

## Section 1: Pre-operative care

Edited by Dr Graeme Hilditch

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## 1.1

## Patient information about anaesthesia

Dr L A White

## Why do this audit?

High quality information for patients is now a clear requirement. Written and verbal information should be provided. In 2001 the Department of Health stated that 'in elective treatment, it is not acceptable for the patient to receive no information about anaesthesia until their pre-operative visit from the anaesthetist; at such a late stage the patient will not be in a position genuinely to make a decision about whether to proceed...'<sup>1</sup>

Written information materials should be developed by anaesthetists and patients working together.<sup>2</sup> They should be clearly written in plain English, using and explaining technical words where necessary. They should be evidence based and up to date, and they should include information about side effects and complications. They should be well designed and be available in alternative formats – such as other languages, large print and materials for those with low literacy skills.

Auditors of patient information services must understand a fundamental issue. Patients vary in the amount of information that they want. Our duty is to provide information in an accessible form, but we cannot insist that all patients take up the information service provided. Audits must accommodate this fact.

On the one hand, more than ever before, there is money and support from managers, risk managers and politicians for the use of information materials of all kinds. On the other hand, there are new barriers for anaesthetists in their quest to inform patients fully about what to expect before, during and after their anaesthetic. Nurse-led pre-assessment clinics are increasingly replacing the pre-operative visit and patients may reach the day of surgery without having met their anaesthetist and having received no specific information about what is going to happen to them. They may have been assessed and 'labelled' as fit to proceed, but no one has actually explained what is going to happen, and why. Audits are needed to ensure that there is no erosion of the new trend of providing high quality information for patients who want it.

## Best practice: research evidence or authoritative opinion

Best practice in the provision of written information for patients expecting to have an anaesthetic is described in detail in the Royal College of Anaesthetists' book *Raising the Standard: Information for Patients*.<sup>2</sup> This was published in 2003 following a two-year project which included an extensive consultation process between patients and anaesthetists. The book also explains the importance of verbal information to follow up on the use of leaflets. Numerous references are given.

## Suggested indicators

Providing information for patients has a number of stages and any or all of these are open to audit. The stages are outlined below with suggested standards or targets.

**Stage 1:** ensure high quality and suitability of all written information leaflets for use.

- D % information leaflets to be used that have been evaluated via an approved process. A suitable evaluation tool can be found on the RCoA website. If the RCoA leaflet series is used, or some commercial leaflets, evaluation has already been done. Standard = 100%.
- D % patients in a sample of the proposed distribution group who agree that the information leaflet was helpful/comprehensive/clearly written etc. This would be a small and detailed audit with opportunity for feedback and changes to the proposed leaflet. Suggested target (when process completed and leaflet altered) > 90%.

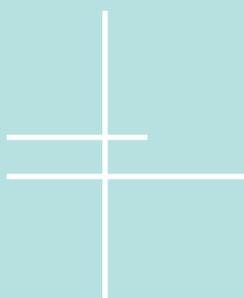
**Stage 2:** set up distribution of leaflets (who by, and when, in the patient pathway).

- D % patients who received the leaflet at the specified time in their care pathway. Target will depend on the circumstances.

**Stage 3:** assess whether the leaflet is effective.

- D % patients who are satisfied with the written information that they received. This will include some patients who are satisfied, but never read it. Suggested target > 90%.
- D % patients who can answer questions about material that the leaflet has covered. It may or may not be appropriate to conduct this kind of audit depending on the material covered. Target will depend on the circumstances.

	<p><b>Stage 4:</b> assess the quality of verbal information.</p> <p>D % patients who are satisfied with the information they received from their anaesthetist. Target = 90%.</p> <p>D % patients who are satisfied with information that they received about anaesthesia from other health professionals before they came to theatre. This might be:</p> <ul style="list-style-type: none"> <li>◆ pre-assessment nurses</li> <li>◆ surgical ward nurses</li> <li>◆ recovery nurses conducting a pre-operative visit</li> <li>◆ intensive care unit nurses conducting a pre-operative visit when post-operative intensive care is planned</li> <li>◆ acute pain service nurses talking about plans for post-operative pain control. Target = 90%.</li> </ul> <p>D % patients who are satisfied with information that they received from operating department staff on arrival in theatre, in the anaesthetic room, in theatre during the operation (if under local or regional anaesthetic) or in the recovery room. Target = 90%.</p>
<b>Proposed standard or target for best practice</b>	See above.
<b>Suggested data to be collected</b>	This will depend on which audit is planned.
<b>Common reasons for failure to meet standard</b>	<p>D Poor quality, not evaluated information materials.</p> <p>D Failure by staff to understand the principles of producing high quality information leaflets.</p> <p>D No funds to set up a robust distribution service.</p> <p>D Leaflet reaches patient at the wrong point in their care – too early or too late.</p> <p>D Leaflet not suitable for the patients who receive it.</p> <p>D Anaesthetist does not have enough (or any) time allocated for pre-operative visits.</p> <p>D Lack of knowledge in other staff about issues relating to anaesthesia.</p>
<b>Related audits</b>	9.1 – Pre-operative and parent patient information
<b>CPD and Curriculum mapping</b>	<p>CPD matrix code: <b>2A03</b></p> <p>Basic curriculum competences: HT_BK_01–04, HT_BS_01–08, CE_BS_01–04, CE_BK_01–05</p> <p>Intermediate curriculum competences: GU_IK_11, GU_IS_01</p>
<b>References</b>	<ol style="list-style-type: none"> <li>1 Department of Health. Reference guide to consent for examination or treatment (2nd edn). <i>DH</i>, London 2009 (<a href="http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_103643">http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_103643</a>).</li> <li>2 Raising the Standard: Information for patients. <i>RCOA</i>, London 2003 (<a href="http://www.rcoa.ac.uk/node/2136">http://www.rcoa.ac.uk/node/2136</a>).</li> </ol>



## 1.2

## Consent to anaesthesia and choice of technique

Dr E James

## Why do this audit?

It is important that patients are involved in discussion about their anaesthetic care in the pre-operative period to allow discussion about the relative risks and benefits of different techniques and also to obtain patient consent for the most appropriate technique for that individual. A satisfactory pre-operative visit also provides patient reassurance and reduces the likelihood of complaints related to lack of consent and poor patient understanding of risks of complications.

