INTRODUCTION AND BACKGROUND...............................................................................................................2
Aims and objectives........................................................................................................................................2
METHODOLOGY.............................................................................................................................................3
Inclusion criteria.............................................................................................................................................3
Exclusion criteria............................................................................................................................................3
Search Terms..................................................................................................................................................4
Flow of data searches to identify audit cases...............................................................................................6
Sample size...................................................................................................................................................9
Data collection period.................................................................................................................................9
Data submission period...............................................................................................................................9
Data Sources................................................................................................................................................9
STANDARDS ..............................................................................................................................................10
Standards definitions.................................................................................................................................11
AUDIT QUESTIONS....................................................................................................................................12
Question and answer definitions................................................................................................................16
EVIDENCE BASE FOR STANDARDS...........................................................................................................17
REFERENCES...............................................................................................................................................21
INTRODUCTION AND BACKGROUND

The administration of sedative drugs to promote calm or sleep for a medical procedure is common practice in Emergency Departments (ED). Sedation is an important topic as it can lead to adverse effects if incorrectly undertaken. Studies by NCEPOD\(^1\) and NPSA\(^2\) have reported avoidable overdose and deaths.

As a result of occasional unpredictable pharmacokinetics and pharmacodynamics, drugs given for sedation can sometimes result in progression between levels of sedation irrespective of the practitioner’s intention. Sedation is mostly not a life-saving procedure and safety in its practice is paramount. The provider must be equipped with the necessary skills, support, resources and monitoring to manage this continuum and any possible complications. This is reflected in our standards set out for this audit which is as much for addressing safety before, during and after the procedure as it is for monitoring the effects of medication.

Inappropriately delivered and monitored sedation can cause unintended loss of consciousness and dangerous hypoxia\(^3\). However, if administered safely, it can enhance the patient’s experience and care by reducing pain and procedure time. It may also benefit the hospital by reducing admissions. It is an ideal audit topic as structure, process and outcomes can all be measured.

The AoMRC ‘Safe sedation practice for healthcare procedures’ guidance\(^4\) states “There should be audit of the process and outcome of procedures performed under sedation, particularly the incidence of major complications (e.g. cardiopulmonary arrest, unexpected admission to intensive care and delayed hospital discharge).”

The joint guideline from the RCoA and RCEM (2012)\(^5\), AoMRC guidance (2013)\(^4\) and NICE CG112\(^3\) are used as the basis for standards and audit measures.

Aims and objectives

The purpose of the audit is:
1. To benchmark current performance in EDs against RCEM/RCoA and AoMRC clinical guidance
2. To allow comparison nationally and between peers
3. To identify areas in need of improvement
4. To compare against previous performance
METHODOLOGY

Inclusion criteria
- Adult patients past their 16th birthday
- Patients undergoing procedural sedation at all levels (minimal, conscious, moderate, dissociative and deep)

Exclusion criteria
- Patients aged 15 or under.
- Patients receiving:
  - Entonox (50% nitrous oxide/oxygen) only
  - Opiates only
  - Entonox and opiates in combination
### Search Terms

The ICD 10 codes below can be used to help initially identify potential cases. This is not an exhaustive list; other search terms can be used but all potential patients should then be reviewed to check they meet the definitions & selection criteria before inclusion in the audit.

