# Trauma Operational Policy

**Author:** Dr Helen Cannon Consultant Lead for Trauma

**Status:**
- Approval date: June 2017
- Ratified by: Quality & Performance Governance Committee
- Review date: June 2020

*Patients first  •  Personal responsibility  •  Passion for excellence  •  Pride in our team*
History

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date Issued</th>
<th>Brief Summary of Change</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feb 15</td>
<td>New Policy</td>
<td>HC</td>
</tr>
<tr>
<td>2</td>
<td>June 16</td>
<td>Review of policy</td>
<td>TDG</td>
</tr>
<tr>
<td>3</td>
<td>Sept 16</td>
<td>Review of policy post National Trauma Peer Review (July 16)</td>
<td>TDG</td>
</tr>
<tr>
<td>4</td>
<td>Feb 2017</td>
<td>Inclusion of burns &amp; updated SWLTN protocols</td>
<td>TDG</td>
</tr>
<tr>
<td>5</td>
<td>June 2017</td>
<td>Inclusion of updated SWLTN protocols and ASPH protocols</td>
<td></td>
</tr>
</tbody>
</table>

For more information on the status of this document, please contact:

Dr Helen Cannon Consultant Lead for Trauma

Policy Author: Dr Helen Cannon Consultant Lead for Trauma
Reviewed by Trauma Delivery Group Sept 16

Department/Directorate: Acute Medicine and Emergency Care

Executive Lead: Tom Smerdon

Date of issue: June 2017

Review due: June 2020

Ratified by: Quality Performance & Governance Committee

Audience: Emergency Care, Trauma Teams, All Divisions
Executive summary

Ashford and St Peters Hospitals NHS Foundation Trust (ASPH) is part of the South West London and Surrey Trauma Network (SWL&STN) and are classified as a Trauma Unit (TU). The majority of local trauma presenting by ambulance is transferred directly to St Georges Hospital (SGH) which is the Networks major Trauma Centre (MTC).

SECAMB (South East Coast Ambulance Services) use a network approved decision tree to decide which patients are appropriate for bypass. However, we still get seriously injured patients who arrive by private transport or walk in and these are the patients who need to be managed in accordance with the network guidelines.

The Trust Board at ASPH recognise the value of delivering effective trauma services as part of the network and the benefits this brings the local population. ASPH are committed to maintaining their local trauma unit status and to ensuring that key service improvement and governance recommendations (as described within the network strategy) are achieved.

Priorities for development includes; delivery of high quality care (for all clinical pathways) including elderly trauma, trauma brain injury, vertebral column injury, complex musculoskeletal injury, receive high quality, safe and compassionate care.

See also:
Emergency Theatres Policy
Resuscitation Policy
Patient Bed Management & Flow Policy
Older Persons Short-Stay Unit (OPSSU) Policy
SWLTN Website: www.swlandstn.com
Contents

Executive Summary

1. Introduction

2. Purpose

3. Glossary

4. Key Personnel

5. Local Management Process

6. Trauma Team Activation Protocol

7. Trauma Team Roles

8. Imaging (inc Interventional Radiology)


10. Criteria for Transfer to the Major Trauma Centre (MTC)

11. Referrals to the Major Trauma Centre

12. Admission criteria for Trauma Unit (TU) and ongoing care
   - Isolated Head injuries
   - Thoracic injury
   - Spinal Injury
   - Abdominal Trauma
   - Paediatric patients
   - Difficult Intubation Protocol
   - Open Fractures (BOAST Guidelines)
   - Management of Burns

13. Elderly care

14. Trauma Care Coordinators

15. Therapies

16. Discharge documentation

17. Transfer of Care Policy (Repatriation)
18. Governance and Risk Management
19. TARN
20. Training & Education
21. Monitoring & Compliance
22. Dissemination, Implementation & Review

**Appendices**

**Appendix 1**  
SW London & Surrey Trauma Network Secondary Transfer Protocol for Major Trauma Adult & Paediatric

**Appendix 1a**  
SWLTN Transfer – Levels of care definitions

**Appendix 1b**  
Trauma Secondary Transfer form

**Appendix 2**  
Criteria for activating the Trauma Team

**Appendix 3**  
Trauma Team Roles

**Appendix 4**  
SW London & Surrey Trauma Network Adult & Paediatric Spinal Injury Pathway (Following Primary Survey)

**Appendix 5**  
SW London & Surrey Trauma Network Adult & Paediatric Isolated Head Injury Pathway

**Appendix 6**  
SWLTN Blunt Abdominal Injury

**Appendix 6a**  
Pan Network Protocol for Abdominal Trauma

**Appendix 7**  
South West London & Surrey Trauma Network Pan Network Open Fracture Decision Tree

**Appendix 8**  
South West London & Surrey Trauma Network Pan Network Thoracic Injury Protocol

**Appendix 9**  
SWLTN Paeds Surgical Airways

**Appendix 10**  
SWLTN Adult Surgical Airways

**Appendix 11**  
SWLTN Paediatric Blunt Trauma

**Appendix 12**  
ASPH Elderly Red Flag (Head Injury)

**Appendix 13**  
ASPH Massive Haemorrhage Protocol
Appendix 14  SWLTN Radiology Image Transfer Protocol
Appendix 14a ASPH CT Trauma Protocol
Appendix 14b Interventional Radiology
Appendix 15 Unanticipated Difficult Intubation Strategies – “Call for Help”.
Appendix 16 ASPH Isolated Head Injury Pathway
Appendix 17 ASPH Multiple Injury requiring ITU patient placement
Appendix 18 ASPH Management of Elderly Trauma Patients
Appendix 19 ASPH Management of Spinal Injuries
Appendix 20 Repatriation Pathway for Major Trauma Patients
Appendix 21 & 21A Burns & Burns Pathways
Appendix 22 Terms of Reference
Appendix 23 Equality Impact Assessment
Appendix 24 Checklist for the Review and Approval of Documents
1. Introduction

1.1 Ashford and St Peter’s NHS Trust (ASPH) is a member of the South West London and Surrey Trauma Network (SWL&STN). The Network was established in 2010 in response to the NCEPOD report – Trauma: who cares which recommended that there be consistent and good quality care, in the most appropriate place, throughout the region for patients presenting with trauma related injury. St Peter’s Hospital (SPH) is a recognised trauma unit and has met the criteria established by the South East Coast Trauma Group in 2011. SPH receives trauma predominantly from South East Coast Ambulance Service (SECamb) and self-presentations. An increasing amount of our seriously injured patients with an Injury Severity Score of >15 are elderly fallers who do not appear as major trauma in the classical sense.

Major trauma is bypassed to the Major Trauma Centre (MTC) at St George’s Hospital (SGH) using a decision tree (See appendix 1). If a patient sustains multiple traumas and can be transferred to the MTC within 60mins they will be directly transferred via SECamb. However, if a patient arrives at SPH with multi-trauma or is in imminent need of resuscitation; once stabilised, they will be transferred to the MTC. Patients stable and suitable for our expertise will be admitted to St Peter’s under the care of the most relevant specialty.

2. Purpose

The policy provides a framework within the SWL&STN. This policy is made available to all staff as a reference guide and has direct links to other trust procedural documents, which contribute to the care of trauma patients.

3. Glossary

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLS</td>
<td>Advanced Trauma Life Support</td>
</tr>
<tr>
<td>CAG</td>
<td>Clinical Advisory Group</td>
</tr>
<tr>
<td>COE</td>
<td>Care of the Elderly</td>
</tr>
<tr>
<td>CSNPs</td>
<td>Clinical Site Nurse Practitioners</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>ETA</td>
<td>Expected Time of Arrival</td>
</tr>
<tr>
<td>IEP</td>
<td>Image Exchange Portal</td>
</tr>
<tr>
<td>ISS</td>
<td>Injury Severity Score</td>
</tr>
<tr>
<td>MTC</td>
<td>Major Trauma Centre</td>
</tr>
<tr>
<td>MDT</td>
<td>Multi-disciplinary Team</td>
</tr>
<tr>
<td>PCA</td>
<td>Patient Controlled Analgesia</td>
</tr>
<tr>
<td>SALT</td>
<td>Speech &amp; Language Therapy</td>
</tr>
<tr>
<td>SDU</td>
<td>Surgical Dependency Unit</td>
</tr>
<tr>
<td>SGH</td>
<td>St. Georges Hospital</td>
</tr>
<tr>
<td>SECAMB</td>
<td>South East Coast Ambulance Services</td>
</tr>
<tr>
<td>SPH</td>
<td>St. Peters Hospital</td>
</tr>
<tr>
<td>SWL&amp;STN</td>
<td>Southwest London and Surrey Trauma Network</td>
</tr>
<tr>
<td>TARN</td>
<td>Trauma Audit and Research Network</td>
</tr>
<tr>
<td>TDG</td>
<td>Trauma Delivery Group</td>
</tr>
</tbody>
</table>
4. Trauma Delivery Group (TDG)

