Quality Surveillance Team

Major Trauma Services
Quality Indicators

MAJOR TRAUMA QUALITY INDICATORS

Introduction

These quality indicators have been commissioned by the National Clinical Director for Major Trauma Chris Moran. They have been developed from the National Service Specification for Major Trauma (NHS England D15/S/a 2013) and the NHS clinical advisory group report on Major Trauma Workforce (CFWI March 2011). They support the NHS England Quality Surveillance programme for major trauma services in England enabling quality improvement both in terms of clinical and patient outcomes.

The indicators cover the whole organisation of adult and children's major trauma services including sections for Major Trauma networks, pre-hospital care via ambulance services, Adult Major Trauma centres, Children's Major Trauma centres and Major Trauma units. Data from the Trauma Audit and Research Network (TARN) dataset will be used to support the review of the quality indicators alongside information submitted direct from major trauma services.

Reviewing the Major Trauma Network

Network Governance Quality Indicators
The Network Governance indicators are the responsibility of the Network Director and should be applied to both adult and children's services. Each network will be reviewed once in conjunction with its constituent centres and units.

Pre- Hospital Care Quality indicators
There are pre-hospital services which provide services to more than one major trauma network. Each service will be reviewed once in conjunction with its constituent networks, centres and units.

Major Trauma Centre Quality indicators - Adult and Children's.
The quality indicators for major trauma centres are divided into 3 sections
Reception and Resuscitation
Definitive Care Quality indicators
Rehabilitation Quality indicators
The responsibility for the quality indicators lies with the major trauma lead clinician for the trust.
Where there is a combined adult and children's centre it is expected the centre will be reviewed once against both adult and children's quality indicators. This will enable the service to demonstrate how they fulfil both roles.

A major trauma centre that is also a trauma unit for children's major trauma will only be reviewed against the relevant major trauma centre quality indicators.

Major Trauma Quality indicators for Trauma Units
The quality indicators for trauma units are divided into 3 sections
Reception and Resuscitation
Definitive Care Quality indicators
Rehabilitation Quality indicators
The responsibility for the quality indicators lies with the major trauma lead clinician for the trust.

Network Quality Indicators

The following quality indicators should be applied to both adult and children's services.

Number	Indicator	Data source
T16-1C-101	Network Configuration	Self declaration
T16-1C-102	Network Governance Structure	Self declaration
T16-1C-103	Patient Transfers	TARN report
T16-1C-104	Network Transfer Protocol from Trauma Units to Major Trauma Centres	Self declaration
T16-1C-105	Teleradiology Facilities	Self declaration
T16-1C-106	The Trauma Audit and Research Network (TARN)	TARN report
T16-1C-107	Trauma Management Guidelines	Self declaration
T16-1C-108	Management of Severe Head Injury	TARN report
T16-1C-109	Management of Spinal Injuries	Self declaration
T16-1C-110	Emergency planning	Self declaration
T16-1C-111	Network Director of Rehabilitation	Self declaration
T16-1C-112	Directory of Rehabilitation Services	Self declaration
T16-1C-113	Referral Guidelines to Rehabilitation Services	Self declaration
T16-1C-114	Rehabilitation Education Programme	Self declaration
T16-1C-115	Network Patient Repatriation Policy	TARN report

Network Quality Indicators - Descriptors

Number	Indicator	Data Source
T16-1C-101	**Network Configuration**	**Self declaration**
Descriptor	*Notes*	*Evidence required*

The network configuration should be identified including the following constituent parts:
• *pre – hospital services including:*
  ○ *ambulance services;*
  ○ *air ambulance services;*
  ○ *enhanced care services;*
• *hospitals including:*
  ○ *major trauma centre(s);*
  ○ *trauma units;*
  ○ *local emergency hospitals;*
• *rehabilitation services including;*
  ○ *specialist centre(s);*
  ○ *local hospital services;*
  ○ *community services.*
		Operational policy including a map and details of the major trauma network configuration.

T16-1C-102	**Network Governance Structure**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The major trauma network should have a clinical governance structure which includes: • *the name of the network director;* • *the name of clinical governance lead, if this is not the network director;* • *details of the governance structure;(1)* • *there should be regular clinical governance meetings that have an agenda and recorded minutes.*	*(1)The structure should demonstrate links to the governance structure of the host trust*	*Operational policy specifying name of the clinical governance lead and structure*

T16-1C-103	Patient Transfers	TARN Report
Descriptor	*Notes*	*Evidence required*
The network should undertake a review of patient transfers which includes: • *the number and proportion of patients transferred directly to MTC, this should include cases of significant under and over pre-hospital triage;* • *the number and proportion of patients that have an acute secondary transfer (within 12 hour) from a trauma unit to a major trauma centre;* • *the proportion of urgent transfers that occur within 2 calendar days;* • *The number of patients with ISS ≥15 managed definitively within a trauma unit.* *Feedback of the review should be presented at a major trauma network meeting.*		*TARN report* *Annual report detailing the review*
T16-1C-104	**Network Transfer Protocol from Trauma Units to Major Trauma Centres**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a network protocol for the safe and rapid transfer of patients to specialist care. *The transfer protocol should specify:* • *transfer for adults is carried out by a team that have been trained in the transfer of patients; (1)* • *a structured checklist is completed for the transfer;* • *Standardised documentation should be used by trauma units and major trauma centres.* *There should be involvement of the regional paediatric critical care transfer service in defining the transfer protocol for children.*	*(1)Anaesthesia, Intensive Care and Pre-Hospital Emergency Medicine all include transfer training in their curricula*	*Operational policy including the protocol* *Annual report with details of the audit of transfers*

T16-1C-105	Teleradiology Facilities	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be teleradiology facilities between the major trauma centre and all the trauma units in the network allowing immediate image transfer 24/7.		*Operational policy*

T16-1C-106	The Trauma Audit and Research Network (TARN)	TARN report
Descriptor	*Notes*	*Evidence required*
All MTCs and TUs should participate in the TARN audit, together with any local emergency hospitals (LEH) that are members. *Data completeness and accreditation figures should be reviewed at network audit meetings and plans put in place to improve on the figures* *The TARN audit should be discussed at the network audit meeting at least annually and distributed to all constituent teams in the network, the CCGs and area teams.*	*local emergency hospitals (LEH) should be encouraged to participate.*	*TARN data completeness and data quality for all services in the network.*

T16-1C-107	Trauma Management Guidelines	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be network agreed clinical guidelines for the management of: • *emergency anaesthesia within the emergency department;* • *emergency surgical airway;* • *resuscitative thoracotomy;* • *abdominal injuries;* • *severe traumatic brain injury;* • *open fractures;*	*Where there are national guidelines it is expected these are included in the guidelines* *(1)RCR guidelines*	*Operational policy including the guidelines.*

• *compartment syndrome;* • *vascular injuries;* • *penetrating cardiac injuries;* • *spinal cord injury;* • *severe pelvic fractures including urethral injury;* • *chest drain insertion;* • *analgesia for chest trauma with rib fractures;* • *CT imaging;* • *Imaging for children;(1)* • *Interventional radiology;* • *Non accidental injury in the child.*		
T16-1C-108	**Management of Severe Head Injury**	**TARN report**
Descriptor	*Notes*	*Evidence required*
All patients with a severe head injury should be managed according to NICE guidance Head injury: assessment and early management (CG176 –January 2014)		*TARN report*
T16-1C-109	**Management of Spinal Injuries**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a network protocol for the management of spinal injuries which covers: 1. *protecting and assessing the whole spine in adults and children with major trauma including that:* • *all spinal imaging should be reviewed and reported by a consultant radiologist within 24 hours of admission;*	*Where there are national guidelines it is expected these are included in the protocol.* *This may be a single protocol or separate protocols for adults and children.*	*Operational policy including the protocol.*

