pre-assessment

5.1.1. All patients should be pre-assessed prior to the commencement of sedation. This should include an assessment of any comorbidities, medication, allergies and fasting status and the recording of baseline physiological parameters (oxygen saturations, respiratory rate, pulse rate, blood pressure, consciousness level, temperature).

5.1.2. If the patient is unable to lie flat for any reason consideration should be given as to whether it is possible to perform the intended procedure with or without sedation.

5.1.3. There should be an assessment of the airway, especially of the ability to maintain oxygenation in the event of over sedation or an emergency (see Appendix 1).

5.1.4. In cases where patients have multiple comorbidities or risk factors, or where the procedure may require prolonged/deep sedation, consideration should be given as to the need for anaesthetic support.

5.1.4.1. Anaesthetic advice can be obtained via the anaesthetic department or the on-call anaesthetist via switchboard if required.

5.1.5. If the procedure is being performed in an outpatient or daycase setting, an assessment of suitability to return home post procedure should take place.

5.2. Information and Consent

5.2.1. Information should be given to the patient about the procedure being performed and the sedation that will be given. This should ideally be given prior to the day of the procedure.

5.2.2. An explanation of the target state of sedation should be given to patients so that they are aware of what is aiming to be achieved e.g. anxiolysis vs moderate sedation.

5.2.3. Consent for sedation should be included with the consent for the procedure being performed. This should include alternative options to being given sedation.

5.3 Fasting

5.3.1. Each department should have a fasting policy relevant to the patients that they will be sedating.

5.3.2. By default, the standard fasting times should be 2 hours for clear fluids (including tea / coffee with minimal milk) and 6 hours for solids (including particulate fluids).

5.3.3. Factors that increase the risk of aspiration of gastric contents should be actively sought e.g. gastro-oesophageal reflux disease, hiatus hernia, obesity, bowel obstruction, GI bleeding, unfasted patients, pregnancy.

5.3.4. If sedation is to be used in unfasted patients (e.g. emergency / urgent situations) practitioners must be prepared to justify their actions in the event of an adverse occurrence.

5.3.5. In unfasted patients requiring emergency / urgent procedures consideration should be given as to whether anaesthetic/appropriately trained support is required to minimise the risk of aspiration.

5.4 Pre-sedation checks and Records

5.4.1. Prior to the commencement of a sedation episode a checklist should be performed during a “STOP” moment to identify any risk factors associated with the patient.

5.4.2. The pre-sedation checklist should ensure that the following pre-assessments have taken place;

- Assessment of patient comorbidities
- Medication history
- Allergies
- Assessment of fasting status/aspiration risk
- Assessment of ability to maintain oxygenation
- Baseline observations checked and recorded
- Sedation drugs prepared
- Sedation equipment present and checked
- Consent and specific pre-procedure checks completed.

5.4.2.1. Departments may use their own department specific checklists as long as it is ensured that the points described above are covered.

5.4.2.2. Departmental checklists should be approved by the Divisional Governance Groups

5.4.2.3. Appendix 4 contains a pre-sedation checklist which should be used in the absence of a specific departmental checklist.

5.4.2.4. The checklist in Appendix 4 should be used in addition to a specific departmental checklist if the departmental checklist does not contain the required checks as detailed above.

5.4.3.1. There should be a contemporary record of monitoring data from during and after the procedure.

5.4.3.2. Monitoring data should be recorded every 5 to 10 minutes, depending on the procedure being performed and the co-morbidities of the patient (see also section 5.6).

5.4.3.3. Monitoring data should include as a minimum heart rate, oxygen saturations, blood pressure (if being used) and sedation level.

5.4.3.4. There should be a contemporary record of the drugs administered (including dose and time given) both during and after the procedure.

5.4.3.5. In the absence of a department specific sedation record, the record in Appendix 5 should be used and completed.

5.5 Target State

5.5.1. Prior to commencement of sedation, practitioners should consider the target state of sedation that they will aim to achieve to allow the procedure to be safely performed (see Appendix 2).