### ECDS codes to support case identification

<table>
<thead>
<tr>
<th>Related Audit Q</th>
<th>DATA GROUP</th>
<th>DATA ITEM NAME</th>
<th>ICD10</th>
<th>SNOMED</th>
<th>DM&amp;D</th>
<th>UDDA v 3</th>
<th>ECDS</th>
<th>CDS_Code mapping used for HRG Grouping</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2</td>
<td>EMERGENCY CARE ATTENDANCE ACTIVITY CHARACTERISTICS</td>
<td>EMERGENCY CARE ARRIVAL DATE</td>
<td>-</td>
<td>-</td>
<td>As per CDS 6.2 Type 010</td>
<td>-</td>
<td>-</td>
<td>Exclude all BEFORE 01/01/2017</td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>EMERGENCY CARE ATTENDANCE ACTIVITY CHARACTERISTICS</td>
<td>EMERGENCY CARE ARRIVAL DATE</td>
<td>-</td>
<td>-</td>
<td>As per CDS 6.2 Type 010</td>
<td>-</td>
<td>-</td>
<td>Exclude all AFTER 31/01/2017</td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>PATIENT IDENTITY – UNVERIFIED IDENTITY STRUCTURE</td>
<td>PERSON BIRTH DATE</td>
<td>-</td>
<td>-</td>
<td>As per CDS 6.2 Type 010</td>
<td>-</td>
<td>-</td>
<td>Exclude all BIRTH dates AFTER 31/12/2001</td>
<td></td>
</tr>
<tr>
<td>Related Audit Q</td>
<td>DATA GROUP</td>
<td>DATA ITEM NAME</td>
<td>ICD1 0</td>
<td>SNOMED</td>
<td>DM&amp;D</td>
<td>UDDA v 3</td>
<td>ECDS</td>
<td>CDS_Code mapping used for HRG Grouping</td>
<td>PbR_Category</td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td>---------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td>-------</td>
<td>----------</td>
<td>------</td>
<td>----------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>-</td>
<td>TREATMENT</td>
<td>PROCEDURE DATE</td>
<td>-</td>
<td>-</td>
<td>As per CDS 6.2 Type 010</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>TREATMENT</td>
<td>PROCEDURE TIME</td>
<td>-</td>
<td>-</td>
<td>As per CDS 6.2 Type 010</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>TREATMENT</td>
<td>Anaesthesia : local anaesthetic</td>
<td>-</td>
<td>386761002</td>
<td>-</td>
<td>113511000 0</td>
<td>232</td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>TREATMENT</td>
<td>Anaesthesia : entonox</td>
<td>-</td>
<td>427035008</td>
<td>-</td>
<td>113521000 0</td>
<td>234</td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>TREATMENT</td>
<td>Anaesthesia : regional block</td>
<td>-</td>
<td>27372005</td>
<td>-</td>
<td>113541000 0</td>
<td>233</td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>TREATMENT</td>
<td>Anaesthesia : sedation</td>
<td>-</td>
<td>50697003</td>
<td>-</td>
<td>113561000 0</td>
<td>235</td>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>
Flow of data searches to identify audit cases

Using codes listed above, first identify all patients attending ED between dates, then by age at time of attendance, then through treatment criteria.

Date and time of attendance

Age (exclude < 18 years)

Procedure

### Additional codes that may be of use

<table>
<thead>
<tr>
<th>Related audit Q</th>
<th>DATA GROUP</th>
<th>DATA ITEM NAME</th>
<th>ICD10</th>
<th>SNOMED</th>
<th>D&amp;MD</th>
<th>UDDA version 3</th>
<th>ECDS</th>
<th>CDS_Code mapping used for HRG Grouping</th>
<th>PbR_Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q13</td>
<td>TREATMENT</td>
<td>Supplemental oxygen</td>
<td>-</td>
<td>57485005</td>
<td>-</td>
<td>-</td>
<td>111110000</td>
<td>40</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>PROCEDURE</td>
<td>DATE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PROCEDURE</td>
<td>TIME</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Related audit Q</td>
<td>DATA GROUP</td>
<td>DATA ITEM NAME</td>
<td>ICD10</td>
<td>SNOMED</td>
<td>D&amp;MD</td>
<td>UDDA version 3</td>
<td>ECDS</td>
<td>CDS_Code mapping used for HRG Grouping</td>
<td>PbR_Category</td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td>----------------</td>
<td>-------</td>
<td>--------</td>
<td>------</td>
<td>----------------</td>
<td>------</td>
<td>----------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Q16b</td>
<td>DIAGNOSIS</td>
<td>Respiratory arrest</td>
<td>-</td>
<td>87317003</td>
<td>-</td>
<td>-</td>
<td>1414149000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Q16c</td>
<td>DIAGNOSIS</td>
<td>Cardiogenic shock</td>
<td>-</td>
<td>89138009</td>
<td>-</td>
<td>-</td>
<td>1411129000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Q16d</td>
<td>DIAGNOSIS</td>
<td>Cardiac arrest</td>
<td>-</td>
<td>410429000</td>
<td>-</td>
<td>-</td>
<td>1411399000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Q17</td>
<td>DISCHARGE DESTINATION</td>
<td>Discharge to home</td>
<td>-</td>
<td>306689006</td>
<td>-</td>
<td>-</td>
<td>2018111111</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge to residential home (procedure)</td>
<td>-</td>
<td>306691003</td>
<td>-</td>
<td>-</td>
<td>2018112111</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge to nursing home (procedure)</td>
<td>-</td>
<td>306694006</td>
<td>-</td>
<td>-</td>
<td>2018113111</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge to police custody (procedure)</td>
<td>-</td>
<td>306705005</td>
<td>-</td>
<td>-</td>
<td>2018114111</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patient discharge, to legal custody (procedure)</td>
<td>-</td>
<td>50861005</td>
<td>-</td>
<td>-</td>
<td>2018114511</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emergency department discharge to emergency</td>
<td>-</td>
<td>1066331000000109</td>
<td>-</td>
<td>-</td>
<td>2018311111</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Related audit Q</td>
<td>DATA GROUP</td>
<td>DATA ITEM NAME</td>
<td>ICD10</td>
<td>SNOMED</td>
<td>D&amp;MD</td>
<td>UDDA version 3</td>
<td>ECDS</td>
<td>CDS_Code mapping used for HRG Grouping</td>
<td>PbR_Category</td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td>----------------</td>
<td>-------</td>
<td>--------</td>
<td>------</td>
<td>----------------</td>
<td>------</td>
<td>---------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>department short stay ward (procedure)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emergency department discharge to ambulatory emergency care service (procedure)</td>
<td>1066341000000100</td>
<td></td>
<td></td>
<td></td>
<td>2018312111</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge to hospital at home service (procedure)</td>
<td>1066351000000102</td>
<td></td>
<td></td>
<td></td>
<td>2018313111</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sample size
RCEM recommends auditing a different number of cases depending on the number you expect to see within the data collection period. If this is an area of concern in your ED, you can submit data for more cases for an in depth look at your ED’s performance.