• *all patients with spinal cord injury have their neurology documented on an ASIA chart;* • *all spinal cord injuries with neurological deficit should be discussed with the network spinal service within 4 hours of diagnosis.* 2. *resuscitation and acute management of spinal cord injury, agreed with the linked Spinal Cord Injury Centre(SCIC), and available in all emergency departments that may receive patients with spinal cord injury. These must include:* • *skin care,* • *gastric care,* • *bowel care* • *bladder care* 3. *emergency transfer of spinal injuries*		

T16-1C-110	**Emergency Planning**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The network should have an emergency plan for dealing with a mass casualty event that is reviewed and updated annually.		*Operational policy including the emergency plan.*

T16-1C-111	**Network Director of Rehabilitation**	**Self declaration**
Descriptor	Notes	Evidence required
There should be a network director for rehabilitation with experience in trauma rehabilitation. The director should have an agreed list of responsibilities and time specified for the role.		Operational policy including the name and agreed list of responsibilities of the trauma network director of rehabilitation.

T16-1C-112	Directory of Rehabilitation Services	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be a network directory of rehabilitation services		*Operational policy including the directory of rehabilitation services.*
T16-1C-113	**Referral Guidelines to Rehabilitation Services**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The should be network agreed referral guidelines for access to rehabilitation services		*Operational policy including referral guidelines*
T16-1C-114	**Rehabilitation Education Programme**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a network rehabilitation education programme for health care professionals.		*Annual report including details of programme*
T16-1C-115	**Network Patient Repatriation Policy**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a network agreed policy for the repatriation of patients transferred to the MTC which should include: • *patients are transferred to the trauma units within 48 hours of request;* • *local contact details for each trauma unit;* • *the provision of ongoing care and non-specialised rehabilitation by the trauma units.* • *patients requiring transfer from MTC to MTC should be transferred within 48hrs of request.(1)*	*(1)This applies for out of region transfers the local MTC will liaise with their local TU for repatriation*	*Operational policy including the policy.*

Pre- Hospital Care Quality indicators

Introduction

The following quality indicators should be applied to both adult and children's services.

Number	Indicator	Data source
T16-2A-101	**Pre Hospital Care Clinical Governance**	**Self declaration**
T16-2A-102	**24/7 Senior Advice for the Ambulance Control Room**	**Self declaration**
T16-2A-103	**Enhanced Care Teams available 24/7**	**Self declaration**
T16-2A-104	**Clinical Management Protocols**	**Self declaration**
T16-2A-105	**Hospital Pre-Alert and Handover**	**Self declaration**

Pre- Hospital Care Quality indicators - Descriptors

Number	Indicator	Data Source
T16-2A-101	**Pre-Hospital Care Clinical Governance**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The pre-hospital providers should be part of the clinical governance structure for the network and send a representative to the network governance meetings.	*This should enable two way feedback and learning between services*	*Attendance at network meetings*
T16-2A-102	**24/7 Senior Advice for the Ambulance Control Room**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be an advanced paramedic or a critical care paramedic present in the ambulance control room 24 hours a day. *This senior clinician should have 24/7 telephone access to pre-hospital consultant advice consultant*		*Operational policy.*
T16-2A-103	**Enhanced Care Teams available 24/7**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
Enhanced care teams should be available in the pre-hospital phase 24/7 to provide care to the major trauma patient *The enhanced care team should be one or more of the following:* • *Advanced / critical care paramedic/practitioners* • *BASICS doctors* • *HEMS team* • *A Merit Service*		*Operational policy including details of enhanced care provision.*

T16-2A-104	Clinical Management Protocols	Self declaration
Descriptor	*Notes*	*Evidence required*

There should be protocols in place for the pre-hospital management of major trauma patients which includes:
• *airway management*
• *chest trauma*
• *pain management for adults and children including advanced analgesia options i.e. Ketamine;*
• *management of major haemorrhage including:*
  ○ *the administration of tranexamic acid*
  ○ *application of haemostatic dressings*
  ○ *application of tourniquets.*
  ○ *application of pelvic binders*
		Operational policy including the protocols

T16-2A-105	**Hospital pre-alert and handover**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a network wide agreed pre-alert system with effective communication between pre-hospital and in-hospital teams. *This should include documented criteria for trauma team activation and patient handover.*		*Operational policy including the details of the pre-alert system and documentation.*

ADULT MAJOR TRAUMA CENTRE QUALITY INDICATORS

Reception and Resuscitation		
Number	**Indicator**	**Data source**
T16-2B-101	Trauma Team Leader	TARN report
T16-2B-102	Trauma Team Leader Training	Self declaration
T16-2B-103	Emergency Trauma Nurse/ AHP	TARN report
T16-2B-104	Trauma Team Activation Protocol	Self declaration
T16-2B-105	24/7 Surgical and Resuscitative Thoracotomy Capability	TARN report
T16-2B-106	24/7 CT Scanner Facilities and on-site Radiographer	TARN report
T16-2B-107	CT Reporting	TARN report
T16-2B-108	24/7 MRI Scanning Facilities	TARN report
T16-2B-109	24/7 Interventional Radiology	TARN report
T16-2B-110	24/7 Access to Emergency Theatre and Surgery	TARN report
T16-2B-111	Damage Control Training for Emergency Trauma Consultant Surgeons	Self declaration
T16-2B-112	24/7 Access to On-site Surgical Staff	TARN report
T16-2B-113	24/7 Access to Consultant Specialists	TARN report
T16-2B-114	Dedicated Orthopaedic Trauma Operating Theatre	Self declaration
T16-2B-115	Provision of Surgeons and Facilities for Fixation of Pelvic Ring Injuries	TARN report
T16-2B-116	Trauma Management Guidelines	Self declaration
T16-2B-117	Critical Care Provision	Self declaration
T16-2B-118	24/7 Specialist Acute Pain Service	Self declaration
T14–2B-119	Administering Tranexamic Acid	TARN report
Definitive Care		

Number	Indicator	Data source
T16-2C-101	Major Trauma Centre Lead Clinician	Self declaration
T16-2C-102	Major Trauma Service	Self declaration
T16-2C-103	Major Trauma Coordinator Service	Self declaration
T16-2C-104	Major Trauma MDT Meeting	Self declaration
T16-2C-105	Dedicated Major Trauma Ward or Clinical Area	Self declaration
T16-2C-106	Formal Tertiary Survey	Self declaration
T16-2C-107	Management of Neurosurgical Trauma	TARN report
T16-2C-108	Management of Craniofacial Trauma	Self declaration
T16-2C-109	Management of Spinal Injuries	TARN report
T16-2C-110	Management of Musculoskeletal Trauma	TARN report
T16-2C-111	Management of Hand Trauma	Self declaration
T16-2C-112	Management of Complex Peripheral Nerve Injuries	Self declaration
T16-2C-113	Management of Maxillofacial Trauma	Self declaration
T16-2C-114	Vascular and Endovascular Surgery	Self declaration
T16-2C-115	Designated Specialist Burns Care	Self declaration
T16-2C-116	Patient Transfer	TARN report
T16-2C-117	Network Patient Repatriation Policy	Self declaration
T16-2C-118	Specialist Dietetic Support	Self declaration
T16-2C-119	24/7 Access to Psychiatric Advice	Self declaration
T16-2C-120	Patient Information	Self declaration
T16-2C-121	Patient Experience	Self declaration
T16-2C-122	Discharge Summary	Self declaration