## Best practice: research evidence or authoritative opinion

It is the anaesthetist's responsibility to provide their patients with relevant and appropriate information to allow a collaborative approach to decisions about anaesthetic techniques and the obtaining of patient consent. The Association of Anaesthetists has produced guidance on obtaining consent for anaesthesia which gives a comprehensive overview of the issues involved.<sup>1</sup> A recent QIS review recommends that all patients are provided with easily understood information on anaesthesia and peri-operative care before admission to hospital.<sup>2</sup> There is some evidence for benefits of regional or local anaesthesia for specific surgical procedures. Local anaesthesia for cataract surgery is routine. There is no clear benefit of regional anaesthesia vs general anaesthesia in hip fracture surgery.<sup>3</sup> Epidural analgesia is of proven benefit for some patients, for example those with significant respiratory disease, but has shown less convincing benefit in other patient groups.<sup>4</sup>

## Suggested indicators

A specific procedure could be selected such as spinal or caudal block, insertion of invasive monitoring or thoracic epidural.

A number of aspects could be audited:

- D % of patients with whom discussion of risk and benefits of a particular technique is documented.
- D % of patients seen by anaesthetist carrying out the anaesthetic.
- D % of patients for whom appropriate regional block was considered and reasons for not carrying out the block or failure of effective block are documented.

Alternatively a more general audit of documentation of anaesthetic techniques and material risks discussed could be considered:

- D evidence of CPD related to consent (see CPD/curriculum mapping).
- D knowledge requirements of consent and discussion of risk related to regional anaesthesia in RCoA trainee syllabus (see CPD/curriculum mapping).

## Proposed standard or target for best practice

- D 100% of patients should have proposed anaesthetic techniques and associated risks explained and this should be documented on the anaesthetic record.
- D 100% of patients should have a discussion of risks, benefits and choice of anaesthetic technique with the anaesthetist performing the anaesthetic.
- D There should be a satisfactory outcome appropriate to the technique selected, e.g. block success and complication rates should be acceptable taking into account published rates, local factors and nationally accepted targets.

## Suggested data to be collected

- D Anaesthetist and procedure.
- D Was patient seen by anaesthetist pre-operatively?
- D Did this anaesthetist then anaesthetise the patient?
- D Was documentation of choice, risks and benefits of alternative techniques recorded satisfactorily?
- D Data on success rates, side effects and complications of the selected anaesthetic technique.

**Common reasons for failure to meet standard**

- D No pre-operative visit by an anaesthetist.
- D Patient visited by anaesthetist who did not carry out procedure.
- D Inadequate information disclosure during pre-operative visit.
- D Inadequate documentation of pre-operative information.
- D Procedure less successful than expected, e.g. lower success rate or higher incidence of side effects or complications.

**CPD/curriculum mapping**

CPD matrix code: IF01

Basic curriculum competences: OA\_BK\_01, OA\_BK\_11, OA\_BK\_12, OA\_135\_06

Intermediate curriculum competence: GU\_135\_06

**References**

- 1 Association of Anaesthetists of Great Britain and Ireland. Consent for anaesthesia 2. AAGBI, London 2006 (<http://www.aagbi.org/sites/default/files/consentto6.pdf>).
- 2 NHS Quality Improvement Scotland. Anaesthesia – National Overview Follow up Report. NHS QIS, Edinburgh 2010 ([http://www.healthcareimprovementscotland.org/previous\\_resources/performance\\_review/anaesthesia\\_follow-up\\_reports.aspx](http://www.healthcareimprovementscotland.org/previous_resources/performance_review/anaesthesia_follow-up_reports.aspx)).
- 3 SIGN Guideline 111: Management of hip fracture in older people. Scottish Intercollegiate Guidelines Network, June 2009 (<http://www.sign.ac.uk/guidelines/fulltext/111/index.html>).
- 4 Rigg JR et al. MASTER Anaesthesia trial study group. Epidural anaesthesia and analgesia and outcome of major surgery. A randomised trial. *Lancet* 2002;359: 1276–1282.



## 1.3

## Pre-operative assessment clinics

Dr G Hilditch

## Why do this audit?

The main reasons for having pre-admission clinics are:

- D to improve patient care by careful pre-operative evaluation of the patient with co-existing disease<sup>1,2,3</sup>
- D to improve theatre utilisation<sup>1,2,3</sup>
- D to reduce bed occupancy<sup>1,2,3</sup>
- D to decrease the incidences of inadequate communication and administration errors.<sup>1,2,3</sup>

With proper use of pre-admission clinics, there is adequate time to ensure the patient's condition has been optimised to reduce the risk of peri-operative morbidity and mortality and reduce the likelihood that surgery will be cancelled at the time of admission.

Patients can be admitted on the day of surgery reducing the length of stay and enhancing bed occupancy.

## Best practice: research evidence or authoritative opinion

Screening and pre-operative assessment is usually carried out by a specially trained multi-disciplinary team with access to a consultant anaesthetist. Appropriately trained nurses can use locally developed protocols to screen and assess patient's fitness for surgery<sup>4</sup> and thereby minimise late cancellations of operations. Occasionally, surgery will be postponed on the day of surgery by an anaesthetist. This should be reported to the POA lead clinician if protocols have not been followed or are inefficient.<sup>5</sup> The importance of adequate pre-operative assessment is referred to in the RCoA CPD matrix and 2010 curriculum (see CPD/curriculum mapping).

## Suggested indicators

For patients who **attended** the pre-admission clinic:

- D Of those who had their operation postponed by the clinic, % correctly postponed in the opinion of the auditor:
- D Of those who did not have their operation postponed, % who subsequently had their operation postponed due to a problem that could have been noted at the pre-admission clinic, in the opinion of the auditor:
- D Of those who were referred to another specialist for further optimisation, % correctly referred in the opinion of the auditor:

For patients who **did not attend** the pre-admission clinic:

- D % who subsequently had their operation postponed as a result of a factor that could have been noted at the pre-admission clinic, in the opinion of the auditor:

If a surgical service is setting up a pre-admission clinic for the first time:

- D % patients cancelled due to problems that could have been noted by a pre-admission clinic may be compared before and after establishing the clinic.

## Proposed standard or target for best practice

The ideal standards are that:

- D 100% postponements by the clinic should be appropriate
- D 0% further postponements should occur in attendees as above
- D 100% of referrals should be appropriate
- D 0% postponements should occur in those not referred as above.

If a service is being set up there should be a significant fall in the number of cancellations due to problems that the clinic could have picked up.

It is not possible at this stage to propose targets, given the relative paucity of the literature.

**Suggested data to be collected**

The following data should be collected.

- D The number of patients attending the clinic.
- D The reasons for postponement.
- D The reasons for referring to a specialist for further optimisation.

**Common reasons for failure to meet standard**

- D Inadequate training of nurses staffing the clinic.
- D Factors that nurses are not trained to recognise, e.g. heart murmurs, difficult airway.
- D Factors not included in standard pre-admission clinic guidelines.
- D Failure to review the results of investigations performed by the clinic.

