

Best of Both Worlds



**Scottish
Ambulance
Service**
Taking Care to the Patient

Pete Thomson
Advanced Practitioner
Pre-hospital Critical Care



Preliminary analysis of the care of injured patients in 33 British hospitals: first report of the United Kingdom major trauma outcome study

D W Yates, M Woodford, S Hollis

BMJ, 26 SEPTEMBER 1992

***Conclusions*—The initial management of major trauma in the United Kingdom remains unsatisfactory. There are delays in providing experienced staff and timely operations. Mortality varies inexplicably between hospitals and, for blunt trauma, is generally higher than in the United States.**

Organization of trauma care in the UK

J Templeton FRCS S Bickley MA

J R Soc Med 1998;**91**:23-25

SECTION OF ORTHOPAEDICS, 1 OCTOBER 1996

Changing the System - Major Trauma Patients and Their Outcomes in the NHS (England) 2008-17

Christopher G. Moran ^a, Fiona Lecky ^b, Omar Bouamra ^c, Tom Lawrence ^c, Antoinette Edwards ^c, Maralyn Woodford ^c, Keith Willett ^d, Timothy J. Coats ^{e,*}

This paper suggested in the first 5 years, survival from major trauma had increased by 19%!!!

SAVING LIVES. GIVING LIFE BACK.

Dr Catherine Calderwood
Chief Medical Officer
National Trauma Network Implementation Group
January 2017



Save 40 lives a year

Improve outcomes for
2000 major trauma
patients, 4000 severely
injured

Potential saving of £300-
400million in terms of
lost economic output

STN STAKEHOLDERS

- SC
- CMO
- Ministers
- MSPs
- Board Chief Execs
- Media
- Patients
- Clinicians/ NHS staff

STN STAFF

- Network Manager
- Clinical Lead
- Admin Support

STN STEERING GROUP

- To improve quality of trauma care by:
- monitoring and evaluation of standards/ QPIs
 - Establish network resources needed
 - Identify and deliver network priorities
 - Deliver detailed and fully costed network plans

STN MEMBERSHIP

- Clinicians and planners from each of the 4 regions and SAS
- NSD rep'
- STAG rep' / Data Support
- SC rep?
- PH rep'?

STN WEBSITE

- Talking Heads
- Public/ Professional facing Web-Based Resource
- Ethos and Public info
- Pathways and SOPs Data
- Network Performance reports
- All network Recruitment/ vacancies

**SAVING LIVES.
GIVING LIFE
BACK.**



**SCOTTISH
TRAUMA
NETWORK**

STAG

- Trauma data collection
- development and maintenance of KPIs
- Monitoring, evaluation and Reporting

SCOTTISH AMBULANCE SERVICE

- Single governance of all prehospital trauma care
- Trauma desk
- Paediatric Lead
- Training
- Protocols
- ScotSTAR
- BASICS/ PHEM
- Medici
- Trauma Critical care

WEST OF SCOTLAND TRAUMA NETWORK

- Regional SM
- Regional Clinical Lead
- Rehabilitation Lead
- STAG rep/co-ordinator
- MTC/TUs leads
- SAS Liaison

SOUTH EAST SCOTLAND TRAUMA NETWORK

- Regional SM
- Regional Clinical Lead
- Rehabilitation Lead
- STAG rep/co-ordinator
- MTC/TUs leads
- SAS Liaison

NORTH OF SCOTLAND TRAUMA NETWORK

- Regional SM
- Regional Clinical Lead
- Rehabilitation Lead
- STAG rep/co-ordinator
- MTC/TUs leads
- SAS Liaison

TAYSIDE TRAUMA NETWORK

- Regional SM
- Regional Clinical Lead
- Rehabilitation Lead
- STAG rep/co-ordinator
- MTC/TUs leads
- SAS Liaison



SCOTTISH AMBULANCE SERVICE

- Single governance of all prehospital trauma care
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- Trauma Critical care



Intervention	Rationale
IV/ IO access	Fluid resus, pain relief, TXA
IV Morphine	Pain relief
Compression/ haemostatic dressings	Control C
Tourniquet	Control C
Supraglottic airway	Maintain A
Chest seal dressings	Maintain B
Oxygen Therapy	Maintain B
BVM Ventilation	Maintain B
IV Tranexamic Acid	Control C
Traction Splint	Control C, pain relief
Pelvic Splint	Control C

Adult Trauma Triage Tool ≥ 16

Use this tool to Triage all Significantly Injured Patients or Patients involved in a High Mechanism Incident

Clinical Judgement is important and valued.

If you are concerned that your patient's triage category does not reflect their needs, you require clinical or logistical advice please contact the Trauma Desk directly on **03333 990 211** or by airwave by placing a callback to your local area dispatcher who will arrange a callback from the Trauma Desk.



Triage Questions

- Step 1**
Assess your Patient's Physiology
- Does your Patient have any of the following:
- Systolic blood pressure < 90 mmHg, or no radial pulse
 - Glasgow Coma Scale ≤ 14
 - Respiratory Rate ≤ 10 or ≥ 28 breaths/min
- Step 2**
Assess your Patient's Injuries
- Does your Patient have any of the following:
- Penetrating injury to head, neck, torso or extremities, potential to bleed or hole
 - Chest Wall instability or deformity
 - Two or more proximal limb fractures
 - Obvious, displaced, transposed or potentially unstable
 - Amputation proximal to wrist or ankle
 - Suspected pelvic fracture
 - Open or Depressed Skull Fracture
 - Patella
- Step 3**
Assess the Mechanism of Injury
- Did any of the following occur?
- Fall > 20 Feet
 - High Risk Vehicle Accident
 - WBB $> 12'$ intrusion
 - Ejected/propelled or everted
 - Death in entire passenger compartment
 - Vehicle striking Pedestrian/Cyclist at > 20 mph
 - Motorcycle accident at > 20 mph
- Step 4**
Special Considerations
- Are any of the following present:
- Age > 80 years
 - Bleeding Disorder or Anticoagulant Treatment
 - Inhaled Burns (Status with Trauma Desk)
 - Pregnancy > 20 weeks
 - Medical Device