T16-2C-123	**Rate of Survival**	**TARN report**
Rehabilitation		
Number	**Indicator**	**Data source**
T16-2D-101	**Clinical Lead for Acute Trauma Rehabilitation Services**	**Self declaration**
T16-2D-102	**Specialist Rehabilitation Team**	**Self declaration**
T16-2D-103	**Rehabilitation Coordinator Post**	**Self declaration**
T16-2D-104	**Specialist Rehabilitation Pathways**	**Self declaration**
T16-2D-105	**Key worker**	**Self declaration**
T16-2D-106	**Rehabilitation Assessment and Prescriptions**	**TARN report**
T16-2D-107	**Rehabilitation for Traumatic Amputation**	**Self declaration**
T16-2D-108	**Referral Guidelines to Rehabilitation Services**	**Self declaration**
T16-2D-109	**Clinical Psychologist for Trauma Rehabilitation**	**Self declaration**
T16-2D-110	**RCSET Dataset**	**RCSET**

ADULT MAJOR TRAUMA CENTRE QUALITY INDICATORS - Descriptors

Reception and Resuscitation			
Number	**Indicator**		**Data Source**
T16-2B-101	**Trauma Team Leader**		**TARN report**
Descriptor		Notes	Evidence required
There should be a medical consultant trauma team leader with an agreed list of responsibilities who should be leading the trauma team and available 24/7. The trauma team leader should be available in 5 minutes of arrival of the patient.			Operational policy including agreed responsibilities. TARN report
T16-2B-102	**Trauma Team Leader Training**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
All trauma team leaders should have attended trauma team leader training.		*Training can be national or provided in-house*	*Annual report*
T16-2B-103	**Emergency Trauma Nurse/ AHP**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a nurse/AHP of band 7 or above available for major trauma 24/7 who has successfully attained the adult competency and educational standard of level 2 (as described in the National Major Trauma Nursing Group guidance). *In units which accept children There should be a paediatric registered nurse/AHP available for paediatric major trauma 24/7 who has successfully*		*Guidance is found on the TQUINS resource page Tquins resources*	*Operational policy including details of training* *TARN report*

attained the paediatric competency and educational standard of level 2 (as described in the National Major Trauma Nursing Group guidance). *All nursing/AHP staff caring for a trauma patients should have attained the competency and educational standard of level 1. In centres that accept paediatric major trauma, this should include the paediatric trauma competencies (as described in the National Major Trauma Nursing Group guidance).*		
T16-2B-104	**Trauma Team Activation Protocol**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a Trauma Team Activation Protocol		*Operational policy including the protocol*
T16-2B-105	**24/7 Surgical and Resuscitative Thoracotomy Capability**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be a surgical and resuscitative thoracotomy capability within the trauma team and available 24/7		*Operational policy including a list of all appropriate trained consultants.* *TARN report* *The consultant rota should be available for peer review visit*

T16-2B-106	**24/7 CT Scanner Facilities and on-site Radiographer**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be CT scanning located in the emergency department and available 24/7. *There should be an on-site radiographer available 24/7.to prepare the CT scanner for use.*		*Trauma CT is the diagnostic modality of choice where patients are stable enough for transfer to CT.* *Where the CT scanner is located outside of the department there should be a protocol for the safe transfer and care of major trauma patients.*	*Operational policy* *TARN report.*
T16-2B-107	**CT Reporting**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a protocol for trauma CT reporting that specifies: • *there should be a 'hot' report documented within 5 minutes;* • *there should be detailed radiological report documented within 1 hour from the start of scan;* • *scans should be reported by a consultant radiologist within 24 hours.*			*The protocol.* *TARN report*
T16-2B-108	**24/7 MRI Scanning Facilities**		**TARN report**
Descriptor		*Notes*	*Evidence required*
MRI scanning should be available 24/7			*Operational policy* *TARN report*
T16-2B-109	**24/7 Interventional Radiology**		**TARN report**
Descriptor		*Notes*	*Evidence required*
Interventional radiology should be available 24/7 within 30 minutes of a request.			*TARN report*

Interventional radiology should be located within operating theatres or resuscitation areas. *There should be a protocol for the safe transfer and management of patients which includes the anaesthetics and resuscitation equipment.*		*Operational policy.*
T16-2B-110	**24/7 Access to Emergency Theatre and Surgery**	**TARN report**
Descriptor	Notes	Evidence required
There should be 24/7 access to a fully staffed and equipped emergency theatre. Patients requiring acute intervention for haemorrhage control should be in an operating room or intervention suite within 60 minutes.		Operational policy TARN report
T16-2B-111	**Damage Control Training for Emergency Trauma Consultant Surgeons**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
All general surgeons who are on the emergency surgery rota should be trained in the principles and techniques of damage control surgery		*Operational policy including list of surgeons trained.* *Annual report with details of the training.*
T16-2B-112	**24/7 Access to On-site Surgical Staff**	**TARN report**
Descriptor	*Notes*	*Evidence required*
The following staff should be available on site 24/7: • *a general surgeon ST4 or above;*		*Operational policy*

• *a trauma and orthopaedic surgeon ST4 or above;* • *an anaesthetist ST4 or above;* • *a neurosurgeon ST2 or above.*		*Medical staffing rotas should be available for PR visit.* *TARN report*
T16-2B-113	**24/7 Access to Consultant Specialists**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There following consultants should be available to attend an emergency case within 30 minutes • *emergency department physicians;* • *a general surgeon;* • *an anaesthetist;* • *an intensivist;* • *a trauma and orthopaedic surgeon;* • *a neurosurgeon;* • *an interventional radiologist;* • *a radiologist;* • *a plastic surgeon;* • *a cardiothoracic surgeon;* • *a vascular surgeon;* • *a urology surgeon;* • *a maxillofacial surgeon;* • *an ENT surgeon.*	*An individual may fulfil more than one of the roles on the list, compatible with their discipline and status.* *There should be written pathways for the safe management of patients in place for any specialties that do not meet the requirement.*	*Operational policy* *TARN report* *Consultant rotas should be available for PR visit*

T16-2B-114	Dedicated Orthopaedic Trauma Operating Theatre	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be dedicated trauma operating theatre lists with appropriate staffing available 7 days a week. *The lists must be separate from other emergency operating.*		*Operational policy Including the specified number of hours per week* *The theatre timetable should be available for PR visit*
T16-2B-115	**Provision of Surgeons and Facilities for Fixation of Pelvic Ring Injuries**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be specialist surgeons and facilities (theatre/equipment) to provide fixation of pelvic ring injuries within 24 hours. *There should be cover arrangements in place for holidays and planned absences.*		*Operational policy including the names of the surgeons.* *TARN report* *Reviewers to enquire of facilities.*
T16-2B-116	**Trauma Management Guidelines**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The MTC should agree the network trauma management guidelines as specified in T16-1C-107. *The MTC should include relevant local details.*		*Operational Policy.*

T16-2B-117	Critical Care Provision	Self declaration
Descriptor	*Notes*	*Evidence required*
In exceptional circumstances if children are cared for on an adult ITU prior to transfer to a PICU: 1. *there should be guidelines for the temporary management of children that comply with the minimum standards of the paediatric intensive care society;* 2. *there should be safe transfer / retrieval pathways;* 3. *the unit should be part of a paediatric intensive care network.*		*Operational policy*

T16-2B-118	24/7 Specialist Acute Pain Service	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be a 24/7 specialist acute pain service available for major trauma patients. The MTC should have pain management pathways for: • patients with severe chest injury and rib fractures; • early access to epidural pain management (within 6 hours). The MTC should audit the pain management of major trauma patients including patients with severe chest injuries (AIS3+), who were not ventilated and who received epidural analgesia.		Operational policy Including pain management pathways