**CPD and Curriculum mapping**

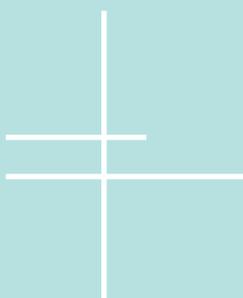
CPD matrix code: **2A03**

Basic curriculum competences: **HT\_BK\_01–4, HT\_BS\_01-08, CE\_BS\_01–4, CE\_BK\_01–5**

Intermediate curriculum competences: **GU\_IK\_11, GU\_IS\_01**

**References**

- 1 Conway JB, Goldberg J, Chung F. Preadmission anaesthesia consultation clinic. *Can J Anaesth* 1992;**39**:1051–1057.
- 2 Koay CB, Marks NJ. A nurse-led preadmission clinic for elective ENT surgery: the first 8 months. *Annals Roy Coll Surg Engl* 1996;**78**:15–19.
- 3 Rushforth H et al. Nurse-led paediatric assessment: an equivalence study. *Paediatr Nurs* 2006;**18**:23–29.
- 4 Kinley H et al. Extended scope of nursing practice: a multicentre randomised controlled trial of appropriately trained nurses and pre-registration house officers in pre-operative assessment in elective general surgery. *Health Technol Assess* 2001;**5(20)**:1–87.
- 5 Pre-operative assessment and patient preparation: The role of the anaesthetist 2. *AAGBI*, London 2010 (<http://www.aagbi.org/sites/default/files/preop2010.pdf>).



## 1.4 Premedication and management of chronic medication

Dr J Crawford

### Why do this audit?

**Chronic medication:** Continuation of long-term drug treatment before and after surgery may be required to prevent destabilisation of chronic conditions. Peri-operative discontinuation of some drugs may lead to withdrawal syndromes.<sup>1</sup> The rate of non-surgical complications increases with the length of time patients are without their regular medicines.<sup>2</sup> Increased risk of MI and death are associated with peri-operative withdrawal of beta-blockers.<sup>3</sup> Continuation of certain other drugs peri-operatively may lead to unwanted side effects that support their discontinuation, or the use of specific management plans (e.g. for warfarin, antiplatelet drugs, diabetic drugs).<sup>4</sup> Patients will often be given advice at pre-operative clinics without being seen by an anaesthetist. Drugs that are deliberately withheld pre-operatively must be reintroduced safely.

**Premedication:** Premedication may have beneficial effects on patient anxiety, nausea/vomiting, quality of anaesthetic induction and risks of aspiration. Same-day admission arrangements reduce the opportunities to prescribe premedication in a timely fashion. Admission facilities may preclude the administration of pre-operative sedatives.

### Best practice: research evidence or authoritative opinion

**Chronic medication:** The anaesthetist should receive a written record of a patient's current medication<sup>5</sup> and be alerted to any significant drugs prescribed on a regular basis. There must be local guidelines that define the management of chronic medication pre- and post-operatively – including while 'Nil by mouth'. This guidance must include advice on the management of cardiac drugs, diabetes drugs, drugs of dependence, antiplatelet drugs/warfarin and non-prescription drugs.

**Premedication:** Sedative premedication should not be the mainstay of achieving pre-operative anxiolysis in adults. However, sedative premedication should be prescribed, and be correctly administered, when their effects are required. Routine use of drugs suppressing gastric acid is not justified in low risk cases<sup>6</sup> but mechanisms should exist to allow timely administration in patients at higher risk of aspiration e.g. using Patient Group Directions<sup>7</sup> (PGD) at pre-operative clinics.

### Suggested indicators

#### Chronic medication:

- D Presence/absence of guidelines as above.
- D % of cases in which the anaesthetist obtains a timely and accurate written record of patients' medications.
- D % adherence to guidelines and specific management plans.

#### Premedication:

- D % patients in whom PGD was applied correctly/incorrectly.
- D % patients for whom anaesthetist had the opportunity to order a premed when deemed necessary.
- D % patients in whom premed was given/taken correctly at an appropriate time relative to induction of anaesthesia.

### Proposed standard or target for best practice

#### Chronic medication:

- D Presence of chronic medication guidelines as above.
- D 100% elective cases the anaesthetist should receive a timely and accurate written record of patients' medications.
- D 100% adherence to guidelines or documented deviation.

#### Premedication:

- D 100% patients receiving drug from PGD appropriately.
- D 0% patients receiving drug from PGD inappropriately.
- D 100% of cases the anaesthetist to have opportunity to order sedative premed in cases of significant patient anxiety not alleviated by non-pharmacological means.

**Suggested data to be collected****Chronic medication:**

- D Presence/absence of guidelines as above.
- D Rates of adherence to this guidance (pre- and post-operatively)
- D Reasons for failure to follow guidelines should be gathered to inform future practice (e.g. from the 'not-administered' codes on drug prescription sheets).

**Premedication:**

- D Did anaesthetist have opportunity to prescribe premedication.
- D If premed prescribed, whether given at correct time relative to induction.
- D Missed opportunities to use PGD. Inappropriate drug provision via PGD.

**Common reasons for failure to meet standard****Chronic medication:**

- D Lack of local guidelines – or inadequate content.
- D Failure to integrate these guidelines with fasting policies.
- D Failure to involve all relevant health care groups (e.g. GPs, pre-operative assessment, post-operative ward, pharmacy).
- D Variance in practice because of lack of evidence (e.g. ACE inhibitors).

**Premedication:**

- D Lack of PGD enabling supply of drugs by nurses.
- D Patients admitted after lists have started.
- D Change in list order or time.
- D Same day admission facilities unable to accommodate patients requiring sedative premedication.

**Related audits**

- 1.7 – Pre-operative fasting in adults  
9.3 – Premedication in pre-school age children

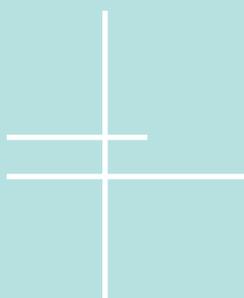
**CPD and Curriculum mapping**

CPD matrix codes: **1A02, 2A03**

Basic curriculum competences: **OA\_BK\_08, OA\_BS\_01, OA\_BS\_06, PD\_BK\_01–08, PD\_BS\_01–03**

**References**

- 1 Karachalios GN et al. Withdrawal syndrome following cessation of antihypertensive drug therapy. *Int J Clin Pract* 2005;**59**(5):562–570.
- 2 Kennedy JM et al. Polypharmacy in a general surgery unit and consequences of drug withdrawal. *Br J Clin Pharmacol* 2000;**49**(4):353–362.
- 3 Hoeks SE et al. Increase of 1 year mortality after perioperative beta-blocker withdrawal in endovascular and vascular surgery patients. *Eur J Vasc Endovasc Surg* 2007;**33**:13–19.
- 4 Anonymous. Drugs in the peri-operative period: 1 – stopping or continuing drugs around surgery. *Drugs Therapeut Bull* 1999;**37**(8):62–64.
- 5 NHS Quality Improvement Scotland. Anaesthesia – Care before, during and after anaesthesia. *NHSQIS*, Edinburgh July 2003 ([http://www.healthcareimprovementscotland.org/previous\\_resources/standards/anaesthesia.aspx](http://www.healthcareimprovementscotland.org/previous_resources/standards/anaesthesia.aspx)).
- 6 ASA. Practice guidelines for preoperative fasting and the use of pharmacological agents to reduce the risk of pulmonary aspiration. *Anesthesiology* 2011;**114**:495–511.
- 7 Patient Group Directions (<http://www.nelm.nhs.uk/en/Communities/NeLM/PGDs>).



