



**CSOP 003 – Hospital Selection & Bypass**

Version No: 3.2

Effective date: 11/02/2022

**APPROVALS**

Original Document Author:	<u>Name</u>	<u>Date</u>	<u>Signature</u>
	Dr Neil Thomson	02/2010	
Revised Document Prepared by:	Mark Beasley - Paramedic		
Reviewed by:	Dr Tim Smith Danny Evans - Paramedic Phil Bridle – Head of Operations		
Approval:	Justin Squires - Deputy Clinical Lead		
Next Review Date:	February 2024		

**HISTORY**

Effective Date	Version No.	Summary of Amendment
February 2010	1.0	Initial distribution of CSOP 003 - Hospital Selection & Bypass
November 2011	2.0	Review and update of contact details and service provision for all hospitals stated in appendices. (Dylan Griffin)
May 2014	3.0	Revision
Mar 2018	3.1	Review and amendments
May 2020	3.2	Reviewed, minor edits to annexes

**REFERENCES**

Document Reference Number	Document Title



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### ANNEX/APPENDIX

Document Reference Number	Document Title
Annex 1	Major Trauma Centres
Annex 2	Sites offering PPCI
Annex 3	Hyper Acute Stroke Services
Annex 4	Paediatric Intensive Care Facilities
Annex 5	Burns Facilities, Units and Centres

#### 1. Purpose

One of the benefits of a HEMS system is the ability to transport patients to the most appropriate hospital, rather than the closest.

Sometimes the decision making process is very easy, but where a variety of hospitals offer similar services, or where the patient would need to be taken a long distance the process becomes more complicated. Although our first responsibility has to be to the patient, we need to bear in mind the implications that our decisions may have on receiving hospitals, critical care facilities, the patients and their families.

Right Patient - Right Hospital - Right Time - First Time

#### 2. Scope

There is a significant quantity of literature suggesting that patients with serious illness or injury have better outcomes when conveyed to centres that specialise in the management of those conditions.

There is also significant evidence to show poor outcomes in patients where a secondary transfer is required.

At the same time, we need to recognise that we cannot convey every patient to a major referral hospital without causing overloading and reduced capacity, especially in critical care facilities.

Hospital selection must be based first and foremost on the perceived clinical needs of the patient or patients that we are treating at the time.



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Assessment of ill or injured patients in the out-of-hospital setting is difficult. It is not always possible to eliminate the possibility of serious illness or injury. For this reason it is accepted that there will be a degree of over-triage.

The following groups of patients are covered by this policy:

- Major Trauma, including head and pelvic injury
- STEMI and suspected STEMI
- CVA
- Paediatrics
- Burns

Appendices 1-5 contain up-to-date lists of hospitals in and around the area served by WNAA and DLRAA. These should be reviewed every six months, or upon receipt of information of a change in services.

Crews are reminded that the responsibility for pre-alerting the hospital rests with the lead clinician on the crew, and **must** be done during a recorded conference call with the emergency department placed through the tasking EOC.

### 3. Definitions/Acronyms:

Abbreviations/Acronyms	Definitions
STEMI	ST Elevation Myocardial Infarction
EOC	Emergency Operations Centre (Control)
TARN	Trauma Audit Research Network
GCS	Glasgow Coma Scale
pPCI	Primary Percutaneous Coronary Intervention
CVA	Cerebrovascular accident
FAST	Face, arms, speech test
TIA	Transient Ischaemic attack

### 4. Major Trauma (Adults)

Major Trauma is defined by the Trauma Audit Research Network (TARN) and others as an Injury Severity Score of Greater than 15. As ISS can only be calculated once the full extent of the injury is known (often several days later) the decision has to be based upon clinical judgment, and



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assessment of both obvious and *potential* injuries that might reasonably be suspected based on the mechanism of injury and early signs and symptoms.

A Major Trauma Centre (Level 1) is defined as a hospital that has cover available on site, 24 hours a day in at least the following specialties:

Emergency Medicine (with 24-hour Consultant presence)

- General Surgery
- Orthopaedic Surgery
- Neurosurgery
- Cardiothoracic Surgery
- Vascular Surgery
- Spinal Surgery
- Plastic Surgery
- Maxillofacial Surgery
- Anaesthesia and Critical Care
- Interventional Radiology

Most local Trauma Units and District General hospitals (Levels 2) will be able to initiate resuscitation and management of severely injured patients; their ability to provide definitive care for complex or serious injuries will often depend on the staff available or on call. Local Emergency Hospitals (Level 3) will only have limited capability to manage such patients.

Some hospitals offer one or two specialties, such as plastics, burns, neurosurgery or spinal surgery and rehabilitation. Whilst useful in patients with isolated injuries, this does **not** make them suitable destinations for the patient with multiple serious injuries.

