

Starting replacement fluid therapy for people with serious injuries before reaching hospital

Understanding NICE guidance –
information for the public

January 2004



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Starting replacement fluid therapy for people with serious injuries before reaching hospital

Understanding NICE guidance – information for people who have been treated for injuries causing severe bleeding, their families and carers, and the public

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Copies of this booklet can be ordered from the NHS Response Line; telephone 0870 1555 455 and quote reference number N0431. A version in Welsh and English is also available, reference number N0432. Mae fersiwn yn Gymraeg ac yn Saesneg ar gael hefyd, rhif cyfeirnod N0432. The NICE technology appraisal on which this information is based, *Pre-hospital initiation of fluid replacement therapy in trauma*, is available from the NICE website (www.nice.org.uk/TA074guidance). A short version of the guidance (a 'quick reference guide') is also available on the website (www.nice.org.uk/TA074quickrefguide) and from the NHS Response Line, reference number N0430.

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What is NICE guidance?

The National Institute for Clinical Excellence (NICE) is part of the NHS. It produces guidance (recommendations) on the use of medicines, medical equipment, diagnostic tests and clinical and surgical procedures within the NHS in England and Wales.

To produce this guidance, NICE looks at how well the medicine, equipment or procedure works and also how well it works in relation to how much it costs. This process is called an appraisal. The appraisal process involves the manufacturer of the medicine or equipment for which guidance is being produced and the organisations that represent the healthcare professionals, patients and carers who will be affected by the guidance.

NICE was asked to look at the available evidence on starting IV fluid replacement for people with serious injuries before they reach hospital. NICE was asked to provide guidance that will help the NHS in England and Wales decide on the circumstances when IV fluid replacement should be started before the injured person reaches hospital.

What is IV fluid replacement?

People who are injured in an accident or through violence often lose a lot of blood. The medical word for these types of injury is trauma. When a lot of blood is lost, there may not be enough left to keep it circulating round the body to the vital organs such as the heart and brain. This means that not enough oxygen and nutrients reach the organs for them to work properly. If the lost blood is not replaced quickly, this can damage the organs permanently, and the person might die.

One way to replace lost blood and get the blood moving again is to give the person fluid directly into a vein (which is a blood vessel that is taking blood back towards the heart). This is called intravenous fluid replacement, or IV fluid replacement for short. First, a needle called a cannula is inserted into a vein – often on the inside of the arm. Then a tube leading to a bag of fluid is attached to the cannula, and the bag is lifted up so that the fluid gradually flows into the vein.

Different types of fluid can be used for IV fluid replacement. One type is called crystalloid solutions, which are sugars or salt dissolved in water. Another type is colloid solutions, which contain starch or other substances.

When an ambulance crew or doctor arrives at the scene of an accident or violent incident, they have to decide what treatment each injured person needs immediately. It may not always be best to start IV fluid replacement straight away. One reason for this is that setting up the fluid replacement system could delay getting the person to hospital. Another is that the fluid could make the bleeding worse by reducing the ability of the blood to form clots, or by dislodging clots that have already formed.

NICE has looked at the evidence on IV fluid replacement and produced guidance to help healthcare staff decide whether to start it as soon as possible, or wait until the person reaches hospital and can have an operation to stop the bleeding and treat the injuries.

What has NICE recommended on starting IV fluid replacement before reaching hospital?

During the appraisal, NICE's Appraisal Committee read and heard evidence from:

- high-quality studies of IV fluid replacement
- doctors with specialist knowledge of using IV fluid replacement to treat people who have lost blood because of injuries
- organisations representing the views of people who will be affected by the guidance (because they work in the NHS and are involved in providing care for people with serious injuries)
- the manufacturers of IV fluids.

The evidence is summarised in the full guidance (see end for details). More information about the studies is provided in the assessment report for this appraisal (see end for details).

NICE has made the following recommendations about giving IV fluid replacement to injured people before they reach hospital. The recommendations have been issued to the NHS in England and Wales. The guidance applies to adults and older children, but does not apply when the only injury is a head injury with no visible bleeding.

A person who has been injured should not be given IV fluids before reaching hospital if a pulse can be felt at his or her wrist. Checking the wrist pulse (the medical term for this is the radial pulse) is a quick and simple way of assessing whether the blood is circulating round the body. If there is bleeding from a wound on the back, chest or abdomen caused by, for example, a knife or glass, the ambulance crew should check a different pulse – the central pulse, which is felt at the neck. IV fluid should be given if the pulse cannot be felt. The person should receive up to 250 ml of fluid at a time. After each dose, the pulse should be checked, and another dose given if the pulse still cannot be felt.

NICE says that, if IV fluids are given, ambulance staff should consider starting replacement on the way to hospital. Starting fluid replacement should not cause delays in getting the person to hospital. When IV fluids are given before an injured person reaches hospital, crystalloid solutions should usually be used.

NICE says there is not enough evidence for it to be able to make recommendations on giving IV fluids to injured babies and young children before reaching hospital. Most doctors agree that IV fluid replacement should not be started if it will delay getting the child to hospital.

Only staff who have had special training in techniques called advanced life support and pre-hospital care should give IV fluids to injured people before they reach hospital. These staff are usually paramedics or doctors.

Will NICE review its guidance?

Yes. The guidance will be reviewed in January 2007.

Further information

The NICE website (www.nice.org.uk) has further information about NICE and the full guidance on pre-hospital initiation of fluid replacement therapy in trauma that has been issued to the NHS. The assessment report, which contains details of the studies that were looked at, is also available from the NICE website. A short version of the guidance (a 'quick reference guide') is also available on the website (www.nice.org.uk/TA074quickrefguide) and from the NHS Response Line (reference number N0430).



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