## 1.5

## The pre-operative visit

Dr L A White

## Why do this audit?

This audit refers to the visit that should take place after admission to hospital. The opportunity for a satisfactory pre-operative visit is being limited by several modern practices:

1) the need to treat more patients in less time; 2) the practice of admission on the day of surgery; 3) the reduction in pre-operative wait times by admitting patients at times staggered through the day; 4) the effect of budget constraints and the European working time directive which reduces 'doubling up' when two anaesthetists work together on a list.

Operating sessions must be planned to allow time for these essential visits to take place and an audit can show whether this is the case.

## Best practice: research evidence or authoritative opinion

Patients for elective and most emergency surgery must be seen by an anaesthetist after admission to hospital and before they arrive in the anaesthetic room.<sup>1</sup> This includes patients who have attended a pre-assessment clinic before admission, even if they have seen an anaesthetist at that clinic. The reasons for this are as follows:

- D **Anaesthetist responsibility and patient safety:** The anaesthetic is the responsibility of the individual anaesthetist who gives it<sup>2</sup> and they must be given an opportunity to consider the relevant aspects of the case in an environment when it would be reasonable to alter the management of the case; they must ensure that all issues relevant to the safe conduct of anaesthesia have been addressed; they are responsible for ensuring that the patient understands the procedure and any significant risks. There may be some circumstances, particularly in emergency surgery, when the pre-operative visit is carried out by another anaesthetist. A robust clinical handover is required to maintain patient safety, and this must be regarded as 'second best'.
- D **Patient information:** Patients should have received information about anaesthesia and pain relief at the pre-assessment clinic. However many patients arrive with further questions which should be addressed before informed consent is complete.<sup>3</sup> The final choice of technique is often still to be decided, hence discussions about the plan for anaesthesia and consent can only be completed on the day of surgery, by discussion between the anaesthetist giving the anaesthetic and the patient.<sup>4,5</sup>
- D **Patient experience:** Patients generally appreciate an opportunity to meet their own anaesthetist before they enter the theatre suite which helps to reduce anxiety and uncertainty.

## Suggested indicators

## Visit happening/not happening

- D % elective operations when the patient was seen by an anaesthetist after admission to hospital and before entering the anaesthetic room. Standard = 100%.
- D % elective operations when the patient was seen by their own anaesthetist after admission to hospital. Target = 100%.
- D % emergency operations when the patient was seen by an anaesthetist after admission to hospital, having excluded patients admitted as an extreme emergency, for example collapsed aortic aneurysm repair. Standard = 100%.
- D % emergency operations when the patient was seen by an anaesthetist who subsequently gave the anaesthetic. Target 75%, but where not achieved 100% evidence of robust clinical handover.

## Quality of the pre-operative visit (for elective cases)

This data would be best collected using a visual analogue scale without thresholds, marked at each end 'very satisfied' and 'very dissatisfied'.

- D % visits where the patient agrees that conditions were satisfactory for a full conversation:
  - ◆ anaesthetist put patient at ease and gained their trust
  - ◆ patient felt able to ask all questions that he/she had in mind
  - ◆ anaesthetist answered all questions to patient's satisfaction
  - ◆ anaesthetist gave adequate time and did not appear in a rush
  - ◆ venue had suitable privacy.

	<p>D % visits when the anaesthetist agrees that conditions were satisfactory for a full conversation. Elements to be considered are:</p> <ul style="list-style-type: none"> <li>◆ venue</li> <li>◆ amount of time spent</li> <li>◆ arrangements for theatre list to continue or be completed.</li> </ul>
<p><b>Proposed standard or target for best practice</b></p>	<p><b>Visit happening/not happening</b></p> <p>Suggested standards and targets given above.</p> <p><b>Quality of the pre-operative visit</b></p> <p>A minimum target that the average visual analogue score should exceed 50% of the distance along the line. If this target is achieved, the aim should be to improve.</p> <p>Any scores of less than 30% of the distance along the line are a cause for concern. In this case reference should be made to the free text sections to find the cause of dissatisfaction.</p>
<p><b>Suggested data to be collected</b></p>	<p><b>Visits happen/do not happen</b></p> <ul style="list-style-type: none"> <li>D Who performs the visit.</li> <li>D If this anaesthetist not present at induction – method and quality of clinical handover (i.e. verbal, written, both) and anaesthetist satisfaction with that when they meet the patient in the anaesthetic room.</li> <li>D Whether the pre-operative visit revealed an aspect of care that needed to be sorted out before coming to theatre.</li> <li>D If case is cancelled or delayed at the pre-operative visit, the reasons for this and consideration of whether pre-assessment processes were deficient and should be adjusted.</li> </ul> <p><b>Quality of the visit</b></p> <ul style="list-style-type: none"> <li>D Ensure free text section allows cause of dissatisfaction to be made clear by both parties.</li> </ul>
<p><b>Common reasons for failure to meet standard</b></p>	<ul style="list-style-type: none"> <li>D Lack of space for day of surgery admission compared to the number of patients.</li> <li>D Lack of privacy in arrangements for pre-operative visit.</li> <li>D Lack of time within the theatre list.</li> </ul>
<p><b>CPD and Curriculum mapping</b></p>	<p>CPD matrix codes: <b>2A03</b></p> <p>Basic curriculum competences: <b>HT_BK_01–04, HT_BS_01–08, CE_BS_01–04, CE_BK_01–05</b></p> <p>Intermediate curriculum competence: <b>GU_IK_11</b></p>
<p><b>References</b></p>	<ol style="list-style-type: none"> <li>1 Pre-operative assessment and patient preparation: the role of the anaesthetist 2. <i>AAGBI</i>, London 2010 (<a href="http://www.aagbi.org/sites/default/files/preop2010.pdf">http://www.aagbi.org/sites/default/files/preop2010.pdf</a>).</li> <li>2 Department of Health. Reference guide to consent for examination or treatment (2nd edn). <i>DH</i>, London 2009 (<a href="http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_103643">http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_103643</a>).</li> <li>3 Greenberg CC et al. Patterns of communication breakdowns resulting in injury to surgical patients. <i>J Am Coll Surg</i> 2007;<b>204</b>:533–540.</li> <li>4 Ausset S et al. Improvement of information gained from the pre-anaesthetic visit through a quality assurance programme. <i>Br J Anaesth</i> 2002;<b>88</b>:280–284.</li> <li>5 Lonsdale M, Hutchinson GL. Patients' desire for information about anaesthesia. <i>Anaesthesia</i> 1991;<b>46</b>:410–413.</li> </ol>

