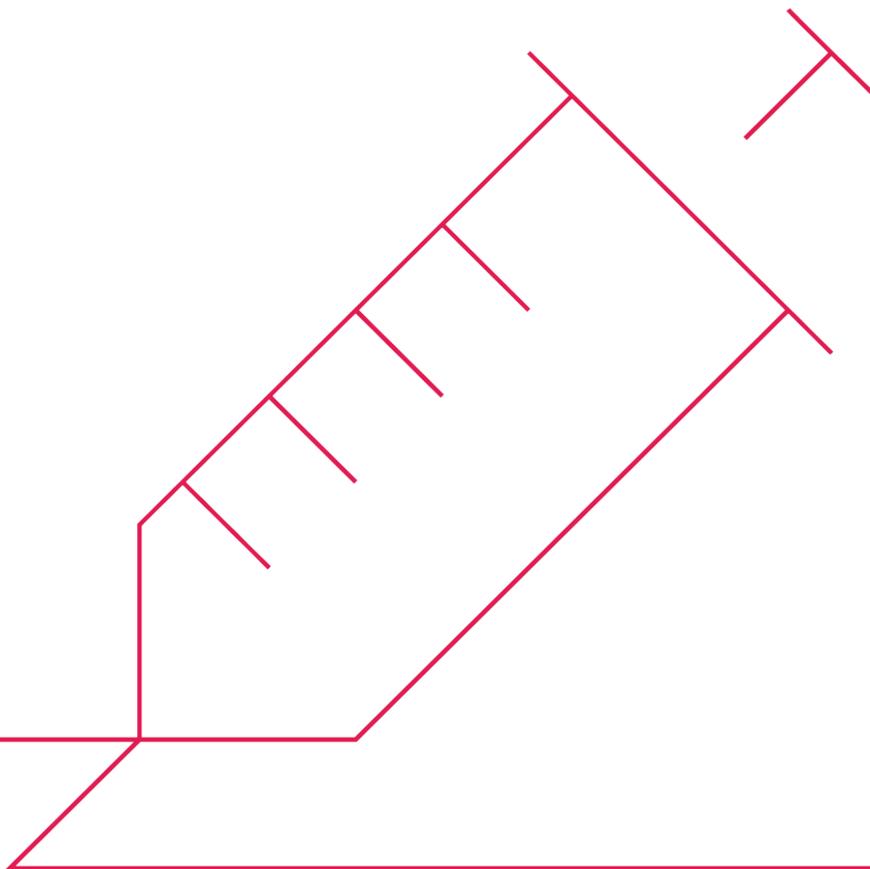


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Safe sedation practice for healthcare procedures

An update





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Background

Sedation for therapeutic and investigative procedures in healthcare is extensively and increasingly used. In 2013 the Academy of Medical Royal Colleges (the Academy) published *Safe sedation practice for healthcare procedures: Standards and guidance*¹ (this updated and replaced earlier guidance). The guidance recommended core knowledge, skills and competencies required for the safe delivery of effective sedation.

It also highlighted that safety will be enhanced by the provision of achievable standards, along with the availability of appropriate facilities and monitoring used under good organisational governance of staffing, equipment, education and practice. However, despite this, avoidable morbidity and mortality continue to occur.

Service reviews by the Royal College of Anaesthetists' (RCOA's) Anaesthesia Clinical Services Accreditation (ACSA) programme² suggest that the recommendations in the 2013 guidance have not been fully acted upon by many hospitals. Therefore, this update summarises the recommendations to provide regulators with a set of standards against which to inspect facilities providing sedation and to ensure that safety standards are being met.

This update does not replace the 2013 publication, but serves to re-emphasise and revise its recommendations in line with other authoritative guidance including sedation for patients aged under 19 years³ and monitoring during anaesthesia and recovery.⁴

Acknowledging that sedation is given in settings that range from small general dental practices to large university hospitals, this guidance update uses the word "facility" to cover the wide range of locations in which sedation is used.



Depth of sedation

There are several definitions of depth of sedation that are used in different guidance documents. The 2013 Academy guidance¹ referred to three levels as described by the American Society of Anesthesiologists (ASA) in 2009:

- Minimal sedation (anxiolysis) — normal response to verbal stimulation
- Moderate sedation (“conscious sedation”) — purposeful response to verbal or tactile stimulation
- Deep sedation — purposeful response only to repeated or painful stimulation.

The ASA document has since been updated to add general anaesthesia as a fourth level.⁵

A more recently introduced concept is that of Procedural Sedation Analgesia (PSA). It can be defined as “a technique of administering sedatives or dissociative agents with or without analgesics to induce a state that allows the patient to tolerate unpleasant procedures while maintaining cardiorespiratory function. PSA is intended to result in a depressed level of consciousness that allows the patient to maintain oxygenation and airway control independently”.⁶

This update continues to use the definitions used by the ASA⁵ and NICE³ but does not to use the term “conscious sedation”. This is in part because the purpose of much sedation is to provide a lack of consciousness that can be achieved with minimal or moderate sedation that does not affect a patient’s ability to maintain their own airway and to breathe normally and which causes a minimal impact on the patient’s cardiovascular system. A key point to note is well made in the ASA’s document:⁵

“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”.



