

Major trauma in hospital

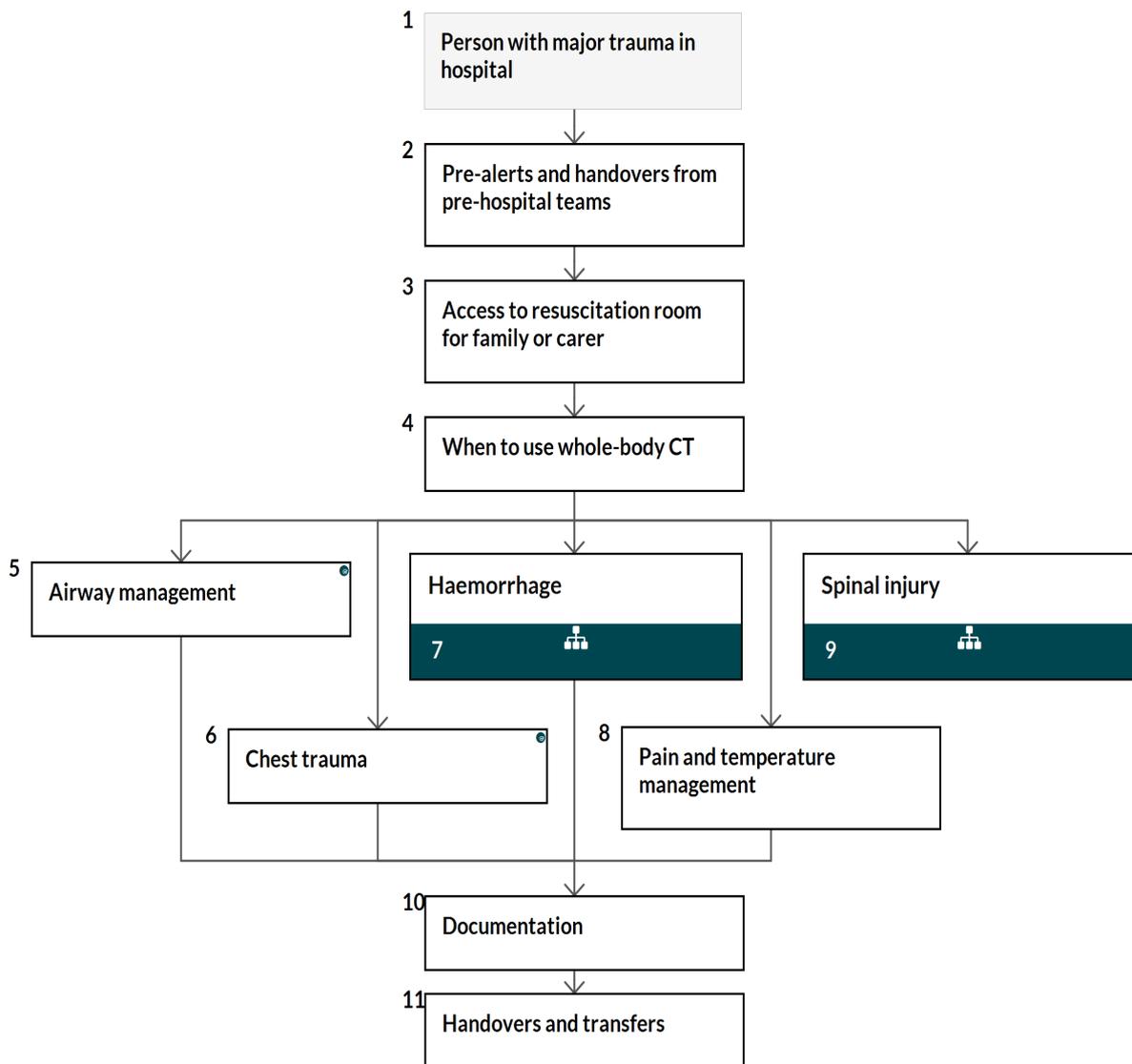
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

<http://pathways.nice.org.uk/pathways/trauma>

NICE Pathway last updated: 03 November 2020

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



1 Person with major trauma in hospital

No additional information

2 Pre-alerts and handovers from pre-hospital teams

A senior nurse or trauma team leader in the emergency department should receive the pre-alert information and determine the level of trauma team response according to agreed and written local guidelines.