T16-2B-119	Administration of Tranexamic Acid	TARN report
Descriptor	*Notes*	*Evidence required*
Patients with significant haemorrhage should be administered Tranexamic Acid within 3 hours of injury and receive a second dose according to CRASH-2 protocol.		*TARN report.*

Definitive care			
Number	**Indicator**		**Data Source**
T16-2C-101	**Major Trauma Centre Lead Clinician**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a lead clinician for the Major Trauma Centre (MTC) who should be a consultant with managerial responsibility for the service and time specified in their job plan.			*Operational policy*
T16-2C-102	**Major Trauma Service**		**Self declaration**
Descriptor		Notes	Evidence required
There should be a major trauma service led by consultants which takes responsibility for the holistic care and co-ordination of management of every individual major trauma patient on a daily basis.		*This may be on a daily or weekly basis*	Operational policy Including names of the consultants.
T16-2C-103	**Major Trauma Coordinator Service**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a major trauma coordinator service available 7 days a week for the coordination of care of major trauma patients. *The coordinator service should be provided by nurse or allied health professionals of band 7 or above.*		*This post can be shared with the rehabilitation coordinator.*	*Operational policy* *Including the names of the coordinators.*

T16-2C-104	Major Trauma MDT Meeting		Self declaration
Descriptor		*Notes*	*Evidence required*

There should be a single daily multi-specialty meeting for the presentation and discussion of all new major trauma patients following admission.
The meeting should include:
• *a trauma co-ordinator*
• *a physiotherapist*
• *clinical staff for:*
  ○ *major trauma service*
  ○ *orthopaedics*
  ○ *general surgery*
  ○ *neurosurgery*
  ○ *critical care*
  ○ *radiology*
 	
Accommodation for the meeting should include facilities for:
• *Video/teleconferencing*
• *PACS*
			Operational policy

T16-2C-105	**Dedicated Major Trauma Ward or Clinical Area**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a separate major trauma ward or clearly identified clinical area where major trauma patients are managed as a cohort			*Operational Policy*
T16-2C-106	**Formal Tertiary Survey**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
All major trauma patients should have a formal tertiary survey completed to identify missed injuries.			*Annual report*

The survey should be recorded in the patient's notes.			
T16-2C-107	**Management of Neurosurgical Trauma**		**TARN report**
Descriptor		*Notes*	*Evidence required*
The MTC should have the following neurosurgical provision: *i) on-site neuroradiology;* *ii) on site neuro critical care;* *iii) a neurosurgical consultant available for advice to the trauma network 24/7;* *iv) a senior neurosurgical trainee of ST4 or above;* *v) all neurosurgical patient referrals should be discussed with a consultant;* *vi) all decisions to perform emergency neurosurgery for trauma are discussed with a consultant;* *vii) facilities available to allow neurosurgical intervention within 1 hour of arrival at the MTC.*		*Referral to neurosurgery can be by telephone consultation or email*	*Operational policy* *TARN report*
T16-2C-108	**Management of Craniofacial Trauma**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be an agreed pathway for patients with craniofacial trauma which includes joint management with neurosurgery. *Where there are facilities for craniofacial trauma on site they should be co-located with neurosurgery.*			*Operational policy*

T16-2C-109	Management of Spinal Injuries	TARN report
Descriptor	*Notes*	*Evidence required*
The MTC should agree the network protocol for protecting and assessing the whole spine in adults and children with major trauma. *There should be a linked Spinal Cord Injury Centre (SCIC) for the MTC which provides an out-reach nursing and/or therapy service for patients with spinal cord injury within 5 days of referral.* *All patients with spinal cord injury should be entered onto the national SCI database.*	*If access to the SCIC outreach service is identified as an issue by the MTC, audit data should be made available indicating the delays.*	*Operational policy* *Examples of ASIA charts and management plans should be available at PR visit* *TARN report*
T16-2C-110	**Management of Musculoskeletal Trauma**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be trauma orthopaedic surgeons who spend a minimum of 50% of their programmed activities in trauma. *The MTC should provide a comprehensive musculoskeletal trauma service and facilities to support all definitive fracture care and allow joint emergency orthoplastic management of severe open fractures as specified in BOAST 4 guidelines.* *All patients with complex musculoskeletal injuries should have a rehabilitation management plan.*	*Reference NICE guideline – Major Trauma (NG39)*	*Operational policy* *TARN report*

T16-2C-111	Management of Hand Trauma	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be facilities for the management of patients with hand trauma which include: • *dedicated hand surgery specialists with a combination of plastic and orthopaedic surgeons;* • *facilities for microsurgery;* • *a dedicated hand therapist*		*Operational policy including details of hand surgery specialists and therapists.*
T16-2C-112	**Management of Complex Peripheral Nerve Injuries**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be facilities and expertise for the management of complex peripheral nerve injuries, including brachial plexus. *Where these are not on site the MTC should name the tertiary referral centre.*		*Operational policy including a list of surgical specialists /name of tertiary referral centre.*
T16-2C-113	**Management of Maxillofacial Trauma**	**Self declaration**
Descriptor	Notes	Evidence required
There should be on site maxillofacial surgeons with access to theatre for the reconstruction of maxillofacial trauma.		Operational policy Surgical rotas should be available at PR visit

T16-2C-114	**Vascular and Endovascular Surgery**		**T Self declaration**
There should be facilities for open vascular and endovascular surgery, including EVAR, available 24/7.			Operational policy
T16-2C-115	**Designated Specialist Burns Care**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
Burns care should be managed through a designated specialist burns network. *There should be a clinical guideline for the treatment of burns. This should include the referral pathway to the specialist burns centre where the MTC is not the specialist centre.*			*The clinical guideline for treatment of burns including the referral pathway*
T16-2C-116	**Patient Transfer**		**TARN report**
Descriptor		*Notes*	*Evidence required*
The MTC should agree the network protocol for patient transfer T16-1C-104			*Operational policy* *TARN report*
T16-2C-117	**Network Patient Repatriation Policy**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
The MTC should agree the network policy for the repatriation of patients. T16-1C-115			*Operational policy*
T16-2C-118	**Specialist Dietetic Support**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a specialist dietician with specified time for the management of major trauma patients.			*Operational policy.*

T16-2C-119	**24/7 Access to Psychiatric Advice**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be 24/7 access to liaison psychiatric assessment services.		*Operational policy.*
T16-2C-120	**Patient Information**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The patient and or their family/carers should be provided with written information specific to the MTC about the facilities, care and rehabilitation as specified in the NICE guideline – Major Trauma (NG39)		*Operational policy. Details and examples of written information should be available for PR visit*
T16-2C-121	**Patient Experience**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The MTC should participate in the TARN PROMS and PREMS	*From 2017 the TARN Proms report will provide evidence of participation*	*Operational policy*
T16-2C-122	**Discharge summary**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a discharge summary which includes: • *A list of all injuries* • *Details of operations (with dates)* • *Instructions for next stage rehabilitation for each injury (including specialist equipment such as; wheel chairs, braces and casts)* • *Follow-up clinic appointments* • *Contact details for ongoing enquiries.*	*ref Nice guideline- Major Trauma (NG39)*	*Operational policy Examples of the discharge summary should be available for PR visit*