## 1.6

## Pre-operative airway assessment

Dr B McGuire

**Why do this audit?**

Difficulty or failure in airway management is a significant factor in much anaesthesia-related morbidity and mortality.<sup>1,2</sup> NAP4 summarised that poor airway assessment contributed to poor airway outcomes.<sup>3</sup>

A *difficult airway* exists when an anaesthetist has problems with mask ventilation, intubation or both. Depending on definition and study design (prospective/retrospective; inclusion criteria etc), the incidence of difficult mask ventilation may be around 5%<sup>4</sup> and the incidence of difficult intubation (using direct laryngoscopy) around 4%.<sup>5</sup> Fortunately, the incidences of unsuccessful intubation and a 'can't intubate, can't ventilate' (CICV) scenario are considerably lower.

**Best practice: research evidence or authoritative opinion**

The Royal College of Anaesthetists' guidelines for the provision of anaesthetic services<sup>6</sup> specifically refer to the importance of airway assessment. It is also referred to in the College CPD matrix and new curriculum (it is a core clinical learning outcome in basic training – see CPD/curriculum mapping).

The WHO surgical safety checklist<sup>7</sup> includes prediction of a difficult airway in its pre-operative section. Furthermore, the NAP4 Executive Summary<sup>3</sup> states as a recommendation that: 'All patients should have an airway assessment performed and recorded before anaesthesia. This involves bedside interactive tests.'

However, we know that these tests have a relatively low positive predictive value, even in combination.<sup>8</sup> Best practice is likely to involve a combination of history, examination and investigation. Independent predictors of difficult mask ventilation in one study were age > 55 years, BMI > 26 kg/m<sup>2</sup>, lack of dentition, a beard, and a history of snoring.<sup>4</sup> Limitation of mandibular protrusion appears to be another factor.<sup>9</sup>

Independent predictors of difficult intubation in one study were previous difficult intubation, the presence of airway pathology and symptoms, inter-incisor gap, thyromental distance, Mallampati score and the maximum range of atlanto-occipital movement.<sup>10</sup>

**Suggested indicators**

- D % patients seen by anaesthetist who then gives the anaesthetic.
- D % patients in whom airway was assessed at pre-operative visit.
- D % patients with adequate documentation of airway assessment.
- D % patients with difficulty in ventilation.
- D % patients with difficult intubation.
- D % patients with failed intubation.
- D % patients with CICV scenario.

**Proposed standard or target for best practice**

- D 100% patients seen by anaesthetist who then gives the anaesthetic.
- D 100% patients having pre-operative airway assessment.
- D 100% patients with documentation of airway assessment.
- D In-patients with an unpredicted difficult airway (either difficulty not anticipated or airway not assessed):
  - ◆ < 5% patients with difficulty in mask ventilation
  - ◆ < 5% patients with difficult intubation
  - ◆ < 0.1% of patients with failed intubation
  - ◆ < 0.01% of patients with CICV scenario.

**Suggested data to be collected**

Prospective data should include:

- D age, BMI, a history of snoring or obstructive sleep apnoea; edentulous; presence of a beard; extent of mandibular protrusion
- D history of previous difficult intubation, airway pathology and symptoms; measurement of inter-incisor gap, thyromental distance, maximum range of atlanto-occipital movement and Mallampati score
- D number of patients predicted to have difficult ventilation or intubation
- D number of patients with actual difficult ventilation or intubation
- D number of patients with failed airway management
- D morbidity and mortality.

**Common reasons for failure to meet standard**

- D No or inadequate pre-operative airway assessment.
- D Different anaesthetist performs assessment.
- D Inadequate documentation of assessment.
- D Pre-operative tests fail to predict difficulty or lack of it.
- D Airway management strategy does not reflect assessment.

**Related audits**

- 8.11 – Airway and intubation problems during general anaesthesia for caesarean section
- 14.7 – Airway management training for novice anaesthetists

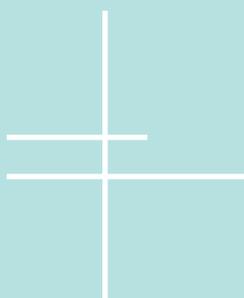
**CPD and Curriculum mapping**

CPD matrix codes: **IB02, IC01**

Basic curriculum competence: **OA\_BK\_05**

**References**

- 1 Gannon K. Mortality associated with anaesthesia. A case review study. *Anaesthesia* 1991;**46**:962–966.
- 2 Domino KB et al. Airway injury during anaesthesia: a closed claims analysis. *Anesthesiology* 1999;**91**:1703–1711.
- 3 NAP4: Major complications of airway management in the UK. Report and findings of the 4th National Audit Project of The Royal College of Anaesthetists. *RCoA*, London March 2011 (<http://www.rcoa.ac.uk/nap4>).
- 4 Langeron O et al. Prediction of difficult mask ventilation. *Anesthesiology* 2000;**92**:1229–1236.
- 5 Williamson JA et al. The Australian Incident Monitoring Study. Difficult intubation: an analysis of 2000 incident reports. *Anaesth Intens Care* 1993;**21**:602–607.
- 6 Guidance on the provision of anaesthetic services for pre-operative care. *RCoA*, London 2009 (<http://www.rcoa.ac.uk/node/708>).
- 7 National Patient Safety Agency (NPSA) and National Reporting and Learning System (NRLS) Surgical Safety Checklist (<http://www.nrls.npsa.nhs.uk/resources/clinical-specialty/surgery/?entryid45=59860>).
- 8 Yentis SM. Predicting difficult intubation – worthwhile exercise or pointless ritual. *Anaesthesia* 2002;**57**:105–109.
- 9 Kheterpal S et al. Incidence and predictors of difficult and impossible mask ventilation. *Anesthesiology* 2006;**105**:885–891.
- 10 Arne J et al. Preoperative assessment for difficult intubation in general and ENT surgery: predictive value of a clinical multivariate risk index. *Br J Anaesth* 1998;**80**:140–146.



## 1.7

## Pre-operative fasting in adults

Dr A Smith

**Why do this audit?**

Patients have traditionally been denied food and drink for six hours before the induction of general anaesthesia, though where this figure originated is not clear. This is likely to reduce the incidence of pulmonary aspiration of gastric contents. For fluids, much attention has been paid to reducing fasting times in children, who become dehydrated and hypoglycaemic more readily, but fluid deprivation is unpleasant for adults too. Shortening the fluid fast may also lead to less anxiety pre-operatively<sup>1</sup> and less nausea and vomiting post-operatively.<sup>2</sup> The pre-operative preparation of patients, including fasting, is integral to the RCoA CPD matrix and the 2010 curriculum (see CPD/curriculum mapping).