5.5.2. Practitioners should remain aware that sedation is a continuum and be prepared to manage a level of sedation deeper than was anticipated. This includes ensuring that they have the necessary skills and equipment available to manage such a situation should it arise.

5.5.3. Deep sedation should only be given by an anaesthetist or healthcare professional with an equivalent skillset.

5.6 Monitoring and Oxygen

5.6.1. Devices for the administration of oxygen must be available.

5.6.2. All patients should be administered an appropriate concentration of oxygen from the commencement of sedation via the nasal or oral route.

5.6.3.1. A pulse oximeter should be attached to all patients undergoing sedation from before the commencement of sedation until recovery discharge criteria have been met.

5.6.3.2. Blood pressure monitoring should be readily available and should be used in patients with relevant comorbidities or when the target state moderate or deep sedation.

5.6.3.3. ECG monitoring should be readily available and should be used in all patients with relevant comorbidities or when the target state is moderate or deep sedation.

5.6.4.1. Capnography should be used in all patients where the target state is moderate or deep sedation[2].

5.6.4.2. Any department that does not currently use capnography for moderate sedation should plan to do so within three years of publication of this document (capnography in use by January 2025). This will necessitate planning for equipment procurement and staff training as required.

5.6.5. Emergency equipment in the form of a fully stocked resuscitation trolley should be immediately available within the clinical area and should have been checked according to manufacturers and local guidelines.

5.7 Choice of Technique

5.7.1 Secure intravenous access in mandatory prior to the commencement of sedation.

5.7.2 Practitioners should only use drugs that they are familiar with and have appropriate experience of using.

5.7.3. Wherever possible, ideally, only a single agent should be used for sedation, especially for non-painful procedures.

5.7.4.1. When used in combination, opioids and benzodiazepines work synergistically so should be titrated to response allowing the drugs time for their effect to occur before administering more.

5.7.4.2. If using multiple drugs the potential for respiratory depression may occur at lower doses and this should be actively considered when administering drugs.

5.7.5. In patients with hepatic or renal impairment, multiple co-morbidities, who are frail or elderly the dose of drug given should be reduced and titrated to response.

5.7.6. Only lower concentration midazolam (1mg/ml) should be used for sedation[3].

5.7.7. In patients over 70 years of age, it is recommended that only 2mg of midazolam is drawn up (3).

5.7.8.1. Cannulae and multilumen connectors should be flushed prior to leaving the procedural area.

5.7.8.2. At the end of the procedure the flushing of cannulae should be verbally confirmed to recovery staff and documented.

5.8 Antagonist Drugs

5.8.1. Antagonist drugs (flumazenil and naloxone) should be immediately available but do not need to be drawn up.

5.8.2.1 The dose of naloxone is 100-200 micrograms intravenously, with a subsequent dose of 100 micrograms every 2 minutes to a maximum of 10 milligrams.

5.8.2.2 Care should be taken as to the dose of naloxone when used in patients receiving long-term opioids or who are in pain (4).

5.8.3. The dose of flumazenil is 200 micrograms intravenously over 15 seconds, with further doses of 100 micrograms at 60 second intervals if required to a maximum of 1 milligram.

5.8.4. The use of antagonist drugs should be audited at least yearly and the results reported to the sedation group.

5.9 Personnel and Records

5.9.1. In all but brief, simple procedures (less than 5 minutes duration) there should be three members of staff: an operator-sedationist, a dedicated, trained sedation assistant to monitor the patient and a procedure assistant to help the operator-sedationist during the course of the performance of the procedure. At least one of the assistants should be a trained nurse or ACP.

5.9.2.1. When minimal sedation is being used, all members of the team should be trained to basic life support (BLS) or equivalent as a minimum, as per national guidelines[2].

5.9.2.2. When moderate sedation is being used, in addition to all team members being BLS trained at least one should be Immediate Life Support (ILS) trained (or equivalent), as per national guidelines[2].