Basing the audit sample size on the number of cases in this way increases the reliability of your ED’s audit results.

Audited cases should be consecutive during the data collection period (1 January 2017 to 31 December 2017).

<table>
<thead>
<tr>
<th>Expected number of cases</th>
<th>Recommended audit sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 50</td>
<td>All eligible cases</td>
</tr>
<tr>
<td>50-250</td>
<td>50 consecutive cases</td>
</tr>
<tr>
<td>&gt;250</td>
<td>100 consecutive cases</td>
</tr>
</tbody>
</table>

Data collection period
From 1 January 2017 to 31 December 2017.
**NB:** You can start the audit at any point during the data collection period, as long as you submit the data by 31 January 2018.

Data submission period
Data can be submitted online at the link below between 1 August 2017 to 31 January 2018. You can find the link to log into the data entry site at [www.rcem.ac.uk/audits](http://www.rcem.ac.uk/audits)

Data Sources
ED patient records (paper, electronic or both).
# STANDARDS

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patients undergoing procedural sedation in the ED should have documented evidence of pre-procedural assessment, including:</td>
<td></td>
</tr>
<tr>
<td>a. ASA grading⁴</td>
<td>F</td>
</tr>
<tr>
<td>b. Prediction of difficulty in airway management⁴</td>
<td></td>
</tr>
<tr>
<td>c. Pre-procedural fasting status⁴</td>
<td></td>
</tr>
<tr>
<td>2. There should be documented evidence of the patient’s informed consent unless lack of mental capacity has been recorded⁴.</td>
<td>D</td>
</tr>
<tr>
<td>3. Procedural sedation should be undertaken in a resuscitation room or one with dedicated resuscitation facilities.</td>
<td>F</td>
</tr>
<tr>
<td>4. Procedural sedation requires the presence of all of the below:</td>
<td></td>
</tr>
<tr>
<td>a. a doctor as sedationist⁴</td>
<td>F</td>
</tr>
<tr>
<td>b. a second doctor, ENP or ANP as procedurist⁴</td>
<td></td>
</tr>
<tr>
<td>c. a nurse</td>
<td></td>
</tr>
<tr>
<td>5. Monitoring during procedural sedation must be documented to have included all of the below:</td>
<td></td>
</tr>
<tr>
<td>a. Non-invasive blood pressure⁴</td>
<td>F</td>
</tr>
<tr>
<td>b. Pulse oximetry⁴</td>
<td>F</td>
</tr>
<tr>
<td>c. Capnography⁴</td>
<td>F</td>
</tr>
<tr>
<td>d. ECG</td>
<td>F</td>
</tr>
<tr>
<td>6. Appropriate oxygen therapy should be given from the start of sedative administration until the patient’s condition is returned to baseline⁴.</td>
<td>D</td>
</tr>
<tr>
<td>7. For invasive procedures, a Local Safety Standard for Invasive Procedures checklist (LocSSIP) or NatSSIP compliant checklist is used⁶, ⁷.</td>
<td>D</td>
</tr>
<tr>
<td>8. Following procedural sedation, patients should only be discharged after documented formal assessment of suitability, including all of the below:</td>
<td></td>
</tr>
<tr>
<td>a. Return to baseline level of consciousness⁴</td>
<td>F</td>
</tr>
<tr>
<td>b. Vital signs within normal limits for the patient⁴</td>
<td>F</td>
</tr>
<tr>
<td>c. Absence of respiratory compromise⁴</td>
<td>F</td>
</tr>
<tr>
<td>d. Absence of significant pain and discomfort⁴</td>
<td>F</td>
</tr>
<tr>
<td>e. Written advice on discharge for all patients</td>
<td>D</td>
</tr>
</tbody>
</table>