T16-2C-123	**Rate of Survival**	**TARN Report**
Rehabilitation		
Number	**Indicator**	**Data Source**
T16-2D-101	**Clinical Lead for Acute Trauma Rehabilitation Services**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a named lead clinician for acute trauma rehabilitation services who is a consultant in rehabilitation medicine, and have an agreed list of responsibilities and time specified for the role.		*Operational policy including the name and agreed list of responsibilities.*
T16-2D-102	**Specialist Rehabilitation Team**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a multidisciplinary specialist rehabilitation team which should include: • *Consultant in rehabilitation medicine* • *Physiotherapist* • *Occupational therapist* • *Speech and language therapist* • *Dietitian* • *Clinical psychologist /neuropsychologist* *The team should meet at least weekly to discuss and update rehabilitation management plans and rehabilitation prescriptions.* *There should be specified contacts for the following:* • *pain management specialist* • *pharmacist*		*Operational policy including details of the team*

• *surgical appliance services* • *orthotic services* • *prosthetic services* • *wheelchair services*			
T16-2D-103	**Rehabilitation Coordinator Post**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a rehabilitation coordinator who is responsible for coordination and communication regarding the patient's current and future rehabilitation available 7 days a week. *This rehabilitation coordinator should be a nurse or allied health professional at AFC Band 7 or above with experience in rehabilitation.*			*Operational policy including names of the rehabilitation co-ordinators.*
T16-2D-104	**Specialist Rehabilitation Pathways**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be referral pathways for patients requiring specialist rehabilitation for; • *neurological injuries, including t brain injuries* • *spinal injuries* • *complex musculoskeletal injuries* • *return to work (vocational rehabilitation)for patients with & without brain injury*		*Describe any specialist vocational rehabilitation services available. If not available give details of planned developments*	*Operational policy including details of the team and the number of specialist rehabilitation beds.*
T16-2D-105	**Key worker**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
All patients requiring rehabilitation should have an identified key worker to be a point of contact for them, their carer/s or family doctor.			*Operational policy*

The key worker should be a health care professional *The name of the patient's key worker should be recorded in the patient's notes and on their rehabilitation prescription*			
T16-2D-106	**Rehabilitation Assessment and Prescriptions**		**TARN report**
Descriptor		*Notes*	*Evidence required*
All patients should receive a rehabilitation assessment including barriers to return to work. All patients should have a Rehabilitation Prescription initiated within 2 calendar days of admission & the first comprehensive Rehabilitation Prescription completed at 4 calendar days following admission *The prescription should be updated weekly at the rehabilitation MDT meeting until transfer into a designated rehabilitation service (T16-2D-102) and prior to discharge and a copy given to the patient* *All patients should be reviewed by a Consultant in Rehabilitation Medicine (or an alternative consultant with skills & competencies in rehabilitation eg: elderly care for elderly patients with multiple co-morbidities) within 3 calendar days of admission* *Patients who have Category A or B rehabilitation needs (using the Patient Categorisation Tool) should have a "specialist rehabilitation prescription" completed by a Consultant in Rehabilitation Medicine or their designated deputy. (1)The specialist RP must accompany the patient on discharge from the MTC, with network arrangements to ensure appropriate referral to specialist rehabilitation services*		*(1) Deputy may be a nurse or AHP Band 7 or above with a rehabilitation role or a Speciality Trainee in Rehabilitation Medicine at ST4 or above* *Some MTCs have designated specialist Level 1 &/or 2 rehabilitation beds, in which case patients may be transferred directly into those beds, so the specialist RP may then be part of routine UKROC data collection on transfer.*	*Operational policy* *TARN report*

T16-2D-107	Rehabilitation for Traumatic Amputation	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be a rehabilitation program for patients with a traumatic amputation which includes: • *a linked prosthetics centre which provides an out-reach service to see patients with amputation;* • *pain management of acute amputation, including phantom limb pain;*		*Operational policy including the name of the linked centre and outreach service, analgesia guidelines and list of psychologists available.*
T16-2D-108	**Referral Guidelines to Rehabilitation Services**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The MTC should agree the network referral guidelines for access to rehabilitation services T16-1C-113		*Referral guidelines*
T16-2D-109	**Clinical Psychologist for Trauma Rehabilitation**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The trauma rehabilitation service should include a clinical psychologist for the assessment and treatment of major trauma patients. *Inpatient and outpatient clinical psychology services should be available.*	*Where there is no clinical psychologist the trauma rehabilitation services should provide detail on how they access advice from a clinical psychologist.*	*Operational policy including the name and agreed responsibilities of the clinical psychologist.*
T16-2D-110	**BSRM Core Standards for Specialist Rehabilitation in the Trauma Pathway**	**RCSET**
Descriptor	*Notes*	*Evidence required*
.For patients identified as having category A or B needs, & so potentially		*Operational policy including network rehabilitation*

requiring specialist (Level 1 or 2) rehabilitation, the following datasets should be completed as part of the "Specialist Rehabilitation Prescription", & should be completed by a Consultant in Rehabilitation Medicine or their designated deputy:- • *:Patient Categorisation Tool or Complex Need Checklist-* • *RCS-E or RCS-ET (dependent on MTC & Network arrangements)* • *Northwick Park dependency Score* • *Neurological & Trauma Impairment Set* *Where specialist rehabilitation is not provided at the MTC, & patients are transferred to TUs or other hospitals, the Specialist RP must be updated at the point of discharge from the MTC* *The MTC should also participate in the National Clinical Audit of Specialist Rehabilitation for Patients Following Major Injury.*	*The RCS-ET helps to identify the "R" point, & where ongoing trauma care may be provided in a TU. In some NTNs the role of TUs is for emergency ED care only.*	*pathways*

CHILDREN'S MAJOR TRAUMA QUALITY INDICATORS

These quality indicators should be applied to all children's major trauma centres. Where this is combined with an adult service, teams may submit a common set of evidence required documentation which includes reference to both adults and children. However they will still be required to assess against both adults and children's quality indicators. Where there is a stand-alone children's major trauma centre the team is only required to assess against this set of quality indicators.

Reception and Resuscitation		
Number	**Indicator**	**Data source**
T16-2B-201	**Trauma Team Leader**	**TARN report**
T16-2B-202	**Trauma Team Leader Training**	**Self declaration**
T16-2B-203	**Emergency Trauma Nurse/ AHP**	**TARN report**
T16-2B-204	**Trauma Team Activation Protocol**	**Self declaration**
T16-2B-205	**24/7 Surgical and Resuscitative Thoracotomy Capability**	**TARN report**
T16-2B-206	**24/7 CT Scanner Facilities and on-site Radiographer**	**TARN report**
T16-2B-207	**CT Reporting**	**TARN report**
T16-2B-208	**24/7 MRI Scanning Facilities**	**TARN report**
T16-2B-209	**24/7 Interventional Radiology**	**TARN report**
T16-2B-210	**24/7 Access to Emergency Theatre and Surgery**	**TARN report**
T16-2B-211	**Damage Control Training for Emergency Trauma Consultant Surgeons**	**Self declaration**
T16-2B-212	**24/7 Access to Consultant Specialists**	**TARN report**
T16-2B-213	**Provision of Surgeons and Facilities for Fixation of Pelvic Ring Injuries**	**TARN report**
T16-2B-214	**Trauma Management Guidelines**	**Self declaration**
T16-2B-215	**Critical Care Provision**	**Self declaration**
T16-2B-216	**24/7 Specialist Acute Pain Service**	**Self declaration**
T16-2B-217	**Administering Tranexamic Acid**	**TARN report**