**Best practice: research evidence or authoritative opinion**

Clear fluids are cleared rapidly from the normal stomach. A Cochrane review of randomized controlled trials has assessed fasting before surgery.<sup>3</sup> There was no evidence of difference in volume or pH of gastric contents when a shortened fluid fast was compared with a standard fast. Gastric volumes were nearly identical. Also, opinion has moved away from simply specifying 'safe' periods of fluid fasting to actively encouraging patients to drink. Patients should therefore be encouraged to drink clear fluids up until 2 hours before elective surgery. This applies to people with obesity, gastro-oesophageal reflux and diabetes mellitus but does not include emergency cases.<sup>4</sup>

In addition, operations should not be delayed or postponed if patients are found to be chewing gum or sucking a boiled sweet immediately before the induction of anaesthesia.<sup>4</sup>

**Suggested indicators**

D % of eligible patients who are permitted to drink in accordance with guidelines.

**Proposed standard or target for best practice**

D 100% healthy elective adult patients should be allowed to drink water or other clear fluids until 2 hours before the induction of anaesthesia.

**Suggested data to be collected**

- D Fluid fasting times.
- D Number of patients to whom fluid was given inappropriately.
- D Number of patients denied fluid when it is indicated by the above guidance.
- D Incidence and nature of organisational problems caused by new policy.

**Common reasons for failure to meet standard**

- D Nurses and patients not aware of policy.
- D Difficulties 'tailoring' fasting times to individual patients rather than all patients on an operating list.
- D Cancellation by those not aware of, or disagreeing with, policy.

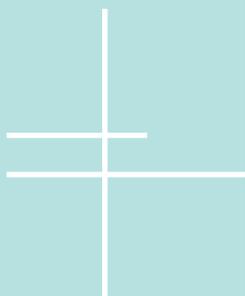
**Related audits**

9.2 – Pre-operative fasting in elective paediatric surgery

**CPD and Curriculum mapping**

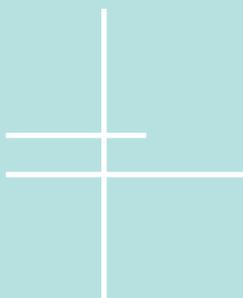
CPD matrix code: **2A03**

Basic curriculum competence: **OA\_BK\_04**



## References

- 1 Read MS, Vaughan RS. Allowing pre-operative patients to drink: effects on patients' safety and comfort of unlimited oral water until 2 hours before anaesthesia. *Acta Anaesthesiol Scand* 1991;**35**:591–595.
- 2 Smith AF, Vallance H, Slater RM. Shorter preoperative fluid fasts reduce postoperative emesis. *Br Med J* 1997;**314**:1486.
- 3 Brady M, Kinn S, Stuart P. Preoperative fasting for adults to prevent perioperative complications. *Cochrane Database of Systematic Reviews* 2003, Issue 4. Art No: CD004423.
- 4 Smith I et al. Perioperative Fasting in Adults and Children: Guidelines from the European Society of Anaesthesiology. *Euro J Anaesthesiol* 2011;**28(8)**:556–569.



## 1.8

## Thromboprophylaxis

Dr M Cheesman, Dr H McKay, Dr K James

**Why do this audit?**

Venous thromboembolism (VTE) is a significant cause of mortality, long-term disability and chronic ill-health. In 2005, the House of Commons Health Committee reported that approximately 25,000 patients die each year from preventable hospital acquired VTE.<sup>1</sup> VTE is considered internationally to be a silent killer with fewer than 1 in 10 fatal cases of pulmonary embolism diagnosed before death.<sup>2</sup>

The cost of treating non-fatal symptomatic VTE and associated long-term disability is around £640 million per year.<sup>1</sup>

It is clear from such figures that efforts should be focused on prevention<sup>1,2,3,4,5,6,7</sup> and VTE has been recognised as a clinical priority for the NHS by the National Quality Board and the NHS Leadership Team. Consequently, VTE was one of two National Commissioning for Quality and Innovation (CQUIN) topics in 2010–2011. The focus has moved on from the introduction of VTE risk assessment in 2010–2011, to that of appropriate prophylaxis during 2011–2012.

**Best practice: research evidence or authoritative opinion**

In the UK the DoH, the National Institute of Clinical Excellence (NICE) and the Scottish Intercollegiate Guidelines Network (SIGN) and have stated that risk assessment and preventative measures for VTE are major patient safety interventions that must be made to save lives.<sup>1,2,3,4</sup> These guidance documents have been used as the standard against which assessment of medical and surgical patients, risk stratification and consequent prophylaxis should be based.

Government policy states that every adult patient should undergo an individual risk assessment for VTE on admission to hospital and this should be a systematic and auditable process.<sup>5</sup> Routine screening for asymptomatic deep vein thrombosis in all patients is not cost-effective.<sup>4</sup> NICE recommends that pregnant and postnatal women should have a separate risk assessment based on The Royal College of Obstetricians and Gynaecologists' guidelines.<sup>8</sup>

**Suggested indicators**

- D Patients should be assessed for their risk of both VTE and bleeding within 24 hours of admission.
- D Patients should have appropriate prophylaxis prescribed according to national guidelines.
- D All available methods of prophylaxis should be considered – general measures (mobilisation, hydration), mechanical techniques and pharmacological agents.

**Proposed standard or target for best practice**

- D 100% of patients should be assessed for their risk of both VTE and bleeding within 24 hours of admission and the assessment outcomes documented (including day cases).
- D 100% of patients should have appropriate prophylaxis prescribed according to national guidelines (excluding local exceptions).
- D 100% of patients should receive their prescribed prophylaxis (unless patient refuses or it is contraindicated).
- D 100% of patients (or carers) receive written guidance and verbal information on VTE.
- D 100% of staff receive CPD/training in relation to VTE.
- D Pharmacological VTE prophylaxis must be tailored appropriately, pre- and post-surgery, in relation to central neuraxial block.

**Suggested data to be collected**

- D Did the patient have a VTE assessment documented within 24 hours of admission?
- D To which risk category was the patient assigned?
- D Which medication/treatment was prescribed on admission/following assessment?
- D Is the risk assessment outcome in line with national guidance?
- D Did the patient receive the prescribed treatments?
- D Was appropriate discharge VTE prophylaxis prescribed?
- D Are VTE guidelines easily accessible in clinical areas?
- D Evidence of continuing professional development (CPD) relating to VTE prevention.
- D Re-assessment documented at 24 hours after admission and after any major clinical change.