Key Personnel
- Chief Executive/ Executive member
- Lead for transfer issues
- Clinical Lead for Major Trauma
- Deputy Clinical Lead for Major Trauma
- Clinical Leads for Elderly trauma, Orthopaedic, Paediatric
- Nursing Lead for Trauma
- Rehabilitation Lead
- Trauma Nurse Co-ordinator
- TARN Team
- Emergency Planning Lead

5. Local Management Process

The TDG meets on a monthly basis and has a multidisciplinary membership
For Terms of Reference (See appendix 22)
Meetings are minuted and distributed
Chair of the Group is the Clinical Lead for Trauma, supported by the Trauma manager

Membership
Chair
Executive Lead for Trauma (Director of Operations)
Consultant ED
Consultant Trauma & Orthopaedics
Consultant Surgery
Consultant Anaesthetics/ ITU
Consultant Radiology
Consultant Care of the Elderly
Rehabilitation Leads
Trauma Nurse Co-Ordinator
ED Nurse Lead
ED Senior Sister
Network Rep
PA (for minutes)
TARN Coordinator
SECAmb

This group discusses key actions relating to effective care of trauma patients presenting/admitted to ASPH. There is a designated MDT group who meet monthly to review patients presenting with an ISS>15 and any other trauma related governance issues including feedback from the clinical advisory group (CAG) trauma network meetings.
The MDT includes:

- Consultant Lead for Trauma
- Consultant in Emergency Medicine
- TARN Clinical Lead
- Consultant Trauma Surgeon
- Trauma Lead Nurse
- Consultant Vascular Surgeon
- Surgical Lead for Trauma
- Trauma Paediatric Lead
- Consultant Anaesthetist and Critical Care
- Care of the Elderly Trauma Lead Consultant
- Trauma Rehab Coordinator
- Speciality Governance leads

6. Trauma Team Activation Protocol

The below protocol is used to trigger activation of a Trauma call which will ensure emergency MDT assessment of all patients. (Criteria for activation can be found in appendix 2)

Trauma team (paediatric and adult) is activated by an ambulance pre-alert, or by activation of triage/first assessment in accordance with the above protocol.

Vital Signs

- GCS less than 13
- Pulse greater than 120 or systolic BP less than 90
- Respiratory Rate less than 10 or greater than 29

Injuries

- Flail chest
- 2 or more proximal long bone fractures
- Amputation proximal to wrist/ankle
- Penetrating trauma to head/neck/torso and extremities proximal to elbow and knee
- Limb paralysis
- Combination trauma with burn
- Major crush injury thigh/torso
- Major Head Injury

Mechanism of Injury

- Ejection from vehicle
- Fatality in same passenger compartment as trauma
- Pedestrian thrown of run over
- High speed collisions with suggestion of any of the above vital signs or injuries
- Major intrusion into passenger compartment
- Greater than 20 minutes extrication
- Falls greater than 6 metres
- Pedestrians run over or thrown from a horse
**Trauma Team Roles**

All team members must sign in on arrival to resus and only go when released by the Team Leader. The Trauma Team Leader (TTL) is an ED Consultant 08-20 7/7 and outside of these hours ED registrar of CT3+ and ATLS trained. There is a protocol in place to call the ED Consultant in the event of an out of hours Trauma presentation. Each member of the trauma team has delegated roles *(See appendix 3).*

7. **Imaging**

For Imaging protocols to MTC *see appendix 14*. The radiology department has full radiology capability, with access to digital radiography for instant viewing. Pan scans are used in the multi-trauma patient, and the CT radiographer is notified by bleep of a trauma call in order to ensure emergency access to CT. Radiology has a protocol for reporting of trauma scans and transferring images via IEP to the MTC *(See appendix 14a).*

Reporting out of hours is performed by medica. When a patient is to be transferred the whole images and report should be IEP’d across. Alternatively the report can be written in the patients notes (by a senior radiologist and where possible an image ‘burned’ to CD.

8. **Interventional Radiology IR:**

It is essential that IR is used for appropriate patients only ie splenectomies or to stabilise (as if appropriate) prior to MTC transfer. The surgical on-call Consultant will be responsible for the patients care so will need to ensure they are clinically competent to perform surgical intervention if/as required prior to transfer. *See appendix 14b+c for pathway management*

9. **Massive Haemorrhage Protocol**

In the event of a massive haemorrhage there is access to O neg blood in theatres, blood bank and maternity. The massive transfusion protocol includes the administration of tranexamic acid. *(See appendix 13)*

10. **Criteria for patient transfer to the Major Trauma Centre (MTC)**

Criteria for consideration of transfer of a trauma patient to the MTC from SPH

**Clinical Presentations:**

**Multisystem Injury**

- Head injury with face, chest, abdominal or pelvic injury
- Injury to more than 2 body regions
- Major burns with associated injuries
- Multiple, proximal long-bone fractures
**Central Nervous System**

**Head Injury**
- Penetrating injury or depressed skull fracture
- Open injury with or without CSF leak
- GCS Score <15 or neurologically abnormal
- Lateralizing signs

**Spinal Cord Injury or Major Vertebral Injury**

**Chest**
- Widened mediastinum or signs suggesting great vessel injury
- Major chest wall injury or pulmonary contusion
- Cardiac injury
- Patients who may require prolonged ventilation

**Pelvis/Abdomen**
- Unstable pelvic-ring disruption
- Pelvic-ring disruption with shock and evidence of continuing haemorrhage
- Open pelvic injury
- Solid organ injury

**Extremity**
- Severe open fractures
- Traumatic amputation with potential for re implantation
- Complex articular fractures
- Major crush injury
- Ischemia

**Comorbid Factors to consider**
- Age >55 years
- Cardiac or respiratory disease
- Insulin-dependent diabetics, morbid obesity
- Pregnancy
- Immunosuppression

**Secondary Deterioration (Late Sequelae)**
- Mechanical ventilation required
- Sepsis
- Single or multiple organ system failure (deterioration in central nervous, cardiac, pulmonary, hepatic, renal, or coagulation systems)
- Major tissue necrosis

The following transfer mechanism to SGH MTC will apply:
- The TTL at ASPH will have assessed the patient and using the “Criteria for Consideration of transfer of a trauma patient to the MTC from a Trauma unit” (see above) will contact the Consultant TTL at SGH to notify them of the patient presentation/clinical needs.
- The transfer will be organised in line with the Trauma Centre Transfer process/form
11. Referral to the Major Trauma Centres (MTC’s)

As soon as major injuries are suspected or identified the MTC should be contacted and immediate transfer organised. The TTL of the referring trauma unit hospital will:

a. Contact the MTC at SGH to speak to the Consultant TTL to notify them of the patient they will be receiving.
Information required by the Consultant receiving the call will include:
- Details of mechanism of injury
- Current physiological status
- Investigations performed and interventions undertaken prior to transfer.

b. Contact details: The referring hospital must provide the name of the Consultant Surgical/Orthopaedic on-call Consultants so the trauma patient can subsequently be repatriated at a suitable point in their treatment.

c. Transfer: The referring hospital will organise a blue light transfer with appropriate transfer personnel i.e. anaesthetist, nursing staff.

d. Bloods Results. The results of any blood tests and imaging that are available should be printed and sent with the patient.

e. Blood transfusions: If urgent blood products are needed for transfer (senior clinician decision at referring hospital) send O Negative. The referring hospital must alert the receiving hospital if a major haemorrhage protocol needs to be instigated.

f. Documentation: Copies of the ED notes. This includes the notes from the ambulance service.

NB: INVESTIGATIONS MUST NOT DELAY TRANSFER

g. Transfer documentation will be as per agreed protocols. (See appendix 1b)

h. The referring hospital will instruct the blue light ambulance to take the trauma patient to Resus Bay 1 in the ED at the MTC.

i. The referring hospital will telephone the ED to advise us of the time that the patient leaves and their approximate ETA.

12. Admission Criteria to TU & ongoing care (see also Transfer of care – definitive care levels -appendix 1a)

It is envisaged that the majority of major trauma patients with polytrauma will require transfer to SGH MTC and all will be discussed with the SGH TTL according to the network protocols. Following ATLS resuscitation those patients who do not meet the criteria for transfer (outlined above) will be referred to the appropriate specialty and admitted under an appropriate named consultant. It is expected this will be single system injuries (eg orthopaedic injury, abdominal injury, urological injury etc). Hence the admission will be via referral to the on call SpR of that specialty and be admitted at the decision of the TTL.