Definitive Care		
Number	**Indicator**	**Data source**
T16-2C-201	Major Trauma Centre Lead Clinician	Self declaration
T16-2C-202	Major Trauma Coordinator Service	Self declaration
T16-2C-203	Major Trauma MDT Meeting	Self declaration
T16-2C-204	Identification of Social and Welfare Needs	Self declaration
T16-2C-205	Formal Tertiary Survey	Self declaration
T16-2C-206	Management of Neurosurgical Trauma	TARN report
T16-2C-207	Management of Craniofacial Trauma	Self declaration
T16-2C-208	Management of Spinal Injuries	TARN report
T16-2C-209	Management of Musculoskeletal Trauma	TARN report
T16-2C-210	Management of Hand Trauma	Self declaration
T16-2C-211	Management of Complex Peripheral Nerve Injuries	Self declaration
T16-2C-212	Management of Maxillofacial Trauma	Self declaration
T16-2C-213	Designated Specialist Burns Care	Self declaration
T16-2C-214	Patient transfer	TARN report
T16-2C-215	Specialist Dietetic Support	Self declaration
T16-2C-216	24/7 Access to Psychiatric Advice	Self declaration
T16-2C-217	Patient Information	Self declaration
T16-2C-218	Patient Experience	TARN report
T16-2C-219	Discharge Summary	Self declaration
T16-2C-220	Network Patient Repatriation Policy	Self declaration
Rehabilitation		

Number	Indicator	Data source
T16-2D-201	Clinical Lead for Acute Trauma Rehabilitation Services	Self declaration
T16-2D-202	Specialist Rehabilitation Team	Self declaration
T16-2D-203	Rehabilitation Coordinator Post	Self declaration
T16-2D-204	Specialist Rehabilitation Pathways	Self declaration
T16-2D-205	Key worker	Self declaration
T16-2D-206	Rehabilitation Assessment and Prescriptions	TARN report
T16-2D-207	Rehabilitation for Traumatic Amputation	Self declaration
T16-2D-208	Referral Guidelines to Rehabilitation Services	Self declaration
T16-2D-209	Clinical Psychologist for Trauma Rehabilitation	Self declaration

CHILDREN'S MAJOR TRAUMA QUALITY INDICATORS - *Descriptors*

Reception and Resuscitation			
Number	**Indicator**		**Data source**
T16-2B-201	**Trauma Team Leader**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a medical consultant trauma team leader with an agreed list of responsibilities who should be leading the trauma team and available 24/7. *The trauma team leader should be available in 5 minutes of arrival of the patient.*		*The consultant trauma team leader need not be on site* *It is recommended the MTC undertake an audit of the numbers of major trauma*	*Operational policy including agreed responsibilities.*
T16-2B-202	**Trauma Team Leader Training**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
All trauma team leaders should have attended trauma team leader training.		*Training can be national or provided in-house*	*Annual report*
T16-2B-203	**Emergency Trauma Nurse/ AHP**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a paediatric registered nurse/AHP of band 7 or above available for major trauma 24/7 who has successfully attained the paediatric competency and educational standard of level 2 as described in the National Major Trauma Nursing Group guidance.		*Guidance is found on the TQUINS resource page* [*Tquins resources*]	*Operational policy* *TARN report*

All nursing/AHP staff caring for a trauma patients should have attained the paediatric competency and educational standard of level 1. (as described in the National Major Trauma Nursing Group guidance).		
T16-2B-204	**Trauma Team Activation Protocol**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a trauma team activation protocol *The trauma team should include medical staff with recognised training in paediatrics and paediatric trained nurses with experience in trauma.*		*Operational policy Including the protocol*
T16-2B-205	**24/7 Surgical and Resuscitative Thoracotomy Capability**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be a surgical and resuscitative thoracotomy capability within the trauma team and available 24/7		*Operational policy including a list of all appropriate trained consultants.* *TARN report* *The consultant rota should be available for peer review visit*
T16-2B-206	**24/7 CT Scanner Facilities and on-site Radiographer**	**TARN Report**
Descriptor	*Notes*	*Evidence required*
The MTC should agree and implement the network imaging protocol for children. *There should be CT scanning located in the emergency department and*	*Where the CT scanner is located outside of the department there should be a protocol for the safe transfer of major trauma patients to and from the scanner.*	*Operational policy Including the protocol* *TARN report*

available 24/7. *There should be an on-site radiographer available 24/7.to prepare the CT scanner for use.*			
T16-2B-207	**CT Reporting**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a protocol for trauma CT reporting that specifies: • *there should be a 'hot' report documented within 5 minutes;* • *there should be detailed radiological report documented within 1 hour;* • *scans should be reported by a consultant paediatric radiologist within 24 hours.*			*The protocol.* *TARN report*
T16-2B-208	**24/7 MRI Scanning Facilities**		**TARN report**
Descriptor		*Notes*	*Evidence required*
MRI scanning should be available 24/7			*Operational policy* *TARN report*
T16-2B-209	**24/7 Interventional Radiology**		**TARN Report**
Descriptor		*Notes*	*Evidence required*
Interventional radiology should be available 24/7 within 30 minutes of a request. *Interventional radiology should be located within operating theatres or resuscitation areas.* *There should be a protocol for the safe transfer and management of patients which includes the anaesthetics and resuscitation equipment.*			*Operational policy.* *TARN report*

T16-2B-210	24/7 access to Emergency Theatre and Surgery	TARN report
Descriptor	*Notes*	*Evidence required*
There should be 24/7 access to a fully staffed and equipped emergency theatre. *Patients requiring acute intervention for haemorrhage control should be in an operating room or intervention suite within 60 minutes.*		*Operational policy* *TARN report*
T16-2B-211	**Damage Control Training for Emergency Trauma Consultant Surgeons**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
All general surgeons providing emergency surgery should be trained in the principles and techniques of damage control surgery.		*Operational policy including list of surgeons trained.* *Annual report with details of the training.*
T16-2B-212	**24/7 Access to Consultant Specialists**	**TARN report**
Descriptor	*Notes*	*Evidence required*
The following consultants should be available to attend an emergency case within 30 minutes: • *a general paediatric surgeon;* • *a paediatric anaesthetist;* • *a paediatric intensivist;* • *a paediatric neurosurgeon.*	*An individual may fulfil more than one of the roles on the list, compatible with their discipline and status.* *Where general surgeons provide both paediatric and adult emergency surgery, this should be indicated.* *There should be written pathways for the safe management of patients in place for any specialties that do not meet the requirement.*	*Operational policy* *TARN report* *Consultant rotas should be available for PR visit*

T16-2B-213	Provision of Surgeons and Facilities for Fixation of Pelvic Ring Injuries	TARN Report
Descriptor	*Notes*	*Evidence required*
There should be specialist surgeons and facilities (theatre/equipment) available to provide fixation of pelvic ring injuries within 24 hours. *There should be cover arrangements in place for holidays and planned absences.*	*This need not be on site*	*Operational policy including the names of the surgeons.* *TARN report* *Reviewers to enquire of facilities.*
T16-2B-214	**Trauma Management Guidelines**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The MTC should agree the network trauma management guidelines as specified in T16-1C-107. *The MTC should include relevant local details.*		*Operational policy.*
T16-2B-215	**Critical Care Provision**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
In exceptional circumstances if children are cared for on an adult ITU prior to transfer to a PICU: 4. *there should be guidelines for the temporary management of children that comply with the minimum standards of the paediatric intensive care society;* 5. *there should be safe transfer / retrieval pathways;* 6. *the unit should be part of a paediatric intensive care network.*		*Operational policy*
T16-2B-216	**24/7 Specialist Acute Pain Service**	**Self declaration**

