National Clinical Guideline Centre

Draft for consultation

Preoperative tests

Routine preoperative tests for elective surgery

Clinical guideline <...>

Appendix A: Scope

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Draft for consultation

Commissioned by the National Institute for Health and Care Excellence

Royal College of Physicians

The Royal College of Surgeons of England

RCGP Royal College of General Practitioners

Royal College of Nursing

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Contents

Appendix A: Scope

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

SCOPE

1 Guideline title

Preoperative tests: the use of routine preoperative tests for elective surgery (update).

1.1 Short title

Preoperative tests.

2 The remit

This is an update of 'Preoperative tests' (NICE clinical guideline 3).

See section 4.3.1 for details of which sections will be updated. We will also carry out an editorial review of all recommendations, for example to ensure that they comply with NICE's duties under equalities legislation.

This update is being undertaken as part of the guideline review cycle.

The update was commissioned to include the results of the 2012 Heath Technology Assessment (HTA 2012) 'What is the value of routinely testing full blood count, urea and electrolytes, and pulmonary function tests before elective surgery in patients with no apparent clinical indication and in subgroups of patients with common comorbidities: a systematic review of the clinical and cost-effective literature'. In the areas where new evidence was identified as part of the NICE review update, full searches will be undertaken. No additional searches will be undertaken for areas where the NICE review update found no new evidence. Formal consensus methods will be used, in addition to the updated evidence reviews, to support the development of recommendations, including those where no evidence review is to be conducted.

Preoperative tests scope Page 1 of 13

3 Need for the guideline

3.1 Incidence

a) Many apparently healthy people are tested preoperatively to check for undetected conditions that might affect their treatment. In 2012/2013 the NHS in England completed 10.6 million operations, compared to 6.61 million in 2002/2003. This is an increase of 60%.

3.2 Current practice

a) In 2003 NICE issued guidance for the use of routine preoperative tests for healthy children and adults, and adults with mild, moderate and severe comorbidities (cardiovascular, respiratory, renal disease and obesity), undergoing elective surgery (NICE clinical guideline 3).

b) A generic preoperative test is defined as an investigation done before an operation that is recommended for all patients of a particular type (for example, people in a certain age range or with a particular comorbidity) that is not directly linked to either the surgical procedure or the condition for which the operation is for.

c) The American Society of Anesthesiologists (ASA) Physical Status Classification System is often used by UK anaesthetists to establish a person's functional capacity. ASA grades are a simple scale describing a person's fitness to be given an anaesthetic for a procedure. However, the ASA clearly states that it does not endorse any elaboration of these definitions within the classification system.

Table 1. American Society of Anesthesiologists Physical Status Classification System

ASA grade 1	A normal healthy patient, (that is, without any clinically important comorbidity and without a clinically significant past/present medical history)
ASA grade 2	A patient with mild systemic disease
ASA grade 3	A patient with severe systemic disease
ASA grade 4	A patient with severe systemic disease that is a constant threat to life
ASA grade 5	A moribund patient who is not expected to survive without the operation
ASA grade 6	A declared brain-dead patient whose organs are being removed for donor purposes

d) Clinical opinion currently varies on how useful it is to test apparently healthy people before their operations. There is also increasing awareness that such tests can alarm people unnecessarily for little clinical benefit. Evidence shows that clinicians do not often change how they manage people's care, even if tests in relatively healthy people give abnormal results. Therefore, if preoperative tests are only ordered when healthy people undergoing surgery have a specific condition or there is a reasonable suspicion they have that condition, the potential savings to the NHS could be considerable.

e) Most of the evidence base in NICE clinical guideline 3 (the existing preoperative tests clinical guideline) was inconclusive. As a result of new published evidence in the area, NICE has commissioned an update of the original NICE guideline. In NICE clinical guideline 3 a traffic light system was developed to show the degree of consensus reached by the guideline group and whether the test is

recommended, may be considered or is not recommended (see table below).This will continue to be used for the updated guideline.