### Common reasons for failure to meet standard

- D Lack of education/understanding amongst medical and nursing workforce.
- D Assessment not carried out in timely fashion.
- D Assessment inaccurate.
- D Uncertainty regarding responsibility for assessment of risk (and re-assessment) and prescription of prophylaxis.
- D Assessment not acted upon by medical staff.
- D Failure to apply guidelines.
- D Inappropriate medication/treatment being prescribed.
- D Prescription not administered to patient.
- D Lack of agreement among surgical specialties on management plans.

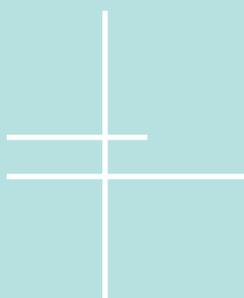
### CPD and Curriculum mapping

CPD matrix code: **IE05**

Training curriculum competences: **OA\_BK\_9, IG\_BK\_03, PR\_IK\_09**

### References

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- 2 Venous Thromboembolism Prevention: A Patient Safety Priority, Department of Health, June 2009 ([http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_101398](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_101398)).
- 3 National Institute for Health and Clinical Excellence (2010). Venous thromboembolism: reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital (<http://www.nice.org.uk/guidance/CG92>).
- 4 SIGN Guideline 122. Prevention and Management of Venous Thromboembolism. *Scottish Intercollegiate Guidelines Network*, December 2010 (<http://www.sign.ac.uk/pdf/sign122.pdf>).
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- 7 Venous thromboembolism. Costing report implementing NICE guidance. *NICE* 2007 (<http://www.nice.org.uk/nicemedia/live/12695/47234/47234.pdf>).
- 8 Reducing the risk of thrombosis and embolism during pregnancy and the puerperium. Green top guideline No 37a. *RCOG*, London 2009 (<http://www.rcog.org.uk/files/rcog-corp/CTG37aReducingRiskThrombosis.pdf>).



## 1.9

## Pre-operative cross-matching of blood

Dr B J McCreath

**Why do this audit?**

Cross-matching of blood that is not transfused consumes blood bank resources unnecessarily, increases the blood inventory that must be maintained, and increases the number of units that become outdated. Occasionally, e.g. if a procedure is associated with a risk of sudden massive blood loss, this may be a deliberate policy. More commonly, however, the decision to cross-match blood is based on traditional practice that may be outdated. The importance of appropriate cross-matching blood and strategies to manage blood loss are referred to in the RCoA CPD matrix and the 2010 curriculum (see CPD/curriculum mapping). This audit will identify those operations for which blood is needlessly cross-matched.

**Best practice: research evidence or authoritative opinion**

The Maximum Surgical Blood Order Schedule (MSBOS) recommends that, for patients with a high likelihood of blood transfusion, the number of units cross-matched be twice the median requirement for that surgical procedure (cross-match-to-transfusion [C:T] ratio of 2:1).<sup>1</sup>

It has been suggested that, once the MSBOS has been considered, the introduction of a Patient-Specific Blood Ordering System (PSBOS) that predicts a post-operative haemoglobin (PHb) using the patient's estimated blood volume (EBV: 70ml/kg for man; 80ml/kg for woman), the surgeon-defined anticipated blood loss (BL), and starting haemoglobin (SHb),<sup>2</sup> may be an additional tool in predicting patients that are at risk of receiving blood transfusions during surgery.

**Suggested indicators**

- D The C:T ratio for a specific operation.
- D The number of urgent requests for cross-matched blood made during elective surgery that, in the opinion of the auditor, could have been predicted.

**Proposed standard or target for best practice**

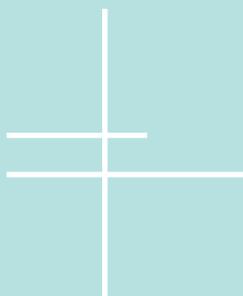
- D The C:T ratio for elective surgery should be no more than 2:1. If greater than this then the procedure should carry a risk of life-threatening haemorrhage.
- D There should be no requirement for emergency cross-matching techniques during elective surgery.

**Suggested data to be collected**

- D For a specific operation, collect the following data for each patient: weight and sex, operation details including grade of surgeon and any problems, anticipated blood loss, starting and post-operative haemoglobin concentration (Hb), transfusion trigger (Hb), C:T ratio, and discharge Hb.
- D Estimate the PHb using the equation  $PHb = SHb \times (EBV - \text{anticipated BL}/EBV)$ .
- D When an urgent request for cross-matched blood has been made during elective surgery, the circumstances surrounding the request should be considered. Could the need for blood have been predicted? Would a PSBOS have been helpful?

**Common reasons for failure to meet standard**

- D Inability of ward-based medical staff to estimate likely blood loss.
- D Inappropriate transfusion policy based on a needlessly high transfusion trigger.
- D Reluctance of a surgeon to begin surgery without blood immediately available when the anticipated blood loss is greater than 1 litre.
- D Inability of a transfusion laboratory to provide a rapid response to urgent requests for cross-matched blood.
- D Resistance to the changing of traditional practice.



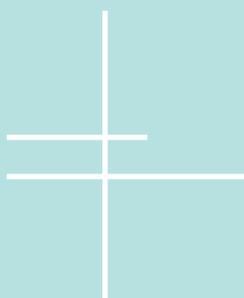
## CPD and Curriculum mapping

CPD matrix codes: **2A03, 2A05**

Intermediate Training Curriculum Competence: **GU\_IS\_03, OR\_IK\_04**

## References

- 1 Friedman BA et al. The maximum surgical blood order schedule and surgical blood use in the United States. *Transfusion* 1976;**16**:380–387.
- 2 Palmer T et al. Reducing unnecessary cross-matching: a patient-specific blood ordering system is more accurate in predicting who will receive a blood transfusion than the maximum blood ordering system. *Anesth Analg* 2003;**96**(2):369–375.



## 1.10

## Protocols for pre-operative investigation

Dr P Doherty

**Why do this audit?**

The main purpose of pre-operative investigation is to provide additional diagnostic and prognostic information to supplement the clinical history of a patient. The National Institute for Health and Clinical Excellence has issued guidance on when to use routine pre-operative testing in elective surgery.<sup>1</sup> Assessment prior to anaesthesia is the responsibility of the anaesthetist<sup>2</sup> and local protocols for pre-operative investigations should be designed and implemented by departments of anaesthesia.<sup>3</sup> Measurement of compliance to protocol is essential to reduce harm in peri-operative care.<sup>4</sup> The importance of pre-operative investigation is considered in the RCoA CPD matrix and the 2010 curriculum (see CPD/curriculum mapping).

**Best practice: research evidence or authoritative opinion**

NICE Guidelines give recommendations on which investigations to perform depending on operation and co-morbidity. These recommendations are currently under review with an updated version due to be published in 2012. Implementation of these guidelines should be audited and reviewed regularly.