5.9.2.3. When deep sedation is being used, in addition to all team members being BLS trained at least one should be Advanced Life Support (ALS) trained (or equivalent), as per national guidelines[2].

5.9.2.4. Departments should ensure that staff have an appropriate level of resuscitation training within 12 months of the publication of this Policy.

5.9.3.1. If the sedation assistant is a trained nurse who has completed their IV drug administration competencies then they may administer sedation medication to the patient under the direct instructions of the “prescriber” (the operator sedationist).

5.9.3.2. Prior to administering any drugs the sedation assistant must repeat back to the “prescriber” (operator sedationist) the name of the drug and the amount that is to be administered.

5.9.4. For brief, simple procedures (less than 5 minutes duration) the assistant monitoring the patient may assist the operator-sedationist with ancillary tasks of short duration that can be immediately interrupted.

5.9.5. At least one member of staff present should be competent in the use of basic airway manoeuvres, airway adjuncts, supraglottic devices and bag and mask ventilation.

5.10 Recovery

5.10.1. Patients should be recovered in a dedicated area where appropriate monitoring can be continued.

5.10.2. A dedicated, trained practitioner should remain with the patient until they have recovered from the effects of the sedation.

5.10.3. Monitoring should be continued until the patient has recovered from the effects of sedation.

5.10.4. Emergency equipment that has been appropriately checked should be available.

5.10.5. IV cannulae should removed if not required or their flushing should be documented and handed over if the patient is an in-patient.

5.11 Discharge

5.11.1. Each department should have discharge criteria that must be met prior to the patient being discharged.

5.11.2. Patients should only be discharged once their observations have returned to the pre-procedural state.

5.11.3. Verbal and written instructions should be provided to both the patient and the person who is accompanying them covering both recovery from sedation and from the procedure itself.

5.11.4. Appropriate contact details should be provided in case of problems once the patient has returned home.

5.11.5. If a patient does not recover from sedation sufficiently to allow discharge home, each department should have a local policy in place that specifies the admission process.

5.12 Training

5.12.1. All practitioners using sedation and sedation assistants should participate in continuing professional development. A list of topics that practitioners should be able to demonstrate appropriate knowledge and skills of is included in Appendix 3.

5.12.2. Trainees / non-medical practitioners providing sedation should not do so unsupervised until they have been deemed competent to provide sedation by a supervising consultant.

5.12.3. Procedure assistants should be appropriately locally trained within their department to provide assistance to the operator / operator sedationist as required.

5.13 Local Guidelines

5.13.1. Local sedation guidelines should adhere to the criteria defined by this Policy.

5.13.2. This Policy should be read in conjunction with any local sedation guidelines in specialist areas.

6. Monitoring Compliance and Effectiveness

6.1. Each department providing sedation will perform audit on a yearly basis. Suggested topics include: number of procedures performed by each operator, doses of drugs used ,unplanned admissions and operations within eight days of procedure, 30-day mortality, use of flumazenil, use of naloxone, need for ventilation, sustained drop in O2 saturation <90%.

6.2. The results of any sedation related audits should be reported to the Business Unit and Divisional Governance Groups and thence onto the Sedation Group for review.

6.3. Any incidences where the following have occurred should be reported via the DATIX system:

I. Use of any antagonist drugs i.e. flumazenil or naloxone to reverse over sedation

II. Any situation necessitating an emergency call e.g. arrest call, urgent call for anaesthetic assistance

6.4. Any cardiac arrest calls that have occurred in a situation where sedation has been given will be reviewed by the Sedation Group via the Resuscitation Group.