In the very rare circumstance that a patient with more than one system injury is not transferred to the MTC they will be admitted to a specialty decided by the TTL and according to the following guidelines:

- Specialty chosen according to the most life threatening injury or potentially life threatening injury first.
- Specialty chosen according to most limb threatening injury in the absence of potentially life threatening injury.
- Any patient requiring ventilation is to be admitted to ITU under the on call Intensive care specialist as the primary admitting consultant. A secondary admitting consultant to be identified depending on associated injuries.

12a. Isolated Head injuries requiring transfer see appendix 5. For patients not requiring neurosurgical intervention are to be managed under the medical team and should be placed in Cedar or COE ward. (See appendix 16)

12b. Thoracic injury (Sternum) patients will go under the care of the general surgeons. There pain needs will be met by the anaesthetists with the Consultant led pain team and thoracic epidurals in hours, and PCA’s and blocks in theatre as required out of hours. These patients will be admitted to SDU for PCA management. If there is lung involvement patients may require respiratory ward (Aspen) or a higher level bed base including level 2 + 3. (See also Appendix 8 for SWLTN Thoracic injury Protocol)

12c. Spinal Injury for patients requiring transfer see appendix 4. For those not requiring neurosurgical intervention should be cared for under trauma and orthopaedics on swan ward; where specialist physiotherapy and nursing support can be provided (see appendix 19)

12d. Paediatric Abdominal Trauma transfer protocol – Blunt & Penetrating (See appendix 11)

Paediatric patients not require MTC care are to be cared for on the paediatric ward under the shared care of the paediatricians and the most appropriate surgical specialty. (See also appendices 3, 4, 5 + 19)

12e. Surgical Airway (Paediatrics & Adult) including difficult Intubation Protocol - (See Appendices 9, 10 + 13)

12f. Open Fracture Decision Tree - see appendix 7

12g. Burns: see appendix 21

13. Elderly Care:

Patients not requiring secondary transfer where appropriate patients should be admitted to the Older Persons Short-stay Unit (OPPSU) for uncomplicated Older Persons Trauma for which head injury requires a short period of neurological observations (maximum 72 hours), and in whom there are no other significant long bone or complex traumatic bone injuries. (See appendices 12 – Red Flags, 16 & 18 – for patient placement). Long-stay patients will be managed with the Trusts neuro, and COE bed base.

14. Trauma Care Coordinators:

At each stage of the patient’s journey there will be an accountable clinical leads.
• **Orthopaedics** – there is a Trauma coordinator lead nurse responsible for the tracking of all inpatient, repatriation and planned activity

• **Surgical** care coordination is managed by the Emergency laparotomy lead Nurse

• **Medicine**: this role is managed by the Trauma Therapy Lead who will liaise closely with therapy colleagues to ensure medical patients with Traumatic brain Injury/Head Injury get to the right bed base, and receive the right care whilst waiting transfer

15. **Therapies:**

Acute therapy services are provided to all wards, Monday-Friday. Additional cover is provided at weekends:
- A respiratory weekend rota provides a service, 08.30-16.30 Saturday and Sunday, providing physiotherapy to acute respiratory patients and discharges as a priority. An on-call respiratory service is provided 7/7 16.30-08.30 for acutely unwell respiratory patients.
- Orthopaedic weekend physiotherapy service runs 08.30-16.30, Saturday and Sunday.
- Occupational Therapy cover is provided to A&E and AMU 08.00-17.00, Saturday and Sunday.
- OPSSU has therapy cover 08.00-18.00

Post-acute care rehabilitation will be provided at Woking & Walton Community Hospitals (for general rehab). If patients require neuro rehabilitation they will be referred to the Bradley Unit (BU) or may be transferred to Ashford Hospital - Wordsworth ward - WWW (stroke rehab). Where specialist rehab is required ie Stanmore/Putney patients will wait at ASPH prior to transfer. Where appropriate, patients will be transferred from SGH to Walton, Woking & Ashford. Coordination of this journey should be led by the therapists from SGH supported by the Trauma Therapy lead and Rehab coordinator at ASPH. Where patients require acute transfer (back to SPH) or specialist rehab (Inc Putney etc.) the therapy team will ensure patients rehab care needs are managed according to specialist need Inc. neuro etc (as per the Care coordinators role). The therapists will refer to the most appropriate rehab environment as per the SWLTN rehab – directory of services (according to specialist need)

15a. **Speech and Language Team** (SALT) and dietetics are available to patients through a referral system. This team provides specialist care for post Traumatic Brain Injury patients

16. **Discharge Documentation**

On discharge all patients receive a medical discharge summary transmitted to their GP via docman which should include a therapy handover. The discharge summary contains the 4 rehab questions which will be completed prior to transfer for all patients
17. Transfer of Care (Repatriation)

ASPH has signed up to the Network Transfer of Care Policy at Board level. There should be a pre-alert (received at 72 hours prior to transfer). The Clinical Site Nurse Practitioners (CSNPs) are notified at this stage. If there are delays in transfer, these are escalated to the Executive lead for trauma, and the TTL. NB: (See appendix 18 for Repatriation Pathway)

18. Governance and Risk Management

The Divisional Governance leads assist the Trauma lead clinician/group to maintain a governance log and risk register. The log consists of all trauma related incidents and is reviewed at the bi-monthly governance meetings & any key learning reviewed at the TDG.

Risk Register

A register where Datix incidents are logged and investigated on issues posing a threat to trauma in the trust. The risk register will be updated to ensure risks relating to the management of trauma patients are highlighted to the governance senior committee and board as appropriate

ISS>15 Reviews

A quarterly meeting lead by the Trauma Lead (supported by AHPs) reviews and presents those patients that stayed in or were transferred from the trust in order to ensure learning and identify training needs.

Governance meetings

Trauma M & M is discussed both in individual specialty M & M’s and in Trauma quarterly M & M meetings with MDT attendance. Any learning from these reviews is shared with divisions as appropriate and where necessary additional training provided

19. TARN

Trauma Audit Research Network (TARN) data is reviewed as well as individual patients at quarterly meetings. Areas of risk are highlighted to the TDG and actioned as part of on-going work-plan.

20. Training & Education

- Staff will be supported in the management/care of patients presenting with trauma related injury via:
- Mandatory ATLS (for appropriate personnel
- In house TiLs training for nursing staff including ED Trauma competencies is currently being reviewed by ASPH Clinical Practice Educators, supported by the Trauma clinical lead
21. Monitoring Compliance

- Bi-Monthly TDG meetings
- Quarterly Governance Committee Reporting
- Quarterly TARN meetings and national trauma network group

22. Dissemination, Implementation and Review

The Policy will be disseminated via the Trustnet and sent to all relevant clinicians involved in the management of Trauma within ASPH. The TDG meetings will be used to review TARN data in order to check compliance to policy, variation, new guidance and learning.
## South West London & Surrey Trauma Network

### Transfer Levels of Care Definitions for adults and children

**MTU**: Major Trauma Centre  
**TU**: Trauma Unit

<table>
<thead>
<tr>
<th>Type of transfer</th>
<th>Definition</th>
<th>Examples</th>
<th>Notes and actions</th>
</tr>
</thead>
</table>
| **TIME CRITICAL**                        | Needs to be transferred for immediate life or limb saving intervention. By definition has been undertriaged / self presented to a trauma unit or determined to be in need of immediate TU intervention in order to survive journey to MTC. | Uncontrolled haemorrhage, ischaemic limb, expanding intracranial bleed     | - These require the first available double manned ambulance, same priority as 999 call.  
- The initial ambulance may stay to transfer the patient onwards.  
- These are blue light transfers.  
- TU Team leader will have phoned MTC ED Consultant.  
- Require suitable escort with appropriate training from the TU defined by the patient's clinical need.  
- The escorting team/crew should pre-alert when approx. 15 mins away from MTC  
- Require re-Trauma Call in the MTC |
| **URGENT**                                | These patients need to be in the MTC. They are not in imminent danger of catastrophic event. They should be identified in the TU by the trauma team leader, who will refer the ED Consultant at the MTC. They will be transferred to the ED at the MTC where they will be re-trauma called. | Open fractures with no vascular or imminent limb threat. Stable children being transferred for observation in a paediatric surgical unit. | - TU Team leader will have phoned MTC ED Consultant.  
- The TU should inform the MTC when the patient is leaving and give an estimated time of arrival. If this changes then the clinicians will be contacted by the ambulance service Emergency Operations Centre.  
- Require suitable escort with appropriate training from the TU defined by the patient's clinical need.  
- These are not blue light transfers.  
- The ambulance should be booked for within 2 hours at the TU  
- These patients are received in the ED at the MTC |
| **SECONDARY TRANSFER**                    | These are stable trauma patients referred by an admitting team in the TU to a speciality team in the MTC. They will be isolated injuries in a body region with no element of life or limb threat | Stable Pelvis cases                                                          | - Non blue light transfers. These may be transferred through the Trusts PTS contract.  
- Transferring and Admitting teams should clearly hand over the case and document in the notes any pre-transfer plans.  
- May be transferred to a ward at the MTC and not the ED  
- Should be transferred to the MTC within 2 calendar days of acceptance.  
- The ambulance staff for these will be Band 2/3 ambulance care assistants capable of delivering oxygen and atropine. Higher clinical care will need to be supported by the Hospital trust by means of escorts. |

---

V3  May 2014  Author: Kelvin D Wright, Clinical Director, South West London & Surrey Trauma Network  December 2013
Appendix 1b

TRAUMA SECONDARY TRANSFER FORM (see transfer protocol)

To be completed by nurse or doctor in charge of patient

Please take two copies – One to accompany the patient, second copy for patient’s notes and third copy for secondary transfer box in resus.