Local protocols should be available to all staff involved in the peri-operative care of the patient.

**Suggested indicators**

- D % patients who are tested in compliance with the guidelines or local protocol.
- D % investigations carried out that were not included within the protocol.
- D Cost-effectiveness of current protocols.
- D % cases delayed or postponed because necessary investigations were not available.
- D % of cases in which additional investigations were requested over local protocol.
- D % results available in notes pre-operatively.
- D % of abnormal results highlighted in anaesthetic records pre-operatively.

**Proposed standard or target for best practice**

- D Adherence to local protocols for pre-operative assessment.
- D All investigations suggested in the protocol performed.
- D Written reasons for variance from local protocol.
- D All investigations available and documented prior to theatre.
- D Any abnormal results identified and highlighted by anaesthetist pre-operatively.
- D No cases should be delayed or postponed due to absence of a pre-operative investigation.

**Suggested data to be collected**

- D The total number and percentage of investigations omitted or results unavailable in the notes. The effect of this on theatre time stratified by each theatre list, surgical ward and specific investigation.
- D The impact on theatre time and effect on cost of these omissions.
- D The number and effect on cost of unnecessary pre-operative investigations performed.

**Common reasons for failure to meet standard**

- D Protocol not widely available, and not publicised.
- D Lack of understanding among staff involved in pre-admission process.
- D Delay in processing or availability of investigations.
- D Late admission of patient.
- D Urgent theatre cases.

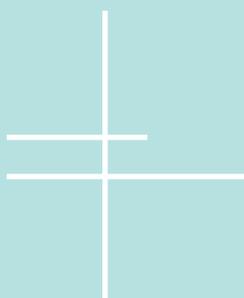
## CPD and Curriculum mapping

CPD matrix code: **2A03**

Basic Training Curriculum Competence: **OA\_BS\_04–5**

## References

- 1 NICE Clinical Guidelines 3: Preoperative Tests – The use of routine preoperative tests for surgery. NICE, London June 2003 (<http://www.nice.org.uk/page.aspx?o=56818>).
- 2 Guidance on the provision of anaesthetic services for pre-operative care. RCoA, London 2009 (<http://www.rcoa.ac.uk/node/708>).
- 3 Risk management. AAGBI, London 1998 (<http://www.aagbi.org/pdf/27doc.pdf>).
- 4 Patient Safety First: The How To Guide for reducing harm in Perioperative Care. Version 2 September 2009 (<http://www.patientsafetyfirst.nhs.uk/ashx/Asset.ashx?path=/How-to-guides-2008-09-19/periopcareLATEST%206%20Oct.pdf>).



## 1.11

## Pregnancy testing before non-obstetric surgery

Dr S Ford

**Why do this audit?**

Non-obstetric surgery is estimated to occur in 1–2% of pregnancies and although anaesthesia is generally regarded as safe,<sup>1</sup> avoidance of certain drugs (e.g. NSAIDs) is advised.<sup>2</sup> Additionally, surgical decision-making and techniques may be altered by a diagnosis of pregnancy, including the use of intra-operative ionising radiation.<sup>3</sup>

Early pregnancy may be unrecognised or patients may be unaware of its significance and not declare it. It is the responsibility of the healthcare team to determine pregnancy status before surgery. The National Patient Safety Agency (NPSA) has issued an alert about the importance of checking for pregnancy before surgery.<sup>4</sup>

The importance of anaesthesia for non-obstetric surgery during pregnancy is referred to in the RCoA CPD matrix and the 2010 curriculum (see CPD/curriculum mapping).

**Best practice: research evidence or authoritative opinion**

NICE guidance on pre-operative investigation recommends that all women of childbearing age should be 'asked sensitively whether or not there is any chance they might be pregnant' and that 'a pregnancy test should be performed with the woman's consent if there is any doubt whether she may be pregnant'.<sup>5</sup>

The Royal College of Obstetricians and Gynaecologists states, 'All reasonable steps should be taken to exclude pregnancy before embarking on a surgical procedure'.<sup>6</sup>

**Suggested indicators**

- D Number of women of childbearing age asked about pregnancy status prior to surgery.
- D Number of women who are unsure of their pregnancy status who are tested for pregnancy.

**Proposed standard or target for best practice**

- D 100% of women of childbearing age, where practicable, should be asked about their pregnancy status prior to surgery.
- D 100% of women who are unsure about pregnancy should be tested prior to surgery, where practicable.
- D No woman should have a pregnancy test under anaesthesia or during surgery as a result of inadequate pre-operative testing.

**Suggested data to be collected**

- D Percentage of women of childbearing age asked before surgery whether they might be pregnant (as assessed by anaesthetic record and theatre careplan).
- D Where there is any doubt as to pregnancy status, the percentage of women undergoing a pregnancy test prior to surgery.
- D Number of women exposed to ionising radiation during surgery who were not tested pre-operatively.

**Notes:**

- D There is no national definition of childbearing age. A sensible age range is 16–45 years.
- D Patients undergoing the following procedures should be excluded from the audit:
  - ◆ obstetric procedures
  - ◆ termination of pregnancy
  - ◆ fertility treatment
  - ◆ evacuation of products of conception
  - ◆ surgical treatment of ectopic pregnancy.

### Common reasons for failure to meet standard

- D Lack of pregnancy testing protocol.
- D Lack of awareness of the importance of pregnancy to anaesthetic and surgical decision-making.
- D No space in documentation (either the anaesthetic record or theatre careplan) for pregnancy status.
- D Shortage of pregnancy testing kits.

### CPD and Curriculum mapping

CPD matrix code: **2A03**

Basic Training Curriculum Competence: **OA\_BK\_03**

### References

- 1 van de Velde M, de Buck F. Anesthesia for non-obstetric surgery in the pregnant patient. *Minerva Anesthesiol* 2007;**73**:235–240.
- 2 British National Formulary 60. *Royal Pharmaceutical Society*, London 2010.
- 3 Protection of pregnant patients during diagnostic medical exposures to ionising radiation. Advice from the Health Protection Agency, The Royal College of Radiologists and the College of Radiographers. *Health Protection Agency*, London 2009 (<http://www.hpa.org.uk/Publications/Radiation/DocumentsOfTheHPA/RCEogProtectionPregnantPatientsduringDiagnosticRCEg/>).
- 4 Rapid Response Alert NPSA/2010/RRR011: Checking pregnancy before surgery. *NPSA*, London 2010 (<http://www.nrls.npsa.nhs.uk/resources/?EntryId45=73838>).
- 5 NICE Clinical Guidelines 3: Preoperative Tests – The use of routine preoperative tests for surgery. *NICE*, London June 2003 (<http://www.nice.org.uk/page.aspx?o=56818>).
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