Response Category

- Should the always become compromised and cannot be managed, consider conveyalighting to the nearest locally designated Emergency Department**
- Major trauma centre care**
- Your Patient requires Major Trauma Centre (MTC) Care
- If < 45 minutes from MTC \rightarrow convey to MTC
 - If > 45 minutes from MTC \rightarrow contact Trauma Desk
- If you do not think your patient requires MTC, contact Trauma Desk
- Remember to pre-alert the receiving hospital via airwave if you are managing a patient triaged to MTC
- Trauma unit care**
- Your Patient requires Trauma Unit (TU) Care
- Convey to the nearest TU, or MTC if closer
 - If > 45 minutes from TUMTC contact Trauma Desk
- If you do not think your patient requires TUMTC, contact Trauma Desk
- Local**
- Convey your patient to the nearest Local Emergency Hospital
- If you think your patient requires TUMTC, contact Trauma Desk

Paediatric Trauma Triage Tool

Use this tool to triage all children under 16 years old who have suspected major trauma

Clinical Judgement is important and valued.

If you are concerned that your patient's triage category does not reflect their needs, you require clinical or logistical advice please contact the Trauma Desk directly on **03333 990 211** or by airwave by placing a callback to your local area dispatcher who will arrange a callback from the Trauma Desk.

Physiological Reference Ranges*

Age	SBP	Pulse
< 2Y	70-100	100-160
2-5Y	70-100	80-140
5-11Y	80-100	60-120
11-17Y	90-110	60-100

*This chart is ICDLCC Age Appropriate for many physiological reference ranges

Triage Questions

- Step 1**
Assess your Patient's Physiology
- Does your Patient have any of the following:
- Abnormal vital signs for age* not explained by pain or distress
 - Abnormal conscious level
 - Capillary refill > 2 seconds
- Step 2**
Assess your Patient's Injuries
- Does your Patient have any of the following:
- Penetrating injury to head, neck, torso
 - Suspected open, depressed or burst skull fracture
 - Suspected spinal injury with new onset neurological
 - Significant bleeding to chest or extremities
 - Trauma associated/proximal severely proximal to wrist/ankle
 - Suspected pelvic fracture
 - Multiple and/or single open long bone fracture
 - Burns/chemical $> 20\%$ BSA and/or facial or subconjunctival burns from flame
- Step 3**
Assess the Mechanism of Injury
- Did any of the following occur:
- Traumatic death in same incidentally same mechanism
 - "Buck eye" damage to windshield or damage to "A" post from pedestrian striking outside of vehicle
 - Ejection from motor vehicle
 - Pedestrian/cyclist struck by vehicle at > 20 mph
 - Unconscious/not seen by witness's height (not leaning down state)
 - Bicycle/handcycycle injury with abnormal white/green pain
- Step 4**
Special Considerations
- Are any of the following present:
- Bleeding Disorder or Anticoagulant Treatment
 - Inhaled Burns (Status with Trauma Desk)
 - Pregnancy > 20 weeks
 - Significant pre-injuries (discuss case with Trauma Desk prior to transfer)

Response Category

- Should the always become compromised and cannot be managed, consider conveyalighting to the nearest locally designated Emergency Department**
- Major trauma centre care**
- Your Patient requires Major Trauma Centre (MTC) Care
- If < 45 minutes from MTC \rightarrow convey to MTC
 - If > 45 minutes from MTC \rightarrow contact Trauma Desk
- If you do not think your patient requires MTC, contact Trauma Desk
- Remember to pre-alert the receiving hospital via airwave if you are managing a patient triaged to MTC
- Trauma unit care**
- Your Patient requires Trauma Unit (TU) Care
- Convey to the nearest TU, or MTC if closer
 - If > 45 minutes from TUMTC contact Trauma Desk
- If you do not think your patient requires TUMTC, contact Trauma Desk
- Local**
- Convey your patient to the nearest Local Emergency Hospital
- Your patient can be taken to the nearest hospital with an Emergency Department, regardless of designation
 - If you think your patient requires MTC, contact Trauma desk

Trauma Desk



Who are we?



What do we do?





Scottish Ambulance Service

Trauma Desk





Scottish Ambulance Service

**Advanced
Paramedics**



Trauma Desk



Basics Scotland



Intervention	Rationale
Intubation	Maintain A
FONA	Maintain A
Thoracostomy	Maintain B
Fracture reduction	Maintain C, pain relief, limb salvage
IV Ketamine	Advanced analgesia, sedation
IV antibiotics	Prevention of infection
Post ROSC care	Maintain C and D
Prescribing	Inotropes, disease modifiers
IV Crush Therapy	Maintain C



Scottish Ambulance Service

Advanced Paramedics



West SCOTSTAR



North SCOTSTAR



Trauma Desk



Medic One



Tayside Trauma



Basics Scotland





Intervention	Rationale
Emergency Anaesthesia	Maintain A, B, C
Blood transfusion	Maintain C
Ultrasound	Detection/diagnosis
Amputation	Extrication
Resuscitative Thoracotomy	Cardiac
Resuscitative Histerostomy	Restore C
Central vein cannulation	Maintain C
Chest drain	Maintain B

The Future

- Possibility of expansion of services
- Development of role
- Research and auditing
- Major Incident cover
- ?? Air and road support
- Blue light driving!!

Any Questions?



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