Call MTC Consultant on call: 0208 672 1255

Bleep 8021/Majors Desk: 0208 725 1222

Sister’s Phone: 01932 722961

Ashford & St Peter’s Hospital Trust: A&E 01932 722961, Hospital 01932 872000

Time of Call to MTC & Consultant Name: ..............................................................
Name & Grade of Doctor referring & Contact No: ....................................................
The reason for requiring transfer:
Patient’s Name: .........................Sex: ........ D.O.B.: .............. Age: ........
Clinical Details:
 Mechanism of Injury: ...........................................................................................................................
 Relevant and time of event pre-hospital info: ..........................................................................................
 Primary Survey findings:
 A Intubation............. C-spine .......... Cleared / Immobilised
 B Resp rate ............ Sats .................
 C BP ....................... Pulse.................. Cannula - secured
 D GCS E......V.........M.............. /15 Pupils ...................
 E Temp ...... BM ...... Neuro/Vascular compromised limbs.................................
 ........................................................................................................ Tetanus Allergies

Summary of injuries: ..................................................................................................................
Meds/Fluids given: .......................................................................................................................
Imaging performed and Preliminary report:
Image Transfer: Image transfer via Image Exchange Portal
If appropriate check: Oxygen Blood Catheter Drains
Estimate departure time?.................................Hours
Name & Grades of Members Transfer Team..............................................................
Appendix 2

**CRITERIA FOR ACTIVATING TRAUMA TEAM**

**Mechanism of Injury**
- Ejection from vehicle
- Fatality in same passenger compartment as trauma
- Pedestrian thrown of run over
- High speed collisions with suggestion of any of the above vital signs or injuries
- Major intrusion into passenger compartment
- Greater than 20 minutes extrication
- Falls greater than 6 feet
- Roll over RTC
- Auto-pedestrian/cyclist greater than 20mph
- Pedestrian run over or kicked by horse

**Injuries**
- Suspected Flail chest
- 2 or more proximal long bone fractures
- Amputation proximal to wrist/ankle
- Penetrating trauma to head/neck/torso and extremities proximal to elbow and knee
- Limb paralysis
- Combination trauma with burn
- Major crush injury thigh/torso
- Major Head Injury

**Vital Signs**
- GCS less than 13
- Pulse greater than 120 or systolic BP less than 90
- Respiratory Rate less than 10 or greater than 29

*If in doubt, always refer the patient’s case to a senior ED Clinician*
Appendix 3

TRAUMA TEAM ROLES

Trauma Team Leader – ED Consultant/ Registrar (ST4 equivalent or above) (ATLS)

- Allocates Team Roles
- Informs team of expected patient and likely injuries
- Takes handover from Ambulance crew
- Receives information and disseminates information to and from team members
- Sets treatment priorities and investigations
- Liaises with other specialties/ MTC re secondary transfer
- Decides appropriate disposal of patient
- Signs off trauma booklet
- Co-ordinates communication with relatives
- Liaises with sister in charge regarding transport/ medical team for transfer
- eFAST scan if only trained person in team

Airway Doctor

Anaesthetic Reg (ATLS)

- Assesses and maintains airway -
- Maintains C spine control
- Talking role with patient
- Assesses “D” – GCS, pupils – informs team leader of findings
- Takes AMPLE history
- Performs RSI when indicated
- Identifies need for advanced airway protocol and ensures all help obtained
- Ensures analgesia given
- Advance vascular access
- Advanced monitoring if required
- Patient transfer if unstable/ intubated
Surgical SHO “B” doctor

- Assess breathing
- Needle decompression/ ICD insertion
- Liaises with radiology and requests imaging
- Assumes and helps role of circulation doctor if necessary

Surgical Registrar/ ED Registrar. Ortho Registrar (dependent on presence) “C” Doctor

- Examine abdomen and pelvis
- Assess for signs and source of shock
- Stops external bleeding
- Applies pelvic splint if required
- Ensures IV access
- Sends trauma blood set
- Liaises with blood bank for CODE RED
- Examines during log roll
- Catheterises
- Liaises with theatres

Orthopaedic SHO

- Identifies limb threatening injuries
- Reduces fractures/ applies splints
- Organises limb imaging
- Completes top to toe secondary survey

Nurse 1

Prepare equipment

- Monitoring
- Run through warm fluid
- Chest drain if suggested

Trauma Operational Policy Sep 2017.doc
• Pelvic binder
• Splints
  • Sign in all members of the trauma team with grade
• On patient arrival
• Remove clothing
• Attach monitors
• Bair hugger
• Temp
• Assist IV access
• Start infusions/blood products
• Give prescribed drums/e.g. analgesia
• Prepare for transfer e.g. notes etc
• Assist with catheter/art lines/drains etc

**NURSE 2**

Prepare as nurse 1
• Assist Nurse 1
• Shout out first observations asap to scribe
• Assist with procedures
• Keep talking to victim
• Runner
• Organise porter for CT and do transfers

**NURSE 3**

• Attend and coordinate staff/resources
• Give pre hospital info
• Ensure all team members present
• Ensure universal precautions/safety
• Support team
• Coordinate with team leader
• Help organise early transfer/liaise with CT/ITU etc
• Liaise with relatives early on
• Liaise with police/coroner

ADDITIONAL ROLES

Receptionist:
• Book patient in immediately on arrival

Radiographer:
• Trauma Series

CT Radiographer
• Perform appropriate scans

Radiologist:
• Liaise with team re appropriate imaging
• Swift reporting to team leader
• Alert interventional radiologist as required

Emergency Department Porter
• Take urgent bloods to labs
• Pick up blood products immediately when required
• Take patient to CT, theatres, ITU, ward

Blood Bank Technician
• Liaise with TTL/Surgical Registrar re blood products
• Activate CODE RED when requested and make available blood products immediately
Appendix 4

South West London & Surrey NHS Trauma Network

Adult & Paediatric Spinal Injury Pathway
(Following Primary Survey)

Polytrauma with spinal injury

Time critical transfer

Major Trauma Centre
St Georges Hospital
(Time critical transfer)

MTC to make referral to Spinal Cord Injury Centre

To arrange time critical transfers
St George’s Hospital:
Contact the ‘Floor’ ED Trauma Consultant 020 8672 1255—Bleep 8031 (Carried 24/7)
If not answered please ring MAJOR DESK ON: 020 8725 1222

Spinal trauma
(bony injuries) with no neurology

Local Trauma Unit
Orthopaedic team to treat definitively, UNLESS...

Dislocation
Unable to manage locally

Discussion with Major Trauma Centre and transfer if required
(See box below)

Minimal imaging required—imaging that delays transfer should not be done

Transfer using full spinal precautions with vacuum mattress where available

High dose steroids are not indicated

Always transfer if Local Trauma Unit does not have the capability to care for the injury

For Non-‘Time Critical Transfer’ Spinal Referrals
St George’s Hospital:
09.30–17.00: Contact Spinal Nurse Practitioner 020 8672 1255—Bleep 8999
Please consider discussing cases early with the spinal nurse practitioner
Out of Hours: Contact Neurosurgical Registrar 020 8672 1255—Bleep 7242

All referrals to go through www.syferapatient.org
The use of refer-a-patient does NOT replace direct contact with neurosurgeons for acute referrals
To speak direct call 020 8672 1255 - Bleep 7242 (neurosurgery registrar)

Revision 4.3, June 2017.
UKA
South West London & Surrey NHS
Trauma Network

Adult & Paediatric Isolated Head Injury Pathway

- Abnormal CT
  - Extradural or Subdural with midline shift (including bilateral subdural)
  - AND
  - Mechanism suggests trauma

Time critical transfer

Major Trauma Centre
St George’s Hospital (See Box 1)
Patient to be transferred to ED Resuscitation Room at St George’s

Box 1: For Time Critical Transfers
St George’s Hospital
Contact the “Floor” ED Trauma Consultant 020 8672 1255 - Bleep 8021 (Carried 24/7)
If not answered please ring MAJORS DESK on: 020 8725 1222
St George’s ED Consultant to inform Neurosurgeons

- A & B with C-spine control—
  Intubate if GCS ≤8 or agitated and needs CT.
  Use Rapid sequence induction and ventilate to $p_a CO_2$ of 4.5 to 5 kPa.