**Grade definition**

**F - Fundamental:** need to be applied by all those who work and serve in the healthcare system. Behaviour at all levels and service provision need to be in accordance with at least these fundamental standards. No provider should provide any service that does not comply with these fundamental standards, in relation to which there should be zero tolerance of breaches.

**D - Developmental:** set requirements over and above the fundamental standards.

**A - Aspirational:** setting longer term goals.
### Standards definitions

<table>
<thead>
<tr>
<th>Standard</th>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 1</td>
<td>ASA</td>
<td>American Society of Anaesthesiologists Physical Status Classification. See answer definition for further detail.</td>
</tr>
<tr>
<td>Standard 2</td>
<td>Evidence of consent</td>
<td>A form with a ticked box for verbal consent is adequate, or documentation of verbal consent in the ED record. Written consent by the patient is not obligatory.</td>
</tr>
<tr>
<td>Standard 4</td>
<td>ENP, ANP</td>
<td>Emergency Nurse Practitioner, Advanced Nurse Practitioner</td>
</tr>
<tr>
<td>Standard 5</td>
<td>ECG, Capnography</td>
<td>Electrocardiogram, Sedation is a continuum. It is not always possible to predict the level of sedation in advance, therefore in this audit capnography is a standard for all sedation levels.</td>
</tr>
</tbody>
</table>
## AUDIT QUESTIONS

### Casemix

<table>
<thead>
<tr>
<th>Q1</th>
<th>Reference (do not enter identifiable data)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2</td>
<td>Date of arrival (dd/mm/yyyy) and time of arrival or triage, whichever is earlier (use 24 hour clock e.g. 11.23pm = 23:23)</td>
</tr>
</tbody>
</table>
| Q3 | Age of patient on attendance | • 16-40  
  • 41-64  
  • 65 and above |
| Q4 | Level of sedation intended | • Minimal  
  • Conscious – Moderate  
  • Deep  
  • Dissociative  
  • Not recorded |
| Q5 | Deepest level of sedation achieved | • Minimal  
  • Conscious – Moderate  
  • Deep  
  • Dissociative  
  • Not recorded |

### Pre-procedure

| Q6a | Were the following elements of pre-procedural assessment recorded in the ED notes? (tick all that apply) | • ASA grade  
  • Prediction of difficulty in airway management  
  • Pre-procedural fasting status |
| Q7 | Was there documented evidence of the patient’s informed consent for the sedation? | • Yes - consent given  
  • No - lack of mental capacity noted  
  • No - unable to assess mental capacity  
  • No information |

### Procedure

| Q8 | Was the sedation carried out in a resuscitation room or one with dedicated resuscitation facilities? | • Yes  
  • No  
  • Not recorded |
| Q9 | Which of the following staff were present during the procedure? (tick all that apply) | • Doctor  
  • Second doctor, ENP or ANP procedurist  
  • Nurse  
  • Other |
| Q10 | What was the speciality of the sedating practitioner? | • EM practitioner  
  • Anaesthetist  
  • Other  
  • Not recorded |
| Q11 | Which agents were used for sedation? (tick all that apply) | • Opioid  
• Benzodiazepine  
• Ketamine  
• Propofol  
• Other agent  
State name: ___________  
• Not recorded |