YES	Test recommended
NO	Test not recommended
CONSIDER	The value of carrying out a preoperative test is not known (amber area), and may depend on specific patient characteristics

f) Since NICE clinical guideline 3 was published in 2003, new preoperative tests have been developed for use in elective surgery (for example, non-invasive cardiac stress tests) that may give more information on the best form of management during surgery and postoperative complications.

4 The guideline

The guideline development process is described in detail on the NICE website (see section 6, 'Further information').

This scope defines what the guideline will (and will not) examine, and what the guideline developers will consider. The scope is based on the referral from the Department of Health.

The areas that will be addressed by the guideline are described in the following sections.

4.1 Population

4.1.1 Groups that will be covered

Groups that will be covered		Rationale
a)	Adults and young people (older than 16 years) ASA grade 1.	As in the original NICE guideline.

b)	Adults and young people ASA grade 2. c) Adults and young people ASA grade 3 and above. Systemic comorbidities for ASA grades 2, 3 and 4 include: cardiovascular issues, respiratory issues, renal disease, obesity and diabetes.	As in the original NICE guideline. Cardiovascular, respiratory and renal diseases were included as comorbidities in the original NICE guideline. Evidence shows that people with obesity may need different preoperative tests because of the associated risk of complications during operations. Clinical experts at the stakeholder workshop supported the point that people with diabetes may need different preoperative tests because of the associated risk of complications during operations.
d)	Patients having the following types of elective surgery: Grade 1 (minor, such as removal of a skin lesion or drainage of a breast abscess). Grade 2 (intermediate, such as primary repair of an inguinal hernia, removal of varicose veins in the leg, removal of the tonsils or knee arthroscopy).	As in the original NICE guideline.

	Grade 3 (major, such as a full hysterectomy, partial removal of the prostate using an endoscope, removal of part of a damaged disc from the spine or removal of the thyroid). Grade 4 (major+, such as total joint replacement, lung operations, removal of part of the lower intestine, removal of cancerous lymph nodes from the neck, neurosurgery or heart surgery).	

4.1.2 Groups that will not be covered

Groups that will not be covered		Rationale
a)	All children and young people (0–16 years old).	The clinical considerations and the pattern of pathology are different to those for adults. Children are treated in specialist centres.
b)	Pregnant women.	No recommendations were made for

		this group in the original NICE guideline. Relatively few pregnant women will have elective non-obstetric surgery.
c)	Adults with ASA grade 2 or above, with comorbidities other than cardiovascular, respiratory, renal, diabetes or obesity.	The evidence and stakeholder opinion has not supported including any comorbidities other than those already listed.

4.2 Setting

a) All settings in which NHS care is received or commissioned.

4.3 Management

4.3.1 Key issues that will be covered

Areas from the original guideline that will be updated

The proposed method of update is by systematic evidence review and, where appropriate, by formal consensus survey. This guideline will cover the prognostic clinical value of the following preoperative tests:

Preoperative tests		Description and rationale for prioritising topic
a)	Full blood count (haemoglobin, white blood cell count and platelet count).	As in the original NICE guideline and the HTA 2012. Results will be incorporated and updated with new evidence. Amber-coded recommendations in the original NICE guideline indicated uncertainty about the suitability of the test, suggesting a further survey to review the consensus

		position is needed. Obesity and diabetes are included as comorbidities of interest after new evidence was found in the review for updating the guideline.
b)	Kidney function tests (urea, estimated glomerular filtration rate and electrolyte tests).	As in the HTA 2012. Results will be incorporated and updated with evidence. Amber-coded recommendations in the original NICE guideline which were not included in the HTA 2012 (see above). Obesity and diabetes are now included as comorbidities of interest in this update (see above).
c)	Pulmonary function tests (also including blood gas analysis).	As in the HTA 2012. Results will be incorporated and updated with evidence. Amber-coded recommendations in the original NICE guideline which were not covered in the HTA 2012 (see above). Evidence may show that specific pulmonary tests can predict postoperative complications for adults with respiratory disease.
d)	Resting electrocardiogram (ECG).	New evidence shows the limited value of an ECG in changing the best form of management.