Descriptor		*Notes*	*Evidence required*
There should be a 24/7 specialist paediatric acute pain service for major trauma patients.			*Operational policy including pain management pathways*
T16-2B-217	**Administration of Tranexamic Acid**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a policy that patients with significant haemorrhage should be administered Tranexamic Acid within 3 hours of injury according to RCPCH guidelines			*TARN report*
Definitive Care			
Number	**Indicator**		**Data source**
T16-2C-201	**Major Trauma Centre Lead Clinician**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a lead clinician for the Major Trauma Centre (MTC) who should be a paediatric consultant with managerial responsibility for the service and time specified in their job plan.			*Operational policy*
T16-2C-202	**Major Trauma Coordinator Service**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a major trauma coordinator service available 7 days a week for the coordination of care of major trauma patients. *The coordinator service should be provided by nurse or allied health professionals of band 7 or above with experience in paediatric trauma*		*This post can be shared with the rehabilitation coordinator.* *For combined adult / children's centres, the post may cover both adults and children.*	*Operational policy* *Including the names of the coordinators.*

T16-2C-203	Major Trauma MDT Meeting	Self declaration
Descriptor	*Notes*	*Evidence required*

There should be a single weekly MDT meeting for the presentation and discussion of all major trauma patients following admission.
The meeting should include:
• *major trauma lead clinician*
• *trauma co-ordinator*
• *a physiotherapist*
• *occupational therapist*
• *speech and language therapist*
• *youth worker*
• *play therapist*
• *psychologist*
• *safe-guarding representative as required*
• *additional clinical staff as appropriate*
  ○ *orthopaedics*
  ○ *general surgery*
  ○ *neurosurgery*
  ○ *critical care*
  ○ *radiology*
 	
Accommodation for the meeting should include facilities for
• *Video/Teleconferencing*
• *PACS*
		Operational policy

T16-2C-204	**Identification of Social and Welfare Needs**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be identified members of the team who are trained to assess the		*Operational policy*

social and welfare needs of the child, family and/or carers following a major trauma event whilst they are resident in the MTC. They should have expertise in dealing with complex discharges and be able to identify and support child protection investigations. They should attend the weekly rehabilitation MDT meetings (T16-2D-202) and should include: • *Rehabilitation co-ordinator* • *Safeguarding Team* • *Family support services* • *Paediatrician* *An appropriate needs assessment and outcome measure tool for children admitted to the MTC should be recorded for all complex patients.*		*Reviewers should enquire at PR visit*
T16-2C-205	**Formal Tertiary Survey**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a protocol specifying that all major trauma patients should have a formal tertiary survey to identify missed injuries. *The major trauma service should audit the implementation of the protocol.*		*Annual report including results of the audit.*
T16-2C-206	**Management of Neurosurgical Trauma**	**TARN report**
Descriptor	*Notes*	*Evidence required*
The MTC should have the following neurosurgical provision: *i) neuroradiology;* *ii) on site neuro critical care;* *iii) a paediatric neurosurgical consultant available for advice to the trauma network 24/7;* *iv) a senior neurosurgical trainee of ST4 or above available on site 24/7;* *v) all neurosurgical patient referrals should be discussed with a paediatric*	*Referral to neurosurgery can be by telephone consultation or email*	*Operational policy* *TARN report* *The consultant rota should be available for PR visit.*

neuro consultant; *vi) all decisions to perform emergency neurosurgery for trauma are discussed with a paediatric neuro consultant;* *vii) facilities available to allow neurosurgical intervention within 1 hour of arrival at the MTC.*		
T16-2C-207	**Management of Craniofacial Trauma**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be an agreed pathway for patients with craniofacial trauma which includes joint management with neurosurgery. *Where there are facilities for craniofacial trauma on site they should be co-located with neurosurgery.*		*Operational policy*
T16-2C-208	**Management of Spinal Injuries**	**TARN report**
Descriptor	*Notes*	*Evidence required*
The MTC should agree the network protocol for protecting and assessing the whole spine in children with major trauma. *There should be a linked Spinal Cord Injury Centre (SCIC) for the MTC which provides an out-reach nursing and/or therapy service for patients with spinal cord injury within 5 days of referral.* *All patients with spinal cord injury should be entered onto the national SCI database.*	*If access to the SCIC outreach service is identified as an issue by the MTC, audit data should be made available indicating the delays.*	*Operational policy* *Examples of ASIA charts and management plans should be available at PR visit* *TARN report*

T16-2C-209	Management of Musculoskeletal Trauma	TARN report
Descriptor	*Notes*	*Evidence required*
There should be paediatric orthopaedic surgeons. *The MTC should provide a comprehensive musculoskeletal trauma service with paediatric orthopaedic surgeons and facilities to support all definitive fracture care and allow joint emergency orthoplastic management of severe open fractures as specified in BOAST 4 guidelines.*	*Reference NICE guideline – Major Trauma (NG39)*	*Operational policy* *TARN report*
T16-2C-210	**Management of Hand Trauma**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be facilities for the management of patients with hand trauma which include: • *dedicated hand surgery specialists with a combination of plastic and orthopaedic surgeons;* • *facilities for microsurgery;* • *a dedicated hand therapist*	*These need not be on site*	*Operational policy including details of hand surgery specialists and therapists.*
T16-2C-211	**Management of Complex Peripheral Nerve Injuries**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be facilities and expertise for the management of complex peripheral nerve injuries, including brachial plexus. *Where these are not on site the MTC should name the tertiary referral centre.*		*Operational policy including a list of surgical specialists /name of tertiary referral centre.*

T16-2C-212	**Management of Maxillofacial Trauma**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be on site maxillofacial surgeons with access to theatre for the reconstruction of maxillofacial trauma.			*Operational policy Surgical rotas should be available at PR visit*
T16-2C-213	**Designated Specialist Burns Care**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
Burns care should be managed through a designated specialist burns network. *There should be a clinical guideline for the treatment of burns. This should include the referral pathway to the specialist burns centre where the MTC is not the specialist centre.*			*The clinical guideline for treatment of burns including the referral pathway*
T16-2C-214	**Patient Transfer**		**TARN report**
Descriptor		*Notes*	*Evidence required*
The MTC should agree the network protocol for patient transfer T16-1C-104			*Operational policy*
T16-2C-215	**Specialist Dietetic Support**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a specialist dietician with paediatric experience with specified time for the management of major trauma patients.			*The policy.*

T16-2C-216	24/7 Access to Psychiatric Advice		Self declaration
Descriptor		*Notes*	*Evidence required*
There should be 24/7 access to liaison paediatric psychiatric assessment services.			*Operational policy.* *The psychiatric on call rota should be available for PR visit*
T16-2C-217	**Patient Information**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
The patient and or their family/carers should be provided with written information specific to the MTC about the facilities, care and rehabilitation as specified in the NICE guideline – Major Trauma (NG39)			*Operational policy.* *Details and examples of written information should be available for PR visit*
T16-2C-218	**Patient Experience**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
The MTC should participate in the TARN PROMS and PREMS		*From 2017 the TARN Proms report will provide evidence of participation*	*TARN completion*
T16-2C-219	**Discharge summary**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a discharge summary which includes: • *A list of all injuries* • *Details of operations (with dates)* • *Instructions for next stage rehabilitation for each injury (including braces and casts)* • *Follow-up clinic appointments* •		*ref Nice guideline- Major Trauma (NG39)*	*Operational policy* *Examples of the discharge summary should be available for PR visit*

T16-2C-220	Network Patient Repatriation Policy	Self declaration
Descriptor	*Notes*	*Evidence required*
The MTC should agree the network policy for the repatriation of patients. *T16-1C-115*		*Operational policy*