### Monitoring

| Q12 | Was there evidence of monitoring of the following during the procedure? (tick all that apply) | • Non-invasive blood pressure (NIBP)  
• Pulse oximetry  
• Capnography  
• ECG |

| Q13 | Did the patient receive appropriate oxygen therapy during the sedation? | • Yes  
• No (go to Q14)  
• Not recorded (go to Q14) |

| Q13a | (Only answer if YES to Q13) please state when oxygen was given | • From the start of sedative administration  
• After complication  
• From other point  
• Not specified |

| Q13b | (Only answer if YES to Q13a) Was appropriate oxygen therapy given until the patient’s condition returned to baseline? | • Yes  
• No |

| Q14 | What was the procedure for which sedation was required? (tick all that apply) | • Joint reduction  
• Chest drain  
• DC cardioversion  
• Other – please state |

| Q15 | Was the sedation to facilitate an invasive procedure? | • Yes  
• No (go to Q16)  
• N/A (go to Q16)  
• Not recorded (go to Q16) |

| Q15a | (Only answer if YES to Q15) If for an invasive procedure, was a LocSSIP checklist used (or other NatSSIP compliant checklist)? | • LocSSIP checklist  
• NatSSIP compliant checklist  
State name: ___________  
• Other  
State name: ___________  
• No  
• Not recorded |

### Adverse events

| Q16 | Did any of the following adverse events arise? |
| Q16a | Oxygen desaturation, severe (<75% at any time) or prolonged (<90% for >60s) | • Yes  
• No  
• Not recorded |

| Q16b | Apnoea, prolonged (>60s) | • Yes  
• No  
• Not recorded |
<table>
<thead>
<tr>
<th>Q16c</th>
<th>Cardiovascular collapse/shock</th>
<th>• Yes • No • Not recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q16d</td>
<td>Cardiac arrest/absent pulse</td>
<td>• Yes • No • Not recorded</td>
</tr>
<tr>
<td>Q16e</td>
<td>Other</td>
<td>• Yes State what: __________ • No</td>
</tr>
<tr>
<td>Q16f</td>
<td>Patient dissatisfaction with procedure (score of 5/10 or less) when assessed on leaving the resus/procedure room</td>
<td>• Yes • No • Not recorded</td>
</tr>
</tbody>
</table>

**Adverse events – further information**

➔ If answered yes to either Q16a-f please answer Q16g-j; if not, please skip to Q17

<table>
<thead>
<tr>
<th>Q16g</th>
<th>Did the adverse event lead to unplanned hospitalisation or escalation of care?</th>
<th>• Yes • No • Not recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q16h</td>
<td>Did any of the following outcomes arise? (tick all that apply)</td>
<td>• Death • Permanent neurological deficit • Pulmonary aspiration syndrome</td>
</tr>
<tr>
<td>Q16i</td>
<td>If an adverse event occurred, was this reported as follows? (tick all that apply)</td>
<td>• Reported to the department clinical lead • Discussed at the departmental clinical governance meeting • Via completion of World SIVA Adverse Sedation Event Reporting Tool? • Datix • Other method • Not reported/Not recorded</td>
</tr>
<tr>
<td>Q16j</td>
<td>If an adverse event has occurred, please provide details of the event or contact details if willing to participate in a structured interview and to supply a copy of the World SIVA form.</td>
<td>•</td>
</tr>
</tbody>
</table>
### Patient discharge

| Q17  | Was the patient discharged home from the ED? | • Yes  
|      |                                              | • No  
|      |                                              | • Not recorded  
| Q17a | (Only answer if YES to Q17) Were the following elements of formal assessment of discharge suitability documented? (tick all that apply) | • Return to baseline level of consciousness  
|      |                                              | • Vital signs within normal limits for the patient  
|      |                                              | • Absence of respiratory compromise  
|      |                                              | • Absence of significant pain and discomfort  
|      |                                              | • Written advice on discharge  

### Organisational audit

**PLEASE ANSWER THE FOLLOWING QUESTIONS ONCE PER EMERGENCY DEPARTMENT ONLY**

| Q1   | Is procedural sedation in children undertaken in your ED? | • No  
|      |                                                            | • Yes – by ED clinicians  
|      |                                                            | • Yes – by anaesthetic clinicians  
|      |                                                            | • Yes – not specified by whom  
| Q2   | Does your department have LocSSIP checklists for relevant procedures? | • Yes  
|      |                                                            | • No  