- Circulation—
  Keep mean ABP >90 mmHg.
  Maintain BP appropriate for age in paediatrics.

- Transfer using full spinal precautions with vacuum mattress where available.

Unsure clinically how to manage

Local Trauma Unit to contact neurosurgical registrar direct for advice (See Box 2)
Neurosurgical advice is to manage locally
Unable to manage locally

Transfer to Major Trauma Centre, ED Resuscitation Room

Box 2: For Non-Time Critical Transfer Referrals
Contact Neurosurgical Registrar 020 8672 1255 - Bleep 7242
If no response after 30 minutes then send to St George’s ED

Contact details:
ED Shop floor Consultant – 020 8672 1255 Bleep 8021 or Majors desk 020 8725 1222
Neurosurgical Registrar – 020 8672 1255 Bleep 7242
If unable to contact neurosurgical team then ring Neuro Intensive Care on 020 8725 4195 or 4196

Trauma Operational Policy Sep 2017.doc
Appendix 6

**Blunt Abdominal Injury**

- **Haemodynamically unstable**
  - FAST
  - Free fluid
    - Yes: Laparotomy
    - No: Continue resuscitation, evaluate other potential risks of shock, repeat FAST

- **Haemodynamically stable**
  - Reliable physical examination (PE)
    - Yes: CT
      - No: Admit for serial PE
    - No: Admit for serial PE
      - Yes: Laparotomy
        - Yes: Free fluid
          - No: Admit for serial PE
        - No: Solid viscus injury
          - Yes: Consider laparotomy or Intervention radiology
          - No: Consider nonoperative management
  - Abdo tenderness
    - Yes: Admit for serial PE
    - No: Laparotomy
  - Abdo wall contusion
    - Yes: Consider laparotomy or Intervention radiology
    - No: Consider nonoperative management
  - Equivocal findings
Penetrating Abdominal trauma

- Some penetrating abdominal injuries can be successfully managed non-operatively – “selective conservatism”
- The majority of gun shot injuries are best served by laparotomy.
- Laparoscopy in expert hands can be considered an option in a haemodynamically stable and low risk patient.
Appendix 7

**SWL&S Trauma Network - Open fracture decision tree**

*Version 1.1 October 2015*

- **Any patient with an open fracture (BOAST 4)**

  - **Does the patient have multiple fractures (>2) or multiple injuries [ISS >15]**

    - **No**

    - **Yes**
      - **ED to ED transfer direct to MTC**
      - **Via Major Trauma Pathway**

  - **Are there any of the following features:**
    - High energy mechanism (bone loss, major RTC, fall>2m)
    - Large wounds / soft tissue loss / degloving (i.e. clearly require definitive plastic surgery)
    - Neurological or vascular compromise
    - Severe contamination (marine, sewage, agriculture)

    - **Yes**
      - **ED to ED transfer direct to MTC**
      - **Via Major Trauma Pathway**

    - **No**

  - **Are there any of the following features:**
    - Periarticular fractures
    - Wounds >1cm which may need plastic surgical coverage after debridement (i.e. cannot achieve tension free closure)
    - Co-morbidities that may affect wound healing (Vascular disease, Diabetes)
    - Compartment syndrome

    - **Yes**
      - **Consider specialty to specialty transfer to MTC. Contact MTC orthopaedic team (SGH bleep 7439) prior to admission to local TU orthopaedic bed. ED to ED transfer if appropriate.**

    - **No**

- **Manage locally. Contact orthopaedic team at MTC if any concerns.**

- **If at primary debridement the injury is more significant than expected, apply external fixator and transfer urgently to MTC. Please do not definitively fix.**

---

Please note BOAST 4 refers to severe open fractures of the lower limb - including the foot and ankle.

If you have any concerns regarding the content of this document please contact alex.trompeter@stgeorges.nhs.uk
GUIDELINES FOR MANAGEMENT OF THORACIC INJURY (INC RIB FRACTURES) IN A TRAUMA UNIT

Trauma Patient in Emergency Department
Radiology: CXR +/- CT chest

Polytrauma
Stabilise & Transfer to MTC
ED to ED protocol

Rib injuries identified
Sternal fracture +/- significant chest wall injury
ECG, Troponin and cardiac monitoring

Severe associated soft tissue injuries:
Haemothorax
Lung contusions
Lung laceration
Diaphragmatic injury

Severe Rib Injury:
> 4 rib fractures
Flail segment
Complex rib injury

Minor Rib Injury:
Isolated chest injury
< 4 rib fractures
No rib deformity
Simple pneumothorax

Normal findings:
Admit to HDU
Repeat ECG and Troponin
12 – 24 hours

Abnormal findings:
Retrosternal haematoma. Will need an echo-cardiogram

Admit & Refer to Surgical team

Consider Transfer to MTC:
Discuss with Cardiothoracic Team

Consider if 3D surface images are required

Local Management of Thoracic Injuries:
Chest drains as appropriate
Admit to HDU. Cardiac monitor for central injuries
Analgiesia: Thoracic epidural / Intercostal block / PCA
Admission > 48 hours Liaise with Respiratory Physicians
Appendix 9  South West London & Surrey Trauma Network

Pan Network Policy for Surgical Airway in PAEDIATRICS

Introduction.
This policy describes the approach to emergency surgical airway (cricothyroidotomy) in children across the network. All stakeholders should adopt this policy though local variation depending on equipment is likely. Below the age of 10 years surgical airway is not an option and is replaced with needle cricothyroidotomy. Above the age of 10 years then a surgical cricothyroidotomy may be attempted by a skilled operator using the technique described in the adult policy. Only needle cricothyroidotomy is described below.

Indications.
- Needle Cricothyroidotomy is indicated when access to the airway is required and the orotracheal route is not available in the under 10’s.
- It is an option in a ‘can’t intubate, cant ventilate’ scenario

Equipment.
Skin prep and sterile gloves
Cannulae and syringe
Interface for Oxygen source and cannula

Technique.
1. Don sterile gloves and clean the area
2. Locate the cricothyroid membrane by palpating the Adam’s apple and feeling down with a finger until the membrane is located.
3. Using a catheter over needle device attached to a syringe puncture the membrane and aspirate air to confirm placement.
4. Slide the cannula in a caudal direction and remove the needle assembly
5. Re-aspirate air to confirm placement
6. Connect to oxygen source and valve assembly
7. Maintain a flow rate of the child’s age in years as litres per minute and allow the valve to be closed for 1 second and open for 4 seconds.
8. If using commercial equipment eg ‘Manujet’ follow the flow guidelines included with that equipment.

Variations: some commercial sets are available. If this is not available then improvisation as below will be needed.

After care.
- Do not let go of the cannula.
- This airway will last for approximately 15-20 minutes and bridges the gap for senior help to arrive
Appendix 10

South West London & Surrey Trauma Network Pan Network Policy for Surgical Airway in ADULTS

Introduction.
This policy describes the approach to emergency surgical airway (cricothyroidotomy) in adults across the network. All stakeholders should adopt this policy though local variation depending on equipment and training is likely.

