Major trauma

Information for the public
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About this information

NICE guidelines provide advice on the care and support that should be offered to people who use health and care services.

This information is for people who have had major trauma, their families and carers. Major trauma is the term used to describe a serious injury that could cause permanent disability or death. Examples of major trauma include serious injuries to the head, the spine or the chest, injuries that cause someone to lose a lot of blood, and complicated breaks to the bones called complex fractures (such as a broken pelvis or a broken bone that is sticking out through the skin).

The NICE guideline offers advice about how to treat breathing problems, chest injuries and heavy bleeding. It does not cover injuries caused by burns. Also it does not cover the treatment of complex fractures, head injuries or spinal injuries. For information about advice we have produced in these areas, see other NICE guidance.

The care team

A range of professionals who specialise in different areas of treatment or support are involved in caring for people with major trauma. They may be part of an ambulance team or a member of a trauma team in the hospital and can include paramedics and other ambulance staff, doctors, nurses, people who take X-rays and scans (radiographers), and surgeons.

Major trauma centres and trauma units

People with major trauma should usually be taken to a hospital that has a major trauma centre. Sometimes quick emergency treatment is needed at a hospital with a trauma unit before the person is moved to the major trauma centre.

Working with people who have major trauma

If a person has been seriously injured a member of the care team should talk to them about their injuries and explain any tests or treatments as soon as possible. Families or carers can be involved in helping to make decisions, but only if the person agrees. Parents or carers may be involved in helping to make decisions for children.

NICE has also produced information for the public on what adults should be able to expect when they use the NHS. We also have more information on the NICE website about using health and social care services.

Some treatments or care described here may not be suitable for everyone who has had a major trauma. If someone thinks that the treatment given does not match this advice, they should talk to their care team.

Treating breathing problems

Major trauma can cause breathing problems so the ambulance team should check the person's breathing. If they are not able to breathe on their own, they may need to have a breathing tube put in. A general anaesthetic (a drug that puts a person to sleep) is given by a doctor before the breathing tube is placed into the person's mouth and down into their windpipe. If a doctor is not available, or if the breathing tube doesn't work well

enough, the ambulance team should use other methods to help the person breathe until they can be taken to a major trauma centre or a trauma unit.

Treating chest injuries

A chest injury can cause a condition called pneumothorax, which happens when air becomes trapped in the chest, causing the lung to collapse. Pneumothorax can be caused by a wound to the chest or lung, for example, the lung being punctured by a rib.

The ambulance team should check for symptoms of a pneumothorax, such as chest pain or shortness of breath. They may also use an ultrasound scan to look inside the chest. If there is a wound to the chest it should be covered with a dressing.

If breathing problems are severe or there are signs that someone's blood is not circulating properly (such as low blood pressure or an abnormal heart rate), the air trapped in their chest should be released so that the lung can inflate again. This is done by putting a needle or a small tube into the chest. It may be done by a member of the ambulance team or the trauma team in the hospital.

At the hospital, people may have an X-ray, ultrasound scan or CT scan of their chest to check for injuries. Children under 16 should usually have an X-ray or an ultrasound scan because these give out less radiation than CT scans and are considered safer for children.

Preventing and treating blood loss

If the person is bleeding heavily the ambulance team should put pressure on the wound to help stop the bleeding and put a dressing on it. If there is a large wound to a leg or arm, and pressure does not stop the bleeding, a bandage (called a tourniquet) should be wrapped tightly around the leg or arm to control the bleeding.

An injection of tranexamic acid should be given as soon as possible to help reduce the bleeding. Tranexamic acid works by preventing the body from breaking down blood clots too soon, which allows the clots to help stop the bleeding.

Replacement fluids and blood should also be given to bring the person's blood circulation back to normal. These are usually given by a drip directly into a vein (intravenously) in their hand or arm.

If the ambulance team think there might be bleeding inside the body from a broken pelvis, they should use a pelvic binder to reduce the bleeding and ease the pain. A pelvic binder is a wide fabric belt that is wrapped around the body to protect the pelvic area (between the stomach and the thighs). It is adjusted to fit snugly so that it stops the broken bones in the pelvis from moving around.

At the hospital, people may have X-rays or a CT scan to check for bleeding inside the body. CT scans in children under 16 should usually be limited to the parts of the body that are injured, to lessen the amount of radiation they receive.

Stopping bleeding in people who take medicine to prevent blood clots

If someone arrives at the hospital and is still bleeding heavily, and they usually take medicine to prevent blood clots (called an anticoagulant) such as warfarin, apixaban, dabigatran or rivaroxaban, they should quickly be given another drug to temporarily stop the anticoagulant from working. This will allow their blood to form clots and help stop the bleeding.

Pain relief

If someone has had a major trauma, they should be checked regularly to see how much pain they are in. They should be given painkillers and have the dose adjusted until they are comfortable. The painkillers should be given before the person arrives at the hospital and while they are at the hospital, as needed.

The painkillers should be injected or given through a drip. If this isn't possible, they may be given as a spray up the nose.

Information and support

At the hospital

After someone arrives at hospital with major trauma, if possible they should be asked if

they would like a family member, carer or friend with them. A member of staff should also be there to provide support and answer questions.

The hospital staff should explain:

- what the injuries are
- tests and treatments the person might be having
- how long it might take them to recover from their injuries
- when or if they're likely to be able to return to their normal activities
- whether they will recover fully or might have permanent effects from their injuries.

People should have the chance to ask questions, which should be answered honestly.

Children and adults who may need extra support

If the person who is injured is a child or adult who might need extra support (for example, because they have a learning disability or dementia), a member of the hospital staff should be assigned to look after them and to contact their families or carers. If possible, parents and carers should be able to stay where the person who is injured can see them. Staff should work with family members and carers to explain injuries and treatment in a way the person with the injuries can understand. Brothers and sisters of any children who are injured should also be included when support is offered to the family.

When moving to another hospital

If a person who is injured is moving to another hospital, they should be told where they are going, why they are being moved there and who will be responsible for their care at the new hospital (including contact details). They should be given some written information about this. The name and contact details of the person who was responsible for their care at the first hospital should also be written down for them.

Hospital records

When people are moved to a ward or another hospital, their hospital records should be sent with them.

Hospital staff should write a description of the injuries, plans for treatment and how they expect the person to recover. It should include a short summary that people and their families and carers can understand. Hospital staff should send this to the person's GP within 24 hours of their admission to hospital.

Sources of advice and support

- Brain and Spine Foundation, 0808 808 1000
  www.brainandspine.org.uk
- Headway – the brain injury association, 0808 800 2244
  www.headway.org.uk
- Limbless Association, 0800 644 0185
  www.limbless-association.org
- Pain Concern, 0300 123 0789
  www.painconcern.org.uk
- Spinal Injuries Association, 0190 860 4191
  www.spinal.co.uk

You can also go to NHS Choices for more information.

NICE is not responsible for the quality or accuracy of any information or advice provided by these organisations.

Other NICE guidance

- Spinal injury (2016) NICE guideline NG41
- Fractures (complex) (2016) NICE guideline NG37
- Head injury (2014) NICE guideline CG176

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