The trauma team leader should be easily identifiable to receive the handover and the trauma team ready to receive the information.

The pre-hospital documentation, including the recorded pre-alert information, should be quickly available to the trauma team and placed in the patient's hospital notes.

3 Access to resuscitation room for family or carer

If the patient agrees, invite their family member, carer or friend into the resuscitation room. Ensure that they are accompanied by a member of staff and their presence does not affect assessment, diagnosis or treatment.

4 When to use whole-body CT

Use whole-body CT (consisting of a vertex-to-toes scanogram followed by a CT from vertex to mid-thigh) in people aged 16 and over with blunt major trauma and suspected multiple injuries. Patients should not be repositioned during whole-body CT.

Use clinical findings and the scanogram to direct CT of the limbs in people aged 16 and over with limb trauma.

Do not routinely use whole-body CT to image people under 16. Use clinical judgement to limit CT to the body areas where assessment is needed.

5 Airway management in hospital

Use drug-assisted RSI of anaesthesia and intubation as the definitive method of securing the airway in patients with major trauma who cannot maintain their airway and/or ventilation.

If RSI fails, use basic airway manoeuvres and adjuncts and/or a supraglottic device until a surgical airway or assisted tracheal placement is performed.

NICE has published a [medtech innovation briefing on video laryngoscopes to help intubation in people with difficult airways](#).

Ambu aScope4 Broncho for use in unexpected difficult airways

The following recommendations are from [NICE medical technologies guidance on Ambu aScope4 Broncho for use in unexpected difficult airways](#).

The case for adopting the Ambu aScope4 Broncho for use in people with unexpected difficult airways needing emergency intubation is supported by the evidence. This shows that the Ambu aScope4 Broncho is an acceptable alternative, where a multiple-use fibre optic endoscope is unavailable. There are also advantages during replacement of dislodged tracheostomy tubes in the intensive care setting. Making the Ambu aScope4 Broncho available for use across settings is likely to improve outcomes and patient safety.

Adoption of the Ambu aScope4 Broncho is supported by cost modelling for a range of common clinical settings in which there is no multiple-use endoscope or where existing multiple-use endoscopes are not available. These settings are: isolated units, operating theatre units, and intensive care units, where the uses include the repositioning of displaced tracheostomy tubes. Although there were some uncertainties in the cost modelling, cost savings are likely in all settings modelled. The amount saved will depend on the number of intubations performed and on the number (if any) of existing multiple-use fibre optic endoscopes in use.

The details of the cost modelling and estimated cost savings for each clinical setting are described in [sections 5.16 to 5.20](#) of the guidance. Section 5.21 of the guidance presents the details of the revised cost modelling. As an example of the clinical area where savings could be greatest, using the Ambu aScope4 Broncho in the intensive care setting is estimated to be cost saving (£6,632 per year) when more than 700 intubations are conducted each year, when there are 2 or fewer existing multiple-use fibre optic endoscopes, and assuming that 5% of intubations are difficult.

Translaryngeal tracheostomy

NICE has published [interventional procedures guidance on translaryngeal tracheostomy with normal arrangements](#) for clinical governance, consent and audit.

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

1. Airway management

6 Chest trauma in hospital

In patients with tension pneumothorax, perform chest decompression before imaging only if they have either haemodynamic instability or severe respiratory compromise.

Perform chest decompression using open thoracostomy followed by a chest drain in patients with tension pneumothorax.

Imaging for chest trauma should be performed urgently, and the images should be interpreted immediately by a healthcare professional with training and skills in this area.

NICE has published a [medtech innovation briefing on PleuraFlow Active Clearance Technology for maintaining chest tube patency](#).

People under 16

Consider chest X-ray and/or ultrasound for first-line imaging to assess chest trauma.