Indications.
- Cricothyroidotomy is indicated when access to the airway is required and the orotracheal route is not available.
- It is the definitive option in a 'can't intubate, can't ventilate' scenario

Equipment.
- Skin prep and sterile gloves
- Local anaesthetic infiltration, syringe and needle
- Scalpel (No.10 blade)
- Tracheal dilator forceps
- Paediatric bougie
- Size 5.5 or 6.0 cuffed endotracheal tube and 10mls syringe

Technique.
1. Don sterile gloves and clean the area
2. In a conscious patient and if time allows, infiltrate the neck either side of the larynx with Lignocaine 1% using a syringe and green needle. This should take approximately 5-7 mls either side.
3. Locate the cricothyroid membrane – feel the Adams apple and slide the finger down in the midline to feel the dip.
4. Fix the larynx with the non scalpel hand and pierce the cricothyroid membrane with the scalpel. This should be a one stab, horizontal incision through skin and the membrane. Keep the scalpel in the hole.
5. Extend the incision either side to a total width of approximately 8-10 mm
6. Insert the tracheal dilator into the incision as marked by the scalpel.
7. Remove the scalpel
8. Dilate the hole
9. Insert the bougie, gently allowing it to enter the trachea to at least 10 cm
10. Railroad the ETT over the bougie. Take care not to over insert and intubate the right main stem. Do not let go of the ETT at this time.
11. Inflate the cuff with a 10 mls syringe
12. Remove bougie and connect to ventilator or oxygen source.
13. Secure the tube in place
14. Continue with primary survey

Variations: some commercial sets are available and a size 6.0 tracheostomy tube may be substituted for the endotracheal tube. Version 1.0 January 2016
After care.
Once the ETT is secure it can be managed as any other cuffed tube in the airway. It will be substituted for a formal tracheostomy when the patient’s clinical condition allows.
Appendix 12

Red Flag for Elderly Trauma Patients

(To support early identification of Head injury in elderly patients)

- History of recent falls
- On warfarin/anticoagulants
- And/or reduced GCS
- Bleep 5071 (8-4pm)

Liaise with a senior ED or medical Dr (if on AMU) immediately, to assess whether patient requires urgent CT to rule out cerebral bleed or injury.

CT should be requested within 1 hour from time of arrival.
Appendix 13

ASPH - Massive haemorrhage including Transemic Acid Infusion Protocol

39.9 MASSIVE HAEMORRHAGE FLOWCHART

INITIAL STAGE (first 30-45 minutes)

CLINICAL TEAM

1. Call 2222 and state ‘MASSIVE HAEMORRHAGE’ in (insert location)
2. Clinical Communication Lead (CCL) chosen; ring blood bank and communicate throughout.
   ASPH x 6026
3. Take appropriate samples and send to lab: XM (pink top) plus FBC, Clotting, U&E and Calcium.
4. Avoid hypothermia (use fast flow fluid warmer early)
5. Transfuse emergency O RhD negative blood (O RhD positive blood can be given to men and women >60 yrs in emergencies) if not possible to wait and/or:
   - Group compatible (15 min)
   - Crossmatched (45 min)
   - FFP (30 min): defrosted; use within 24 hours.
6. For adult patients: consider 1g tranexamic acid in 100mL saline as IV bolus over 10 minutes.

LABORATORY

Pack A

1. Lab to issue/defrost once spoken to CCL:
   - 6 units of red cells (RBC)
   - 4 units of Fresh Frozen Plasma (FFP)
   - 1 pool of Platelets (PLT)
2. Other orders if indicated (led by clinical team)
3. Process blood tests

Pack B (if ongoing haemorrhage)

4. Lab to issue/defrost once spoken to CCL:
   - 6 units of Red cells (RBC)
   - 4 units of FFP
   - 2 pools of cryoprecipitate
5. Other orders if indicated (led by clinical team)

ONGOING UNCONTROLLED BLOOD LOSS

7. Repeat blood tests: FBC, clotting including Fibrinogen, U&E, Calcium.
8. Adjust product requests according to results, aim to keep:
   - Hb > 80g/L
   - PT, APTT ratio <1.5
   - Fibrinogen >1.0g/L
   - Platelets> 50-75x 10^9/L

NOTE: DIC is exacerbated by hypothermia, acidosis and shock

6. Adjust products according to results, aim to keep:
   - Hb > 80g/L
   - PT, APTT ratio <1.5
   - Fibrinogen >1.0g/L
   - Platelets>50-75x 10^9/L

Blood product requests at this stage are led by the clinical team – no standard combination of blood products will be issued.

7. Consider recombinant factor VIIa (Novoseven)
   90g/kg, ideally given after Platelets and cryoprecipitate have been given. Requires discussion with haematology consultant.

PLEASE INFORM THE LAB STRAIGHT AWAY IF THE PATIENT’S CIRCUMSTANCES CHANGE TO AVOID WASTAGE OF BLOOD PRODUCTS AND TO CONFIRM LAB STAND DOWN

<table>
<thead>
<tr>
<th>ASPH Blood Transfusion Policy</th>
<th>Current version is on the intranet</th>
<th>First ratified</th>
<th>Review date</th>
<th>Issue No.</th>
<th>Page 92 of 139</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12.02.14</td>
<td>February 2017</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Trauma Operational Policy Sep 2017.doc
South West London & Surrey Trauma Network
Radiology Image Transfer Policy

This document aims to set standards for radiology image transfer for the South West London and Surrey Trauma Network.

This policy has been approved by the Network Clinical Advisory Group and ratified by the Board.

Adherence will be monitored via the clinical governance log.

Standards of care.

1. A written radiology report will accompany all trauma patients having been transcribed into the trauma booklet or printed direct from the referring institution radiology system.
2. A Trauma pro-forma (tick box) form may be part of this report but since it is designed to point out gross findings only, it is not acceptable as the report in total.
3. The written copy should have a name of the reporting radiologist clearly documented.
4. A means of contacting that doctor for clarification should also be provided eg. mobile number, via switchboard or via designated bodies such as Nighthawk.
5. All images will be transferred with a report via IEP to enable merging with PACS at the major trauma centre.
6. When the patient leaves prior to the report being ready ie emergency transfer then a report will still be issued in accordance with 1-4 above and sent via IEP as soon as it is prepared.

Author:
Kelvin D Wright, Clinical Director, South West London & Surrey Trauma Network
Date Jan 2014  Review Jan 2017
Appendix 14a

ASPH CT Trauma Protocol

- The Priority bleep for stroke and trauma calls is kept in the CT control room at all times. The CT team are alerted to all stroke and trauma calls prior to the patient arriving in ED or by the ED team instigating a priority call when the patient has already arrived in ED.

- The CT request for a scan is generated by the trauma team in ED. When the patient is ready to have a scan, ED staff alert CT that the patient is en-route. 5 minutes notice must be given.

- The CT team complete the scan being performed and immediately prepare the room for receiving the patient.

- The patient is scanned according to the trauma protocol.

Out of hours scans are immediately sent to MEDICA (Group C protocol) and the radiographer telephones Medica to state the scan has been performed. (Medica will contact ED with the report).

In Hours (8am-8pm Mon to Fri and 9am-5pm Sat and Sun) the CT Radiography Department Assistant informs the ED/IP CT Radiologist that a trauma patient has been scanned. If the dedicated Radiologist is not available then the Hot Seat Radiologist will be asked to report the scan. These reports take priority in all cases.

- The Radiologist assesses the scan for immediate life threatening injuries, active bleeding/ tension pneumothorax/ airway obstruction etc and communicates directly with the ED department on ext 2141. This must be documented in CRIS.

- The final report will be available (verified) on CRIS and PACS within 1 hour of the scan.

Trauma Image Transfer/Retrieval for St. George’s Hospital

Sending from PACS (Radiographers and Radiologists)

- Find patient in PACS on the patient lookup page
- Right click on any of the patient’s studies
- Select Export via Dicom
- Tick all relevant studies for sending and click next
- Choose St. George’s Hosp. London (direct link) & choose St. George’s Hospital (direct route via IEP)
- Click Next and STAT

*NOTE*: At STG Images must be searched for by patient name NOT hospital number

Trauma Operational Policy Sep 2017.doc
Sending from the IEP dashboard (Radiographers)

- Log into IEP via https://nww.iepservice.nhs.uk
- Place the mouse over ‘Transfer’ and click on New Transfer.
- Institution names are in alphabetical order, but when used regularly a hospital will appear near the top of the list.
- Complete all the yellow boxes- Surname, Name, DOB, Gender and Hospital number- Where possible, provide NHS number. Click on Submit.
- A list of the patient’s events will appear. Select studies required.
- Choose the ‘blue light’ method-this ensures the study is given priority.
- Click send and then click send again.
- *NOTE*: At St Georges, Images must be searched for by patient name NOT hospital number

External Login to PACS from St. George’s Hospital (for St. George’s Drs)

- Our A&E clinician calls St. George’s for an urgent review and provides the St. George’s clinician with today’s PACS password (found in a folder at the nurses station in Majors)
- St. George’s clinicians log in via https://webpacs.asph.nhs.uk making sure to select “iSite” (not asph) in the box below the password
Appendix 14b

TRAUMA UNIT INTERVENTIONAL RADIOLOGY (IR) –
PROTOCOL FOR INTERVENTION/NON-INTERVENTION

Trauma Units (TUs) should consider IR for single organ trauma related injury including:

- Splenic bleeder
- Renal trauma (for embolization only) – not nephrectomy.
- Liver trauma – embolization only otherwise refer to nearest liver unit/MTC
- Pelvic bleed (following #)

**NB:** Patients should be managed with a TU only for isolated single organ trauma injury or where stabilisation if required prior to secondary transfer to MTC. Consideration to IR cover 24/7/surgical competency must always be considered.