Patients with complex isolated hand trauma can be managed at all MTCs. In addition to this, Leicester Royal Infirmary and Royal Derby Hospital also have 24 hour provision of specialist plastic/orthopaedic services that are equipped to deal with complex hand injuries. It should be noted however, that although Royal Derby Hospital is a specialist hand unit, the vast majority of hand trauma can be managed in an MTC or Leicester Royal Infirmary, and therefore the patient should be transferred to the nearest hospital with appropriate facilities.



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An up to date list of hospitals designated as major trauma centres is contained in Appendix 1

### Notes:

- If the patient's airway is compromised and cannot be definitively secured, divert to the nearest hospital.
- Burns (other than those associated with other injuries) are not covered in this tool.
- Primary vs Secondary sites: If the 'ideal' hospital does not have a primary helipad, and the road transfer from the secondary site would take significantly longer than the flight to a more distant hospital with a primary site, consider going to the further hospital with patients who are very unstable. Please be mindful of not overloading hospitals with primary helipads.
- Ground Assist and at Night: A patient who should go to a Major Trauma Centre according to this chart should be taken to a Major Trauma Centre, regardless of weather or time of day.

### **Adult Major Trauma Decision Tool:**

**Please refer to the most current trauma tool for the area in which you are operating.**

#### **4.1 Acute Coronary Syndromes and ST-Elevation Myocardial Infarction**

All patients experiencing chest or abdominal pain or discomfort that could be of cardiac origin must have a 12-lead ECG as part of their assessment.

Patients with evidence of a STEMI should be taken directly to a facility capable of providing emergency Primary Angioplasty (pPCI).

#### **Inclusion criteria for pPCI:**

- Sustained (more than 15 minutes) chest pain or discomfort suggestive of Acute Coronary Syndrome
- 12-lead ECG showing ST segment elevation in two or more leads of the same group
  - At least 2mm in the chest leads
  - At least 1mm in the limb leads



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Those patients with proven or presumed new-onset Left Bundle Branch Block (LBBB) should be discussed with the receiving hospital regarding their acceptance for pPCI.

### Exclusion Criteria

- Patients in cardiac arrest **where the cause cannot be reasonably assumed to be cardiac**

For those patients that fit the inclusion criteria for pPCI, the pre-alert call should be made via the tasking EOC to the hospital's dedicated pPCI hotline. This applies to all hospitals in our region, aside from UHCW where contact should be made with ED in the first instance who will inform cardiology. This may enable, in certain cases, a direct transfer of the patient to the catheter suite and bypassing ED.

Intubated patients with ECG changes suggestive of STEMI, and patients in cardiac arrest with persistent refractory VF may be directly accepted to the catheter suite, however discussion with the cardiologist on call may be required, via the pPCI hotline number. Those patients with significant symptoms but a non-diagnostic or paced ECG, or those with symptoms suggestive of cardiogenic shock should be transferred to the emergency department with a standard pre-alert to the ED.

An up-to-date list of hospitals that provide pPCI and their hotline number is contained in Appendix 2, and the tasking EOC also has an up to date list of each hospital's pPCI hotline. Where possible calls to the pPCI hotline should be made through the tasking EOC.

Aspirin, GTN and Morphine should be given to all patients unless contraindicated. ECG monitoring should be continued throughout the patient journey, with consideration given to applying defibrillator pads for transfer.

### 4.2 CVA

An increasing number of centres are offering immediate CT scanning and thrombolysis for CVA. There are local variations in the time-frame that are accepted.

### Inclusion Criteria

- Ideal candidates for thrombolysis are previously healthy patients who are now FAST positive with an onset time. This time frame may vary between hospitals, however is normally <4 hours.



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- They should be fully conscious with capacity and capability of giving consent.
- Blood glucose must be checked and documented to be above 4.0 mmol / l.  
(Hypoglycaemia commonly presents with unusual neurological signs.)

Patients meeting these criteria should be conveyed to the nearest facility offering hyper-acute CVA services.

### Exclusion Criteria

- Reduced level of consciousness, including patients who have had to undergo pre-hospital anaesthesia to protect their airway.  
(This makes the diagnosis of embolic / thrombotic stroke less likely, and makes consent difficult)
- Unclear duration / time of onset e.g. Patients waking from sleep with weakness

### Discussion with the Stroke Consultant / EM Consultant

- Patients with a negative FAST test, but a Positive ROSIER Test<sup>1</sup>
  1. Visual Field Loss
  2. Isolated leg weakness
- Patients with subtle signs such as imbalance or dizziness
- Duration greater than 3 hours and less than 6 hours.