Recommendations for facilities in which sedation is given

1. Equity across UK healthcare sectors ¹ [p3]

These recommendations should apply equally to facilities in the NHS and independent healthcare sectors.

2. Establishment of Sedation Lead and Sedation Group ¹ [pp3,23]

Facilities in which sedation is provided should have a nominated Clinical Lead for Sedation with expertise in sedation who is responsible and accountable for the delivery of safe sedation within the facility. Larger facilities such as hospitals and clinics where sedation is given in more than one location should have a Sedation Group (or committee) to provide appropriate governance of sedation within the facility. This group should include representatives from clinical teams using procedural sedation. The Sedation Group may function as a clearly identifiable subgroup of a broader medicines committee within the facility. The Sedation Group should hold regular, documented meetings and should be responsible to the Medical Director (or equivalent) of the facility for:

- The development and review of local Standard Operating Procedures (SOPs) for the administration of sedation
- Review of adverse clinical incidents
- Overview of staff training and continuing professional development in sedation practice.

3. Training and education in sedation practice ¹ [p24 et seq] ³ [pp9, 10, 15]

Practitioners providing sedation to patients for therapeutic and diagnostic procedures in healthcare facilities should undergo documented training in the knowledge, skills and competencies necessary for safe sedation, to include an understanding of comorbidities that require consideration, monitoring during sedation, the recognition of the complications of sedation, and the competencies necessary to rescue patients from these complications. When appropriate, this training should be regularly updated. The documentation held for individual sedation practitioners in a facility should set out in which clinical settings they are competent to practise and which drugs and combination of drugs they are trained to administer.

4. Routine audit of sedation practice ¹ [pp 3, 7, 18, 22, 23], ² [standard 1.1.2.5]

Routine audit of sedation should be conducted to include at least:

- The number of procedures performed under sedation by location and operator
- The sedation techniques and drugs used
- The monitoring used during sedation
- The occurrence of adverse events such as: ¹ [p23]
 - Sustained decrease in oxygen saturation to <90%
 - Hypotension (systolic blood pressure <90 mmHg in adults)



- The use of reversal agents such as naloxone and flumazenil
- Unplanned admission to hospital
- Cardiac or respiratory arrest.

5. Use of an incident reporting system ^{1 [pp7, 22, 23]}

An incident reporting system that allows the reporting of adverse incidents including those listed above should be used to facilitate the reporting of adverse events related to the use of sedation, the investigation and analysis of these events, and the sharing of learning and recommendations derived from investigation and analysis.

6. Patient preparation

a. Pre-assessment ^{1 [p13], 2 [standard 1.2.1.1], 3 [pp 8, 12]}

Patients undergoing sedation should undergo pre-assessment appropriate to their age, medical condition and the procedure to be performed.

b. Consent ^{1 [p13]}

Patients should consent to sedation, and should be told of the benefits of sedation, potential adverse events and the likelihood of awareness under sedation.⁷

c. Fasting ^{1 [p14], 3 [p13]}

Fasting before sedation is recommended for patients undergoing moderate or deep sedation.

7. Oxygen administration and patient monitoring

a. Oxygen administration ^{1 [p19]}

Supplemental oxygen should be available for all patients undergoing sedation and should be given routinely when the patient is in a deeper plane of sedation than minimal sedation.

b. Monitoring

Monitoring used for all patients undergoing sedation should include at least pulse oximetry. In addition, when the patient is in a deeper plane of sedation than minimal sedation, the following should all be used:

- **Capnography** ^{1 [p19], 2 [standard 1.3.1.1], 3 [p10], 4 [pp2, 5, 6]}
- **Electrocardiography (ECG)** ^{1 [p19], 2 [standard 1.3.1.1], 3 [p10], 4 [p6]}
- **Automated non-invasive blood pressure.** ^{1 [p19], 2 [standard 1.3.1.1], 3 [p10], 4 [p6]}

8. Procedural teams

a. Number of team members ^{1 [p26], 3 [pp8, 9]}

With the exception of brief procedures, such as dental extractions performed under minimal sedation, there should be at least three members of the procedural team:

- **Operator-sedationist**
- **Trained assistant to monitor the patient, with no other role, responsibility or tasks during the procedure**
- **Assistant to the operator.**



b. Dedicated sedationists ^{1 (pp 17, 20, 21)}

The use of a dedicated sedationist should be considered when the procedure is long or complex, or when the patient is frail or has significant comorbidities.

c. Deep sedation ^{1 (p18), 8 (p1)}

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

d. Resuscitation skills ^{1 (p27), 3 (p9)}

When minimal sedation is being used, all members of the procedural team should be trained to at least Basic Life Support (BLS) level (or equivalent).

When moderate sedation is being given, in addition to all team members being trained to BLS level (or equivalent), at least one member of the procedural team should be trained to at least Immediate Life Support (ILS) level (or equivalent).

When deep sedation is being given, in addition to all team members being trained to BLS level (or equivalent), at least one member of the procedural team should be trained to Advanced Life Support (ALS) level (or equivalent).



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