**NB:** Discussion with the MTC is recommended at all times.

**Internal Patient Management:**

Aftercare for patients following IR needs to be agreed. Whilst awaiting appropriate bed allocation patients should be transferred to theatre recovery.
Appendix 14c

**Interventional Radiology Pathway**

**Single Organ Trauma** → **Diagnostic CT**

Patient able to be managed in TU:
- Spleen
- Renal
- Liver
- Pelvic Bleed

**YES**
- IR Cover & Consultant Surgeon Competent
  - **YES**
  - Liaise with:
    - On-call Consultant Surgeon
    - IR Consultant
  - **NB**: ensure appropriate bed allocation

**NO**
- Contact MTC for Advice:
  - Consider IR stabilisation if appropriate
  - Transfer patient to MTC as per secondary transfer protocol
**Appendix 15**

**Unanticipated Difficult Intubation Strategy – ‘Call for help’**

<table>
<thead>
<tr>
<th>PLAN A:</th>
<th>Elective intubation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rapid Sequence Induction</td>
</tr>
</tbody>
</table>

- **Plan:** Positioning, Bougie, McCoy, Airtraq/Pentax

<table>
<thead>
<tr>
<th>PLAN B:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

- **Plan:** cLMA, pLMA, iLMA, plus fibreoptic, Aintree and ETT 7.0

<table>
<thead>
<tr>
<th>PLAN C:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygenate and ventilate</td>
</tr>
<tr>
<td>Wake patient up</td>
</tr>
</tbody>
</table>

- **Plan:** Facemask, oro-/nasopharyngeal, cLMA, pLMA, iLMA

<table>
<thead>
<tr>
<th>PLAN D:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can’t intubate, Can’t ventilate</td>
</tr>
</tbody>
</table>

- **Plan:** Quicktrach, Manujet and jet ventilation catheter, Surgical airway
Appendix 16

HEAD INJURY - PATIENT PLACEMENT Acute Presentation (Not requiring transfer to SGH)

Patient presents to ED with Head Injury

MTC confirm patient should be managed at ASPH

Critical care bed required?

Yes

NO

Site Team (Medical) 5299 Informed

Patient transferred to CC bed

Bed Available within Non-ring fenced beds?

Yes

Patient Transferred

No

Site to review option COE ward (Swift/Holly) dependent

Neuro Therapist Informed (by outlying ward therapist) in order to ensure appropriate therapy/transfer to Cedar/Neuro rehab as/if appropriate

Trauma Operational Policy Sep 2017.doc
Appendix 17

MANAGEMENT OF MULTIPLE INJURIES REQUIRING ITU

NB: Patients with Trachys must be managed within a critical care bed or Aspen ward

ED Multiple Trauma Presentation → ED Discuss with MTC → Accepted → Yes

Patient transferred to SGH

Patient transferred to surgical ward (if abdo involvement with Ortho input) or to Trauma and Ortho ward.

No → Critical Care bed required

Patient transferred to CC bed under care of Intensivists

Yes → NO
Appendix 18

MANAGEMENT OF ELDERLY TRAUMA PATIENTS

1. ED Elderly Trauma Presentation → ED Discuss with MTC → Accepted
2. Critical Care bed required?
   - Yes → Patient transferred to SGH
   - No → Patient transferred to trauma and orthopaedic ward c/o Orthogeri team
   - YES → Patient transferred to Critical Care bed
MANAGEMENT OF SPINAL INJURIES

ED Spinal Injury → ED Discuss with MTC → Accepted

Yes:
Patient transferred to SGH

No:
Patient transferred to trauma and orthopaedic ward (Swan)

NB: In-reach from other specialities if/as required
Appendix 20

REPATRIATION PATHWAY FOR MAJOR TRAUMA PATIENTS

Patient Ready for Repatriation

MTC Contact Site Team (ASPH) to repat patient

MTC to inform Trauma Therapy Lead 8829

Patient requires general Rehab

Specialist neuro Physio to liaise with Rehab coordinator to transfer pt to WWW or community bed

Delay in transfer back?

Patient requires acute repatriation

MTC Site Manager to contact ASPH site manager

MTC Clinician Contact – Appropriate Speciality Team to accept patient

Patient placed in SR on appropriate speciality ward. (If no SR place on MSSU for CPE screening prior to transfer to speciality bed)

Patient requires acute repatriation

MTC Site Manager to contact ASPH site manager

Patient placed by Site Team According to Clinical Need

In reach from specialist therapy

TBI

Cherry Ward or COE Bed c/o Medicine

Multiple Injuries

Trauma & Ortho Bed or Surgical if Sign Significant Abdo Involvement

Spinal Injuries & Elderly

Trauma & Orthopaedics

Elderly Trauma

COE Bed or Ortho geri (if no neuro involvement)
## Appendix 21 Burns Referrals

### Burn Referral Guidelines: Criteria for Referral

**Adults and children with the following injuries should be discussed with the local Burn Service**

**Cause**
- Inhalation injury
- Deep dermal and full thickness
- Electrical
- Chemical
- Burns with trauma

**Affected Area**
- Face, hands, genitals, feet, joints, scalp, ears
- Circumferential

**Size**
- >1% Total Body Surface Area (TBSA) in children
- >3% TBSA in adults

**Age**
- Neonates (<28 days old)

**Wound**
- Not healed within 2 weeks
- Infected

**DISCUSS**
- Suspected non accidental injury, mental health history or self-harm
- Progressive non burn skin loss conditions (TENS, SSSS, Necrotising Fasciitis)
- Significant co-morbidity (eg diabetes) or immunocompromised patients
- Friction burns with full thickness skin loss
- Cold burns with full thickness skin loss
- Older people (60+)
- Children "unwell" with a burn (see below)*
- Any other case that causes concern

---

*Toxic Shock Syndrome / Burns Sepsis Syndrome*
Seek early advice from local Burn Service
Consider treating with fluid resuscitation, IV antibiotics +/- FFP

---

### MEDICAL EMERGENCY

Any patient
Any size burn
Any of these symptoms
= Risk of Toxic Shock Syndrome

- Temperature > 38°C
- Rash
- Diarrhoea and vomiting
- General malaise
- Not eating or drinking
- Tachycardia/tachypnoea
- Hypotension
- Reduced urine output

---

If in doubt, seek early advice from local Burn Service
Telephone support and advice on initial care of any patient with a burn injury is available at all times
**Burns Transfer Form**

For burn injuries in Adults > 16 & Children (Birth -16) A early consultation with the local Burn service is advised.
Send Burn Referral Form via TRIPS or Fax Burn Transfer Form to the accepting Burn Service and send a copy with the patient.

### Referral Information

| Referral Date: |  /  / |
| Referring DR: |  |
| Time: |  : |
| Referring Hospital: |  |
| Phone No: |  |
| Fax No: |  |

### Patient

| Name: | M / F |
| DOB: |  /  / |
| Weight: | kg |

**Past Medical History:**

1. Allergies/medications/alcohol/substance misuse/psychiatric/other

### Tetanus Cover

Y / N

**Safeguarding concerns/action taken:**

### Next of Kin/Parental responsibility:

| Relationship: |  |
| Phone No: |  |

### Home Postcode:

| GP Details: |  |

### Burn Injury

| Injury Date: |  /  / |
| Injury Time: |  : |
| ED Arrival Date: |  /  / |
| ED Arrival Time: |  : |

**FIRST AID:**

1. Cool burn wound with cool compresses for 10 minutes within 1hr of injury

### What happened:

### Airway/Breathing

<table>
<thead>
<tr>
<th>RR</th>
<th>FIO2</th>
<th>SaO2</th>
<th>COHb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Cervical Spine Immobilised: Y / N
- Spine cleared: Y / N by (Name/Grade)
- Suspected Inhalation Injury: Y / N
  - Voice changes, upper airway oedema, deep facial burns, sooty syrinx, history of burns in enclosed space
- Bronchoscopy confirmation: Y / N
- Senior Anaesthetic Review: Y / N (Name/Grade)
- Cyanosis: Y / N
- Intubated: Y / N
  - ET tube: Inserted intubation tube
  - Tracheostomy: Grade of intubation I, II, III, IV
- Tracheal Tube Size: ______ Cuffed or Uncuffed
- ETT length at teeth: ______ cm
- Tube ties secured: Y / N

**Laryngoscopy Findings:**

1. Cosmetic need for tracheostomy in circumferential burns/chain/burns/sack
2. Shroud patients with facial burns, if able