### Notes


Question and answer definitions

Q6a
ASA - American Society of Anaesthesiologists Physical Status Classification

<table>
<thead>
<tr>
<th>ASA PS Classification</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA I</td>
<td>A normal healthy patient</td>
</tr>
<tr>
<td>ASA II</td>
<td>A patient with mild systemic disease</td>
</tr>
<tr>
<td>ASA III</td>
<td>A patient with severe systemic disease</td>
</tr>
<tr>
<td>ASA IV</td>
<td>A patient with severe systemic disease that is a constant threat to life</td>
</tr>
<tr>
<td>ASA V</td>
<td>A moribund patient who is not expected to survive without the operation</td>
</tr>
<tr>
<td>ASA VI</td>
<td>A declared brain-dead patient whose organs are being removed for donor purposes</td>
</tr>
</tbody>
</table>

Q15a
NatSSIPs - “are intended to provide a skeleton for the production of Local Safety Standards for Invasive Procedures (LocSSIPs) that are created by multiprofessional clinical teams and their patients, and are implemented against a background of education in human factors and working as teams. The NatSSIPs do not replace the WHO Safer Surgery Checklist. Rather, they build on it and extend it to more patients undergoing care in our hospitals. They will standardise key elements of procedural care, ensure that care is harmonised – not just within organisations delivering NHS-funded care but also between organisations – and will reinforce the importance of education to patient safety.

LocSSIPs - “Organisations should develop Local Safety Standards for Invasive Procedures (LocSSIPs) that include the key steps outlined in the NatSSIPs and to harmonise practice across the organisation such that there is a consistent approach to the care of patients undergoing invasive procedures in any location.”

Q16c
Cardiovascular collapse/shock - clinical evidence of inadequate perfusion, cardiovascular compromise raising clinical concern, need for resus, fluid, or positioning of the patient.

Q16h
Pulmonary Aspiration Syndrome – known or suspected inhalation of foreign material such as gastric contents into the respiratory tract associated with new or worsening respiratory symptom

Q17
Patients discharged from the ED clinical decision unit (CDU) or observation ward should be treated as a discharge from the ED.
## EVIDENCE BASE FOR STANDARDS

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>EVIDENCE</th>
</tr>
</thead>
</table>
| 1. Patients undergoing procedural sedation in the ED should have documented evidence of pre-procedural assessment, including:  
   a. ASA grading\(^4\)  
   b. Prediction of difficulty in airway management\(^4\)  
   c. Pre-procedural fasting status\(^4\) | Safe sedation practice for healthcare procedures – standards and guidance  
The importance of pre-operative assessment and preparation of patients, focusing on medical, social and psychological assessment and evaluation of risk, taking into consideration the limitations of the setting, cannot be overestimated.  
Safe Sedation of Adults in the Emergency Department 2012 p3, p9, p10  
Recommendations for safe sedation in the Emergency Department - Level 1 sedation training ('conscious' sedation):  
- ASA grading,  
- Pre-procedural assessment including prediction of difficulty in airway management,  
- Pre-procedural fasting and risk benefit assessment |
| 2. There should be documented evidence of the patient's informed consent unless lack of mental capacity has been recorded\(^4\). | Safe sedation practice for healthcare procedures – standards and guidance  
Valid consent is an essential preliminary to sedation.  
Safe Sedation of Adults in the Emergency Department 2012 p3, p9, p10  
Recommendations for safe sedation in the Emergency Department - Level 1 sedation training ('conscious' sedation): Consent and documentation |
| 3. Procedural sedation should be undertaken in a resuscitation room or one with dedicated resuscitation facilities. | Safe sedation practice for healthcare procedures – standards and guidance  
Staffing and equipment must meet the needs of both the technique (including monitoring) and its possible complications. Appropriate recovery facilities and discharge criteria relevant to the patient’s destination are necessary.  
Safe Sedation of Adults in the Emergency Department 2012 p8, p9  
Moderate sedation/ analgesia ('conscious' sedation) using intravenous agents, typically benzodiazepines - location and facilities: Resuscitation room facilities |
| 4. Procedural sedation requires the presence of all of the below:  
   a. a doctor as sedationist\(^4\) | Safe sedation practice for healthcare procedures – standards and guidance |
b. a second doctor, ENP or ANP as procedurist

<table>
<thead>
<tr>
<th>Monitoring during procedural sedation must be documented to have included all of the below:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Non-invasive blood pressure</td>
</tr>
<tr>
<td>b. Pulse oximetry</td>
</tr>
<tr>
<td>c. Capnography</td>
</tr>
<tr>
<td>d. ECG</td>
</tr>
</tbody>
</table>

Staffing and equipment must meet the needs of both the technique (including monitoring) and its possible complications.