Areas not in the original guideline that will be included in the update

As for the table above, the proposed method of update is by systematic evidence review and, where appropriate, by formal consensus survey. This guideline will cover the prognostic clinical value of the following preoperative tests:

Preoperative tests		Population/type of surgery	Description and rationale for prioritising topic
e)	Cardiopulmonary exercise test (CPET).	ASA grade 2 or above undergoing grade 3 and 4 surgery.	Evidence shows this test can identify causes of exercise intolerance (such as obesity, heart and pulmonary disease) and predict postoperative complications for adults undergoing non-cardiac surgery.
f)	Non-invasive cardiac testing: - resting echocardiography	ASA grade 2 or above undergoing grade 3 and 4 surgery.	Evidence shows echocardiography can potentially predict postoperative complications for adults with coronary heart disease and restricted mobility from non-cardiac causes.
g)	Polysomnography (to detect	ASA grade 2 or above (with	There is evidence that this test may guide

	obstructive sleep apnoea [OSA]).	comorbid obesity) undergoing grade 3 and 4 surgery.	management for adults with obesity and OSA during operations.
h)	HbA_{1c} (glycated haemoglobin).	ASA grade 1 (over 40 years old), 2 and above undergoing grade 3 and 4 surgery.	Evidence shows the potential role of hyperglycaemia on the risk of postoperative infections and cardiovascular complications for high risk groups (such as people with cardiac disease, diabetes or obesity).

Areas from the original guideline that will be covered by a formal consensus survey (no systematic evidence review)

No evidence was found for the tests listed below in the NICE update review, but the opinion from the stakeholder workshop was that clinical practice and experience of use is likely to have changed since the original NICE guideline was published in 2003. NICE will carry out a formal consensus survey to explore current practice in these areas:

i) haemostasis tests

j) chest X-ray

k) urine tests

l) pregnancy tests

m) sickle cell disease/trait tests.

4.3.2 Issues that will not be covered

Areas from the original guideline that will be removed

a) Children (ASA grade 1).

b) Cardiovascular surgery.

c) Neurosurgery.

d) Random blood glucose tests

Areas not covered by the original guideline or the update

e) Computed tomography scan of the thorax.

f) Haemoglobin electrophoresis.

g) Blood cross-matching.

h) Screening tests for methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile* (C.Diff), vancomycin-resistant enterococci (VRE), carbapenem-resistant Enterobacteriacaea (CRE), carbapenem-resistant *Klebsiella pneumoniae* (CRKP) and other superbug hospital acquired infections.

i) Preoperative clinical assessment (including history taking, physical examination and advice on the assessment and wider clinical management of people's conditions before surgery or during follow-up) and the optimal setting for preoperative testing.

4.4 Main outcomes

a) All-cause mortality.

b) Change in healthcare management (for example cancellation of surgery).

c) Complications related to surgery or anaesthesia.

d) Length of hospital stay after an operation.

e) Hospital readmission.

f) Adverse events caused by testing.

g) Health related quality of life.

h) Intensive care / high dependency unit admission.

4.5 Economic aspects

Developers will take into account both clinical and cost effectiveness when making recommendations involving a choice between alternative interventions. A review of the economic evidence will be conducted and analyses will be carried out as appropriate. The preferred unit of effectiveness is the quality-adjusted life year (QALY), and the costs considered will usually be only from an NHS and personal social services (PSS) perspective. Further detail on the methods can be found in The guidelines manual.

4.6 Status

4.6.1 Scope

This is the final scope.

4.6.2 Timing

The development of the guideline recommendations will begin in May 2014.

5 Related NICE guidance

5.1 Published guidance

5.1.1 NICE guidance to be updated

This guideline will update and replace the following NICE guidance:

Preoperative tests: the use of routine preoperative tests for elective surgery NICE clinical guideline 3 (2003).

5.1.2 Other related NICE guidance

Patient experience in adult NHS services: improving the experience of care for people using adult NHS services NICE clinical guideline 138 (2012).

5.2 Guidance under development

No other related guidance is under development.

6 Further information

Information on the guideline development process is provided in the following documents, available from the NICE website:

- How NICE clinical guidelines are developed: an overview for stakeholders the public and the NHS: 5th edition
- The guidelines manual.

Information on the progress of the guideline will also be available from the NICE website.