Monitoring Requirement :	To ensure standards outlined in this Policy are being adhered to

Monitoring Method:	Audit as detailed above by individual departments
Report Prepared by:	Dr R Curtis
Monitoring Report presented to:	Learning Review Group
Frequency of Report	Biannually

7. References

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2. Safe sedation Practice for Healthcare Procedures: An Update . Academy of Medical Royal Colleges, London, 2021. (https://www.aomrc.org.uk/wp-content/uploads/2021/02/Safe_sedation_practice_for_healthcare_procedures_update_0521.pdf)

3. NPSA Rapid Response Report: Reducing the risk of overdose with midazolam injection in adults. (http://nrls.npsa.nhs.uk/resoursces/?entryid45=59896)

4. Patient safety alert – risk of distress and death from inappropriate doses of naloxone in patients on long-term opioid or opiate treatment. (https://www.england.nhs.uk/wp-content/uploads/2014/11/psa-inappropriate-doses-naloxone.pdf)

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Appendix 1

Factors associated with a difficulty to maintain oxygenation

Obesity, sleep apnoea, current or previous pathology of the oropharynx, larynx or cervical spine, being edentulous, facial hair, mandibular hypoplasia, shared airway (e.g. upper GI endoscopy, bronchoscopy), poor mouth opening, poor neck movement.

Appendix 2

Target state of sedation

	Minimal Sedation/Anxiolysis	Conscious sedation	Deep sedation
Responsiveness	Normal response to verbal stimulation	Purposeful* response to verbal or tactile stimulation	Purposeful response following repeated or painful stimulation
Airway	Unaffected	No intervention required	Intervention may be required
Spontaneous Ventilation	Unaffected	Adequate	May be inadequate
Cardiovascular Function	Unaffected	Usually maintained	Usually maintained

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

Appendix 3

Knowledge and skills for sedationists, operator sedationists and sedation assistants

- ASA grading
- Pre-procedural assessment including prediction of difficulty in airway management
- Pre-procedural fasting and risk benefit assessment
- Consent and documentation
- Drug selection and preparation: benzodiazepine and opioid combinations, intervals between increments and reversal drugs
- Monitoring, complications (airway obstruction recognition, hypoxia, hypotension, inadvertent over-sedation) and rescue strategies
- Governance and audit.

Appendix 4

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Pre and post sedation checklist

Identification of personnel

Operator/Sedationist: _____

Assistant(s): _____

- ☐ Patient ID and consent checked and confirmed
- ☐ Equipment checked, available, and in working order
- ☐ Comorbidities assessed and any necessary investigations performed.
- ☐ Medication history and allergies assessed
- ☐ Fasting status and aspiration risk assessed
- ☐ Assessment of ability to maintain oxygenation
- ☐ No contraindications to procedural sedation exist
- ☐ Antagonist drugs immediately available
- ☐ Appropriate monitoring on place and attached to patient.
- ☐ Pre –sedation observations documented (weight, blood sugar (if applicable), temperature, consciousness level, pulse, blood pressure, respiratory rate) and frequent obs chart started.
- ☐ Patient receiving appropriate concentration of oxygen
- ☐ Adequate, secure IV access in place and checked

Completed by: _____ Signature: _____ Date: _____

Post sedation checklist

- ☐ Drug doses given and intra-procedure observations documented on chart
- ☐ Post sedation advice sheet given and explained to patient and care
- ☐ IR1 form completed if antagonist drug given
- ☐ All lumens of cannula/multilumen connectors flushed

Completed by: _____ Signature: _____ Date: _____

Appendix 5

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SEDATION RECORD CHART

Proposed procedure: _____

_____

Operator/sedationist: _____ Assistant(s):_____

Allergies:	Current medication:

Procedure and Post Procedure Observations

Baseline Observations	Time																					
	220																					
Heart rate:	210																					
	200																					
	190																					
	180																					
	170																					
BP:	160																					
	150																					
	140																					
	130																					
	120																					
	110																					
Sats:	100																					
	90																					
	80																					
	70																					
	60																					
Resp rate:	50																					
	40																					
	30																					
	20																					
	10																					
Blood sugar if diabetic:	0																					
	Sats (%)																					
	Resp rate																					
	O2 L/min																					
	AVPU																					
	CO2																					

Medication given (including reversal), dose, time, given by: