

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

SCOPE

1 Guideline title

Major trauma: assessment and management of airway, breathing and ventilation, circulation, haemorrhage and temperature control.

1.1 Short title

Major trauma

2 The remit

The Department of Health has asked NICE: 'To produce a clinical guideline on the assessment and management of major trauma including resuscitation following major blood loss associated with trauma.'

NICE is developing 5 pieces of guidance relating to trauma, with expected publication dates in June and October 2015 (to be confirmed). Each piece of guidance will focus on a different aspect of trauma care.

- [Complex fractures: assessment and management of complex fractures \(including pelvic fractures and open fractures of limbs\)](#)
- [Fractures: diagnosis, management and follow up of fractures \(excluding head and hip, pelvis, open and spinal\)](#)
- [Major trauma: assessment and management of airway, breathing and ventilation, circulation, haemorrhage and temperature control.](#)
- [Spinal injury assessment: assessment and imaging of patients at high risk of spinal injury](#)
- [Trauma services: service delivery of trauma services](#)

NICE has commissioned the National Clinical Guideline Centre (NCGC) to develop the trauma guidance. The fractures, complex fractures, spinal injury assessment and major trauma guidelines will start development approximately

6 months before the development of the trauma service delivery guideline.

3 Clinical need for the guideline

3.1 *Epidemiology*

- a) Injury is a leading cause of death and disability worldwide. In the UK, there are approximately 15,000 deaths a year from accidents. One third of these are caused by road traffic accidents. Almost 100 people per week die and 200 people are permanently disabled in road accidents.
- b) The early identification of life threatening injuries and conditions and appropriate rapid interventions can be lifesaving. Good early interventions for all injuries speeds recovery, prevents complications and allows an earlier return to active life. However, late identification of injuries (both major and minor), inadequate investigation and imaging of such injuries and late or poor treatment substantially increases both mortality and morbidity.

3.2 *Current practice*

- a) According to a February 2010 report from the National Audit Office:

‘There is unacceptable variation in major trauma care in England depending upon where and when people are treated. Care for patients who have had a major traumatic injury, for example following a road accident or a fall, has not significantly improved in the past 20 years despite numerous reports identifying poor practice, and services are not being delivered efficiently or effectively.
- b) Survival rates vary significantly from hospital to hospital, with between 5 unexpected survivors and 8 unexpected deaths per 100 trauma patients, reflecting the variable quality of care. The National

Audit Office estimates that 450 to 600 lives could be saved each year in England if major trauma care were managed more effectively.

- c) For best outcomes care should be led by consultants experienced in major trauma, but major trauma is most likely to occur at night and at weekends, when consultants are not normally in the emergency department. A very small minority of hospitals have 24-hour consultant cover, 7 days a week.
- d) Major trauma care is not coordinated and there are no formal arrangements for taking patients directly for specialist treatment or transferring them between hospitals. CT scanning is very important for major trauma patients; however, a significant number of patients that need a scan do not receive one.
- e) Access to rehabilitation services, which can improve patients' recovery, quality of life and reduce the length of hospital stay, varies across the country and patients do not always receive the care that they need.
- f) The costs of major trauma care are not well understood. The estimated annual lost economic output from deaths and serious injuries from major trauma is between £3.3 billion and £3.7 billion. Collecting information on care is essential for monitoring and improving services, but only 60% of hospitals delivering major trauma care contribute to the Trauma Audit and Research Network (TARN). The performance of the 40% of hospitals that do not submit data to TARN cannot therefore be measured.

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

Adults, young people and children with a suspected major traumatic injury.

4.1.2 Groups that will not be covered

People with burns.

People with spinal injuries (this will be covered in another guideline)

People with complex fractures (this will be covered in another guideline)

4.2 *Healthcare setting*

All settings in which NHS care is received or commissioned

4.3 *Clinical management*

4.3.1 Key clinical issues that will be covered

- a) Assessment and management of pain relief (including opiates and entonox)

- b) Airway management with cervical spine protection (methods to protect the spine will be addressed in the Spinal Injury guideline and will be cross referred to in this guideline)
 - Definitive airway control (intubation [drug assisted] versus simple supra-glottic devices versus no intervention)

