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## Quick reference guide

# Pre-hospital initiation of fluid replacement therapy in trauma

## 1 Guidance

This guidance covers the management of adults, children and infants with physical injuries as a result of trauma, in whom there is evidence of obvious or probable blood loss. It does not cover the management of isolated closed head injury. For the purpose of this guidance, it is assumed that basic life support and ongoing assessment of the trauma victim are taking place as appropriate. The requirement for cannulation is considered only within the context of pre-hospital intravenous fluid (IV fluid) administration.

- 1.1 It is recommended that in the pre-hospital management of adults and older children, IV fluid should not be administered if a radial pulse can be felt (or, for penetrating torso injuries, if a central pulse can be felt).
- 1.2 In the absence of a radial pulse (or a central pulse for penetrating torso injuries) in adults and older children, it is recommended that IV fluid should be administered in boluses of no more than 250 ml. The patient should then be reassessed, and the process repeated until a radial pulse (or central pulse for penetrating torso injuries) is palpable.
- 1.3 The administration of IV fluid should not delay transportation to hospital, but when given in accordance with 1.2 above, consideration should be given to administration en route to hospital.
- 1.4 It is recommended that when IV fluid is indicated in the pre-hospital setting, crystalloid solutions should be the routine choice.
- 1.5 There is inadequate evidence on which the Institute can base recommendations on when pre-hospital use of IV fluid in young children and infants following trauma is appropriate, or on the volumes of fluid to use. However,

there is a broad consensus that transfer to hospital should not be delayed by attempts to administer IV fluid.

- 1.6 It is recommended that only healthcare professionals who have been appropriately trained in advanced life-support techniques and pre-hospital care should administer IV fluid therapy to trauma patients in the pre-hospital setting.
- 1.7 Training programmes for healthcare professionals should incorporate the above recommendations.

## 2 Implementation

### 2.1 Implications for the NHS

- 2.1.1 Given the absence of reliable information on the current use and cost of pre-hospital IV fluids in people with trauma, it is difficult to quantify the likely cost of implementing the recommendations in Section 1. Limiting the use of pre-hospital IV fluid in the treatment of trauma patients would be unlikely to yield monetary savings within the ambulance service, but it could save time at the accident scene. This might release resources within the ambulance service – contributing to improved response times – and lead to small improvements in overall efficiency. Further details are included in the full guidance (see Further Information).

### 2.2 Local implementation and audit

- 2.2.1 Ambulance trusts and clinicians who have been trained in advanced life support (ALS) and pre-hospital care should review their current practice and policies to take account of the guidance set out in Section 1. Local adaptations of the Joint Royal Colleges

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This guidance is written in the following context:

This guidance represents the view of the Institute, which was arrived at after careful consideration of the available evidence. Health professionals are expected to take it fully into account when exercising their clinical judgement. This guidance does not, however, override the individual responsibility of health professionals to make appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Ambulance Liaison Committee (JRCALC) guidelines that refer to the pre-hospital initiation of fluid replacement therapy in trauma should incorporate the guidance.

2.2.2 To measure compliance locally with the guidance, the following criteria could be used. Further details on criteria for audit are included in the full guidance.

- IV fluid is not administered as part of pre-hospital management of an adult or older child if a radial pulse, or with a penetrating torso injury, a central pulse, can be felt.
- IV fluid in boluses of no more than 250 ml is administered if no radial pulse is palpable (or no central pulse is detected in the case of a penetrating torso injury), followed by reassessment, repeating the process until a radial (or central) pulse is palpable.
- If IV fluid is administered for the circumstances described above, it is initiated en route to hospital (excluding individuals who are not considered appropriate to move).

- When IV fluid is indicated in the pre-hospital setting, crystalloid solutions are the routine choice.
- Only healthcare professionals who have been appropriately trained in ALS and pre-hospital care administer IV fluid to people experiencing trauma in the pre-hospital setting.
- Training programmes for healthcare professionals caring for people experiencing trauma incorporate the guidance in Section 1.

2.2.3 Local clinical audits could also include measurement of compliance with other relevant clinical guidance such as JRCALC guidelines and the Consensus Statement\*.

\* A statement developed by the Faculty of Pre-hospital Care and the Royal College of Surgeons of Edinburgh, with representation from the Faculty of Accident and Emergency Medicine, the United Kingdom Military Defence Forces, the Ambulance Service Association, BASICS, the London Helicopter Emergency Medical Service and researchers with an interest in pre-hospital care.

## Further information

### Distribution

The distribution list for this quick reference guide is available on the NICE website at [www.nice.org.uk/TA074distributionlist](http://www.nice.org.uk/TA074distributionlist)

### Full guidance

The full guidance is available from [www.nice.org.uk/TA074guidance](http://www.nice.org.uk/TA074guidance)

It contains the following sections: 1 Guidance; 2 Clinical need and practice; 3 The technology; 4 Evidence and interpretation; 5 Recommendations for further research; 6 Implications for the NHS;

7 Implementation and audit; 8 Related guidance; 9 Review of guidance.

The full guidance also gives details of the Appraisal Committee, the sources of evidence considered and suggested criteria for audit.

### Information for the Public

NICE has produced information describing this guidance for the public. It is available from the NHS Response Line (see below) and from the NICE website at [www.nice.org.uk/TA074publicinfoenglish](http://www.nice.org.uk/TA074publicinfoenglish) (English version) and [www.nice.org.uk/TA074publicinfowelsh](http://www.nice.org.uk/TA074publicinfowelsh) (English and Welsh version).

### Ordering information

Copies of this quick reference guide can be obtained from the NICE website at [www.nice.org.uk/TA074quickrefguide](http://www.nice.org.uk/TA074quickrefguide) or from the NHS Response Line by telephoning 0870 1555 455 and quoting reference number N0430. *Information for the Public* can be obtained by quoting reference number N0431 for the English version and N0432 for a version in English and Welsh.

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