### Circulation

<table>
<thead>
<tr>
<th>BP</th>
<th>HR</th>
<th>Cap Refill</th>
<th>Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>sec</td>
<td>°C</td>
</tr>
</tbody>
</table>

- ECG
- Drug/Tox Screen
- Bloods
- ABG

**Blood Tests**

| Urea mmol/L | pH |
| Creatinine mmol/L | pO2 kPa |
| Na+ mmol/L | pCO2 kPa |
| K+ mmol/L | HCO3 mmol/L |
| CRP mg/L | BE |
| Hg g/dL | HCT % |
| WCC x 10^9/L | Lactate mmol/L |
| Platelets x 10^9/L | Glucose mmol/L |
| CK u/L | CO2Hb |

### Urinary catheter / NG tube

**Trauma Operational Policy Sep 2017.doc**
Appendix 21A

BURNS PATHWAY

Burn >20%

Longer transfers
Sent to service nearer MTC rather than to patient’s home

Transfer to MTC

Transfer to Burns Service

No MTC has on site burns team
Patient journey often longer

LSEBN ODN Meeting June 2017
Attachment 03
Burn >20%

- Transfer to TU
- Transfer to MTC

- Beds NOT available in Burns service
- Specialist Burns service requirements

Burns Bed Bureau

Transfer to distant Burns Service
Appendix 22

TRAUMA Delivery GROUP
Terms of Reference

Constitution

Clinical Governance Committee: to ensure robust clinical governance review process are in place for all trauma patients, managed with ASPH or transferred out to the Major Trauma network. Trauma Care Delivery Group: to ensure adherence to recommended best practice trauma pathways thereby ensuring effective clinical outcomes for all patients

Authority

The Group is authorised by the committee to investigate any activity within its terms of reference. It is authorised to seek any information it requires from any employee and all employees are directed to co-operate with any request made by the Group.

Membership

Clinical Lead for Trauma – Orthopaedic Consultant
Accident and Emergency Clinicians – Consultant & Registrar (Adult & Paeds)
Accident and Emergency Department - Matron & Senior Nurse (Adult & Paeds)
Service manager Accident and Emergency
Resuscitation officer
Operating Department Practitioner
SECAMB representative
Clinical Governance Manager
Paediatric representation
Trauma and Orthopaedics - Matron/Trauma lead nurse
Ortho-geri/COE lead Consultant
Therapy lead
EPLO Lead
Management Support
TARN auditor

By Invitation

Consultant Orthopaedic Surgeon
Consultant Surgeon
Consultant Anaesthetist
Trauma Surgeon
Radiologist
Bed Management (for patient pathway/repatriation management)
Quorum
Meeting can only go ahead with 6 or more members are present.

Frequency and Conduct
The group will meet monthly for 1.5 hours for the first 6 months, from March to August 2016. Thereafter meetings will be bi-monthly

Function
- The development and implementation of strategy, operational plans, policies, regarding management of trauma patients, including Paediatrics
- Review of recommendations of the TARN data and quarterly reports and implementation of quality improvements.
- Review of individual cases and the dissemination of learning through quarterly trauma forum and presentation at divisional Educational Half Days
- Review of the Hot Trauma Transfer arrangements as per Trauma Network Guidelines
- Ensure there is a patient perspective and measure patient and carer experience

Key Responsibilities
- Improvement of the management of trauma patients and implementation of the trauma network guidelines.
- Identification and implementation of training recommended from the London Trauma network.
- Monitoring of national and local guidelines.
- Fulfillment of Trauma Unit designation criteria.
- Evidence of effective governance and risk management processes
- Evidence of inpatients/transfer of care pathways
- Structured action plan for reviewing trauma governance/risk management
- Evidence of training methods and log of training needs analysis/evidence

Reporting Lines
Local Trauma Network Meeting
Reporting progress as part of emergency Medicine Clinical Governance Report twice yearly
Clinical Advisory Group (CAG)
Quality Performance & Governance Committee – (QPGC)
### Appendix 23  
#### EQUALITY IMPACT ASSESSMENT

**Name and title:** Trauma Operational Policy

**Background**
- Who was involved in the Equality Impact Assessment: Trauma coordinator & TDG

<table>
<thead>
<tr>
<th>All Multi-disciplinary staff involved in the care of patients including:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Executive Lead for Trauma (Director of Operations)</td>
</tr>
<tr>
<td>• Consultant ED</td>
</tr>
<tr>
<td>• Consultant Trauma &amp; Orthopaedics</td>
</tr>
<tr>
<td>• Consultant Surgery</td>
</tr>
<tr>
<td>• Consultant Anaesthetics/ ITU</td>
</tr>
<tr>
<td>• Consultant Radiology</td>
</tr>
<tr>
<td>• Rehabilitation Leads</td>
</tr>
<tr>
<td>• Trauma Nurse Co-Ordinator</td>
</tr>
<tr>
<td>• ED Nurse Lead</td>
</tr>
<tr>
<td>• ED Senior Sister</td>
</tr>
<tr>
<td>• Network Rep</td>
</tr>
<tr>
<td>• TARN</td>
</tr>
<tr>
<td>• SECAmb</td>
</tr>
</tbody>
</table>

This Policy has been developed in order to ensure strong governance/clinical procedures are in place to facilitate immediate life and limb saving care to all trauma patients. Clinical protocols are used which have been tested both nationally and locally to ensure standardisation for care delivery to all Trauma patients irrespective of age, gender, ethnicity or religion.

**Conclusion**
The Trust Board at ASPH recognise the value of delivering trauma services as part of the network and the benefits this brings the local population. As part of the trusts contribution to the network it is committed to maintaining the local trauma unit in the Emergency department on the SPH site ensuring continued delivery of high quality, safe and compassionate care.

**Recommendations:**
To ensure that changes practice/learning from audit etc are reflected in policy update and staff are appropriately trained and competent to deliver standardised care as per the SWLTN delivery standards.
### CHECKLIST FOR THE REVIEW AND APPROVAL OF DOCUMENTS

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

**Title of the document:** Trauma Operational Policy  
**Policy (document) Author:** H Cannon & C. O’Brien  
**Executive Director:** L. Knight

<table>
<thead>
<tr>
<th></th>
<th>Yes/No/Unsure/NA</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Title</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the title clear and unambiguous?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Is it clear whether the document is a guideline, policy, protocol or standard?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td><strong>2. Scope/Purpose</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the target population clear and unambiguous?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Is the purpose of the document clear?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Are the intended outcomes described?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Are the statements clear and unambiguous?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td><strong>3. Development Process</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there evidence of engagement with stakeholders and users?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Who was engaged in a review of the document (list committees/individuals)?</td>
<td>Trauma network and local groups</td>
<td></td>
</tr>
<tr>
<td>Has the policy template been followed (i.e. is the format correct)?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td><strong>4. Evidence Base</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the type of evidence to support the document identified explicitly?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Are local/organisational supporting documents referenced?</td>
<td>yes</td>
<td>As per the Major Trauma Network guidelines</td>
</tr>
<tr>
<td><strong>5. Approval</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the document identify which committee/group will approve/ratify it?</td>
<td>Yes</td>
<td>TEC</td>
</tr>
<tr>
<td>If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td><strong>6. Dissemination and Implementation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there an outline/plan to identify how this will be done?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the plan include the necessary training/support to ensure compliance?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td><strong>Process for Monitoring Compliance</strong></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Are there measurable standards or KPIs to support monitoring compliance of the document?</td>
<td>Quarterly Trauma Network meeting and TARN database</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8.</th>
<th><strong>Review Date</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the review date identified and is this acceptable?</td>
<td>yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9.</th>
<th><strong>Overall Responsibility for the Document</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Is it clear who will be responsible for coordinating the dissemination, implementation and review of the documentation?</td>
<td>yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th><strong>Equality Impact Assessment (EIA)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Has a suitable EIA been completed?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Committee Approval (insert name of Committee)**
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner

**Name of Chair** | **Date** | **July 16**

**Ratification by Management Executive (if appropriate)**
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner

**Persons Consulted:**

Executive Lead for Trauma (Director of Operations)

- Consultant ED
- Consultant Trauma & Orthopaedics
- Consultant Surgery
- Consultant Anaesthetics/ITU
- Consultant Radiology
- Rehabilitation Leads
- Trauma Nurse Co-Ordinator
- ED Nurse Lead
- ED Senior Sister
- Network Rep
- PA (for minutes)
- TARN
- SECAmb

**Supporting References / Evidence Base:**

- National Trauma Unit guidelines 2012
- National Trauma Network 2011
- Major trauma Network guidance 2011
- National Trauma Network Strategy 2016