Do not routinely use CT for first-line imaging to assess chest trauma.

People aged 16 and over

Consider immediate chest X-ray and/or eFAST as part of the primary survey to assess chest trauma in young people and adults with severe respiratory compromise.

Consider immediate CT for young people and adults with suspected chest trauma without severe respiratory compromise who are responding to resuscitation or whose haemodynamic status is normal.

Thopaz+ for managing chest drains

The following recommendations are from [NICE medical technologies guidance on Thopaz+ portable digital system for managing chest drains](#).

The case for adopting Thopaz+ for managing chest drains is supported by the evidence. Thopaz+ can reduce drainage time and length of stay in hospital, and improves safety for people with chest drains. Its use may also improve clinical decision-making through continuous, objective monitoring of air leaks and fluid loss.

Thopaz+ should be considered for people who need chest drainage after pulmonary resection or because of a pneumothorax. The system can increase patient mobility because it is portable. Staff find it more convenient and easier to use than conventional chest drains.

Cost modelling indicates that Thopaz+ is cost saving compared with conventional chest drains in people after pulmonary resection. The estimated saving is £111 per patient per hospital stay, with savings mainly achieved through reduced length of stay. The NICE [resource impact assessment](#) shows that, at a national level, adopting Thopaz+ is expected to save around £8.5 million per year in England.

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

2. Image reporting

7 Haemorrhage

[See Trauma / Major haemorrhaging in hospital](#)

8 Pain and temperature management in hospital

Offer medications to control pain in the acute phase after spinal injury.

For people with major trauma or spinal injury, use intravenous morphine as the first-line analgesic and adjust the dose as needed to achieve adequate pain relief.

If intravenous access has not been established, consider the intranasal route for atomised

delivery of diamorphine or ketamine. In February 2016 this was an off-label use of intranasal diamorphine and intranasal ketamine. See [prescribing medicines at NICE website](#).

Minimise ongoing heat loss in patients with major trauma.

9 Spinal injury

[See Trauma / Spinal injury in hospital](#)

10 Documenting major trauma in hospital

Record the following, as a minimum, for the primary survey:

- catastrophic haemorrhage
- airway with spinal protection
- breathing
- circulation
- disability (neurological)
- exposure and environment

(<C>ABCDE).

One member of the trauma team should be designated to record all trauma team findings and interventions as they occur (take 'contemporaneous notes').

The trauma team leader should be responsible for checking the information recorded to ensure that it is complete.

Produce a written summary, which gives the diagnosis, management plan and expected outcome and:

- is aimed at and sent to the patient's GP within 24 hours of admission
- includes a summary written in plain English that is understandable by patients, family members and carers
- is readily available in the patient's records.

11 Handovers and transfers

Follow a structured process when handing over care within the emergency department (including shift changes) and to other departments. Ensure that the handover is documented.

Ensure that all patient documentation, including images and reports, goes with patients when they are transferred to other departments or centres.

For patients who are being transferred from an emergency department to another centre, provide verbal and written information that includes:

- the reason for the transfer
- the location of the receiving centre and the patient's destination within the receiving centre
- the name and contact details of the person responsible for the patient's care at the receiving centre
- the name and contact details of the person who was responsible for the patient's care at the initial hospital.

Recommendations for senior doctors and nurses in trauma units

Spend only enough time to give life-saving interventions at the trauma unit before transferring patients for definitive treatment.

Be aware that the MTC is the ultimate destination for definitive treatment.

Glossary

eFAST

extended focused assessment with sonography for trauma

MTC

major trauma centre

Sources

[Spinal injury: assessment and initial management](#) (2016) NICE guideline NG41

[Major trauma: service delivery](#) (2016) NICE guideline NG40

[Major trauma: assessment and initial management](#) (2016) NICE guideline NG39

[Thopaz+ portable digital system for managing chest drains](#) (2018) NICE medical technologies guidance 37

[Ambu aScope4 Broncho for use in unexpected difficult airways](#) (2013 updated 2019) NICE medical technologies guidance 14

Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline

to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare

professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.