**Safe Sedation of Adults in the Emergency Department 2012** p3, p8, p10, p11

Moderate sedation/ analgesia (‘conscious’ sedation) using intravenous agents, typically benzodiazepines - Minimum staffing levels:
One physician as sedationist and one Physician or ENP as operator and one Nurse

**Safe Sedation practice for healthcare procedures – standards and guidance**

- Existing guidance for patients undergoing anaesthesia identifies the need for pulse oximetry, ECG and automated non-invasive blood pressure monitoring.
- The Association of Anaesthetists of Great Britain and Ireland recommend that continuous waveform capnography should be used to monitor adequacy of ventilation for all patients undergoing moderate or deep sedation, and should be available wherever any patients undergoing moderate or deep sedation are recovered and additionally where:
  - ventilation cannot be directly observed, e.g. MRI/CT
  - multiple drugs/anaesthetic drug techniques are used, and
  - pre-assessment highlights increased clinical risk.

**Safe Sedation of Adults in the Emergency Department 2012** p3, p8, p9, p10, p11

Moderate sedation/ analgesia (‘conscious’ sedation) using intravenous agents, typically benzodiazepines - Monitoring: ECG, NIBP, pulse oximetry. The use of capnography is recommended.

6. Appropriate oxygen therapy should be given from the start of sedative administration until the patient’s condition is returned to baseline.

**Safe Sedation practice for healthcare procedures – standards and guidance**

Oxygen, via nasal cannulae, should usually be administered from the commencement of sedation, through to readiness for discharge from recovery, particularly for patients with relevant medical conditions, where multiple drug techniques or anaesthetic drugs are used, or deeper levels of sedation administered.
Oxygen should be given to sedated patients, who may experience a fall in oxygen saturation from the baseline level measured on room air. Oxygen should be given from the start of sedative administration until the patient is ready for discharge from the recovery area.

7. For invasive procedures, a Local Safety Standard for Invasive Procedures checklist (LocSSIP) or NatSSIP compliant checklist is used.

NHS England National Safety Standards for Invasive Procedures
Organisations should develop Local Safety Standards for Invasive Procedures (LocSSIPs) that include the key steps outlined in the NatSSIPs and to harmonise practice across the organisation such that there is a consistent approach to the care of patients undergoing invasive procedures in any location.

8. Following procedural sedation, patients should only be discharged after documented formal assessment of suitability, including all of the below:
   a. Return to baseline level of consciousness
   b. Vital signs within normal limits for the patient
   c. Absence of respiratory compromise
   d. Absence of significant pain and discomfort
   e. Written advice on discharge for all patients

Safe Sedation practice for healthcare procedures – standards and guidance
Patients should be formally assessed for suitability for discharge from the clinical area where sedation has taken place. Discharge criteria are as follows:

- The patient has returned to their baseline level of consciousness.
- Vital signs are within normal limits for that patient.
- Respiratory status is not compromised.
- Pain and discomfort have been addressed.
- If there is a requirement to discharge the patient prior to meeting these criteria they should be transferred to an appropriate clinical environment with continuation of peri-procedure monitoring standards.
- Patients meeting discharge criteria following sedation who go on to be discharged home should be discharged into the care of a suitable third party.
- Verbal and written instructions should be given.

Safe Sedation of Adults in the Emergency Department 2012 p3, p10, p11
Patients should be formally assessed for discharge suitability from the clinical area where sedation has taken place. Discharge criteria are as follows:
- The patient has returned to their baseline level of consciousness.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Vital signs are within normal limits for that patient.</td>
<td></td>
</tr>
<tr>
<td>• Respiratory status is not compromised.</td>
<td></td>
</tr>
<tr>
<td>• Pain and discomfort have been addressed.</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES

1 NCEPOD. Scoping our practice 2004


4 AoMRC. Safe sedation practice for healthcare procedures – standards and guidance 2013

5 RCoA and RCEM. Safe sedation of adults in the emergency department 2012


7 RCEM. Invasive procedure checklist for EDs 2016

8 ASA. Physical Status Classification System 2014


RCoA. Guidelines for the provision of anaesthesia: Chapter 20 – Sedation Services 2014