- c) Breathing and ventilation

- Pre-hospital: recognition of chest trauma (including clinical assessment and mechanism of injury)
 - management of chest trauma (including life threatening chest trauma) types of dressings for the treatment of open pneumothorax
 - needle decompression versus open thoracostomy versus chest drain
- Hospital: management of chest trauma (including life threatening chest trauma)
 - needle decompression versus open thoracostomy versus chest drain
 - ◊ chest tube placement
- Imaging assessment of chest trauma (including choice and timing of imaging modality and imaging parameters) such as,
 - pre-hospital: focussed abdominal sonography for trauma (FAST)
 - hospital: X-ray, FAST, CT

d) Circulation with haemorrhage control:

- Assessment of haemorrhage
 - hypotensive shock (including pre-hospital and hospital risk tools)
 - use of lactate levels to guide management of shock
 - imaging (including X-ray, FAST, CT)
- Control of external haemorrhage (stratified by limbs and abdomen)
 - pneumatic compared with mechanical tourniquets
 - haemostatic dressings

- Pre-hospital control of uncompressible haemorrhage:
 - pelvic binders

- Control of haemorrhage in hospital:
 - use of major haemorrhage protocols
 - interventional radiology (including timing)
 - damage-control surgery

- Management of shock
 - access (including intravenous versus intraosseous access)
 - hypotensive versus normotensive resuscitation
 - type of fluid replacement (including blood and fresh frozen plasma ratios)
 - haemostatic agents

- Monitoring:
 - blood tests (including coagulation point-of-care versus laboratory tests)
 - frequency of monitoring
- Management of specific complications in hospital relating to anticoagulation reversal.

e) Exposure:

- Temperature management
 - aggressive warming techniques

f) Skills to be present within the multidisciplinary team

- Pre hospital attending team
- Hospital Trauma team

g) Documentation of clinical assessments and management for people with major trauma (including pre hospital and hospital)

- h) Information and support needs of patients and their families and carers when appropriate.

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4.3.2 Clinical issues that will not be covered

- a) Prevention of major trauma.
- b) Any management after definitive lifesaving intervention.
- c) Major trauma resulting from burns.

The following NICE guidance will be cross referred to

- d) Head injury (for disability relating to neurological assessment)
- e) Spinal injury (methods to protect the spine)
- f) Intravenous fluid therapy in adults (resuscitation)

4.4 Main outcomes

- a) Adverse effects associated with assessment and management of major blood loss following trauma.
- b) Functional scales that quantify level of disability.
- c) Health-related quality of life.
- d) Healthcare contacts; duration and continuity.
- e) Return to normal activities.
- f) Morbidity.
- g) Mortality.
- h) Patient-reported outcomes.
- i) Time to operating theatre (surrogate outcome).
- j) Time to definitive control of haemorrhage.

4.5 Economic aspects

Developers will take into account both clinical and cost effectiveness when making recommendations involving a choice between alternative interventions or strategies. 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' (see 'Further information').

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 June 2013.

5 Related NICE guidance

5.1 Published guidance

- [Patient experience in adult NHS services](#). NICE clinical guideline 138 (2012).
- [Organ donation for transplantation](#). NICE clinical guideline 135 (2011).
- [CardioQ-ODM \(oesophageal Doppler monitor\)](#). NICE medical technologies guidance 3 (2011).
- [Venous thromboembolism](#). NICE clinical guideline 92 (2010)
- [Pre-hospital initiation of fluid replacement therapy in trauma](#). NICE technology appraisal 74 (2004).

5.2 Guidance under development

NICE is currently developing the following related guidance (details available from the [NICE website](#)):

- Intravenous fluid therapy. NICE clinical guideline. Publication expected November 2013.
- Head injury. NICE clinical guideline. Publication expected January 2014.
- Pressure ulcers. NICE clinical guideline. Publication expected May 2014.
- Transfusion. NICE clinical guideline. Publication expected May 2015.
- Spinal injury assessment. NICE clinical guideline. Publication expected June 2015.
- Complex fractures. NICE clinical guideline. Publication expected June 2015.
- Major trauma. NICE clinical guideline. Publication expected June 2015.
- Trauma services. NICE clinical guideline. Publication expected October 2015.
- Intravenous fluid therapy in children. NICE clinical guideline. Publication expected November 2015.

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](#)
- [The guidelines manual](#), 2012.

Information on the progress of the guideline will also be available from the [NICE website](#).