### Cautions

Patients with loss of consciousness and focal signs and / or seizure activity are more likely to have developed an intracranial bleed and should be conveyed to a centre offering neurosurgical facilities.

### Pre-Alert Message

- An alert message must be set up on a conference call through the Tasking EOC.
- The message must contain the information that the patient is believed to have a CVA that meets the criteria for Hyper-acute Assessment
- The Time of onset of symptoms will be needed.

<sup>1</sup> <http://www.newcastle-hospitals.org.uk/downloads/clinical-guidelines/Care%20of%20the%20Elderly/ROSIERv15.pdf>



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### 4.3 TIA's

A patient with symptoms of a stroke that have resolved by the time you arrive on scene has probably had a TIA. If the ABCD2 score is 4 or more, or the patient has had two or more TIA's in a week, they are at high risk of developing a stroke, and must be referred to hospital. <sup>2</sup>

An up-to-date list Hospitals offering hyper-acute stroke services is contained in Appendix 3

### 5.0 Children and Infants

For the purpose of this document an Infant is defined as being aged up to one year, and a child from one year to 16 years.

Seriously ill or injured children and infants represent a significant challenge. There are some significant physiological and anatomical variances, the most notable of which is the speed that at which they can deteriorate when they reach the end of their compensatory reserve.

Bearing this in mind, crews should aim to spend as little time as possible on scene with unwell or unstable children. Interventions should be kept to a minimum; consider discussing advanced procedures, such as RSI with a senior on-call medical advice doctor, and follow the guidelines issued by the AAGBI.

#### 5.1 Trauma

Children should be taken to centres that are capable of dealing with their injuries. Designated major trauma centres should be capable of assessing and stabilising critically injured children, though not all of them have paediatric intensive care facilities on site. Any paediatric major trauma patient must be transported to a paediatric major trauma centre.

#### 5.2 Medical Emergencies

Most paediatric medical emergencies can be managed at a DGH. Any child who is predicted to require intensive care should be transported to a hospital with this facility.

An up-to-date list Hospitals providing Critical Care facilities for children is contained in Appendix 4

<sup>2</sup> NICE CVA Guidelines <http://www.nice.org.uk/nicemedia/pdf/CG68QuickRefGuide.pdf>

<sup>3</sup> AAGBI Guidelines for Pre-hospital Anaesthesia [http://www.aagbi.org/sites/default/files/prehospital\\_glossy09.pdf](http://www.aagbi.org/sites/default/files/prehospital_glossy09.pdf)





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### 5.3 Relatives & Carers

If at all possible, and especially if a child is being taken to a specialist centre some distance away, a parent or carer should accompany the child to hospital. Not only is this good clinical practice, but it allows the receiving hospital to make informed decisions about the child's care, and to obtain consent for investigations and interventions. The need to take an escort must also be risk assessed against possible infectious disease states of the patient and escort and any IP&C procedures in place to stop the spread of infectious diseases.

Taking a parent or carer (which ultimately is at the discretion of the Aircraft Captain) may mean leaving an observer or trainee on scene, and all observers should be made aware of this as part of the morning brief.

### 6.0 Burns

Unfortunately, the Major Trauma Network and National Burns network are not well matched in terms of destination hospital.

There is no absolute indication to transfer burned patients directly to burns centres or units, especially if they are not co-located with Major Trauma Centres. Where a choice between 2 MTCs is possible, then it is reasonable to choose the one with the burns service, for a patient with burns. These include:

- (1) University Hospital of Birmingham
- (2) Birmingham Children's Hospital
- (3) Nottingham (Burns unit not co-located on MTC site)

See CSOP15 for burns referral guidance.

Patients with burns to the face, mouth or neck, or an inhalation injury are at risk of airway compromise. If a definitive airway cannot be secured on scene, the patient should be taken **by road** to the nearest hospital. Do not bypass a hospital with a patient who may develop airway compromise.

Extreme caution should be taken with patients who have sustained burns as a result of deliberate self-harm. These patients **MAY NOT** be conveyed by helicopter unless they are anaesthetised, paralysed and ventilated. THERE IS NO EXCEPTION TO THIS RULE



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Patients with a minor or moderate burn injury (<10% partial thickness in children or < 20% partial thickness in adults) should be taken to a local hospital, provided that there are no time-critical features or involvement of 'special areas'.

A list of burns centres and units is provided at Appendix 5

### 7.0 Diving Emergencies

When the primary concern is decompression illness, it may be appropriate to transport the patient directly to a recompression centre. Take advice from the Diving Diseases Research Centre they will help to identify the most appropriate centre. The telephone number is programmed into operational mobile phones.

More information can be found on CSOP No. 008 Diving Emergencies.

**End of Document**