Rehabilitation

Number	Indicator	Data source
T16-2D-201	**Clinical Lead for Acute Trauma Rehabilitation Services**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a named lead clinician for acute trauma rehabilitation services who should have experience in children's rehabilitation and have an agreed list of responsibilities and time specified for the role.		*Operational policy including the name and agreed list of responsibilities.*
T16-2D-202	**Specialist Rehabilitation Team**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a multidisciplinary specialist rehabilitation team which should include: • lead clinician for rehabilitation • rehabilitation co-ordinator • paediatrician • representation from safeguarding team • representation from family support services Where relevant: • play therapist • youth worker • music therapist • physiotherapist		Operational policy including details of the team

• speech and language therapist • dietitian • clinical psychologist / neuropsychologist • neuropsychologist The team should meet at least weekly to discuss and update rehabilitation management plans and rehabilitation prescriptions. There should be specified contacts for the following: • pain management specialist • pharmacist • surgical appliance services • orthotic services • prosthetic services • wheelchair services		
T16-2D-203	**Rehabilitation Coordinator Post**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a rehabilitation coordinator who is responsible for coordination and communication regarding the patient's current and future rehabilitation available 7 days a week. *This rehabilitation coordinator should be a nurse or allied health professional at AFC Band 7 or above.*	*This post can be shared with the major trauma coordinator.* *This can be a combined post for adults and children*	*Operational policy including names of the rehabilitation co-ordinators.*
T16-2D-204	**Specialist Rehabilitation Pathways**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be referral pathways to the following specialist rehabilitation that meet the individual needs of the child and their family whilst in the MTC and include transition into community services:		*Operational policy including details of the team and the number of specialist*

• *neurological injuries including brain injuries* • *spinal injuries* • *complex musculoskeletal injuries* • *education and vocational rehabilitation for patients with or without brain injury*			*rehabilitation beds.*
T16-2D-205	**Key worker**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
Each patient should have an identified key worker to be a point of contact for them, their carer/s or family doctor. *The key worker should be a health care professional* *The name of the patient's key worker should be recorded in the patient's notes and in the rehabilitation prescription.*			*Operational policy*
T16-2D-206	**Rehabilitation Assessment and Prescriptions**		**TARN report**
Descriptor		*Notes*	*Evidence required*
All patients should receive a rehabilitation assessment. Where a prescription is required this should be completed within 72 hours.			*Annual report including TARN report*
T16-2D-207	**Rehabilitation for Traumatic Amputation**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a rehabilitation program for patients with a traumatic amputation which includes: • *a linked prosthetics centre which provides an out-reach service to see*			*Operational policy including the name of the linked centre and outreach*

patients with amputation; • *pain management of acute amputation, including phantom limb pain;* • *specialist paediatric psychological services for patients who suffer acute, traumatic amputation.*		*service, analgesia guidelines and list of psychologists available.*
T16-2D-208	**Referral Guidelines to Rehabilitation Services**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The MTC should agree the network referral guidelines for access to rehabilitation services T16-1C-113		*Operational policy*
T16-2D-209	**Clinical Psychologist for Trauma Rehabilitation**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The trauma rehabilitation service should include a clinical psychologist for the assessment and treatment of major trauma patients *Inpatient and outpatient clinical psychology services should be available.*	*Where there is no clinical psychologist the trauma rehabilitation services should provide detail on how they access advice from a clinical psychologist.*	*Operational policy including the name and agreed responsibilities of the clinical psychologist.*

MAJOR TRAUMA QUALITY INDICATORS FOR TRAUMA UNITS

Reception and Resuscitation		
Number	**Indicator**	**Data source**
T16-2B-301	Trauma Team Leader	TARN report
T16-2B-302	Emergency Trauma Nurse/ AHP	TARN report
T16-2B-303	Trauma Team Activation Protocol	Self declaration
T16-2B-304	Agreement to Network Transfer Protocol from Trauma Units to Major Trauma Centres	TARN report
T16-2B-305	24/7 CT Scanner Facilities	TARN report
T16-2B-306	CT Reporting	TARN report
T16-2B-307	Teleradiology Facilities	Self declaration
T16-2B-308	24/7 Access to Surgical Staff	TARN report
T16-2B-309	Dedicated Orthopaedic Trauma Operating Theatre	Self declaration
T16-2B-310	24/7 access to Emergency Theatre and Surgery	TARN report
T16-2B-311	Trauma Management Guidelines	Self declaration
T16-2B-312	Transfusion Protocol	Self declaration
T16-2B-313	Administration of Tranexamic Acid	TARN report
Definitive Care Quality indicators		
Number	**Indicator**	**Data source**
T16-2C-301	Major Trauma Lead Clinician	Self declaration
T16-2C-302	Trauma Group	Self declaration
T16-2C-303	Trauma Coordinator Service	Self declaration
T16-2C-304	Management of Spinal Injuries	TARN report

T16-2C-305	**Management of Multiple Rib Fractures**	**TARN report**
T16-2C-306	**Management of Musculoskeletal Trauma**	**TARN report**
T16-2C-307	**Designated Specialist Burns Care**	**Self declaration**
T16-2C-308	**Trauma Unit Agreement to the Network Repatriation Policy**	**Self declaration**
T16-2C-309	**Patient Experience**	**Self declaration**
T16-2C-310	**Discharge Summary**	**Self declaration**
T16-2C-311	**The Trauma Audit and Research Network (TARN)**	**TARN report**
T16-2C-312	**Rate of Survival**	**TARN Report**
Rehabilitation Quality indicators		
Number	**Indicator**	**Data source**
T16-2D-301	**Rehabilitation Coordinator**	**Self declaration**
T16-2D-302	**Access to Rehabilitation Specialists**	**Self declaration**
T16-2D-303	**Rehabilitation Prescriptions**	**TARN report**

MAJOR TRAUMA QUALITY INDICATORS FOR TRAUMA UNITS – *Descriptors*

Reception and Resuscitation			
Number	**Indicator**		**Data source**
T16-2B-301	**Trauma Team Leader**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a trauma team leader of ST3 or above or equivalent NCCG, with an agreed list of responsibilities available within 5mins, 24/7. *There should also be a consultant available in 30 minutes.* *The trauma team leader should have been trained in Advanced Trauma Life Support (ATLS) or equivalent.* *There should be a clinician trained in advanced paediatric life support available for children's major trauma.*			*Operational policy including agreed responsibilities.* *TARN report*
T16-2B-302	**Emergency Trauma Nurse/ AHP**		**TARN report**
Descriptor		*Notes*	*Evidence required*
There should be a nurse/AHP available for major trauma 24/7 who has successfully attained or is working towards the adult competency and educational standard of level 2 as described in the National Major Trauma Nursing Group guidance. *In units which accept children;* *There should be a paediatric registered nurse/AHP available for paediatric*		*Guidance is found on the TQUINS resource page* [*Tquins resources*]	*Operational policy* *TARN report*

major trauma 24/7 who has successfully attained or is working towards the paediatric competency and educational standard of level 2 as described in the National Major Trauma Nursing Group guidance. *All nursing/AHP staff caring for a trauma patients should have attained the competency and educational standard of level 1. In units that accept paediatric major trauma, this should include the paediatric trauma competencies (as described in the National Major Trauma Nursing Group guidance).*		
T16-2B-303	**Trauma Team Activation Protocol**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a trauma team activation protocol *The trauma team should include medical staff with recognised training in paediatrics and paediatric trained nurses with experience in trauma.*		*Operational policy including the protocol.*
T16-2B-304	**Agreement to Network Transfer Protocol from Trauma Units to Major Trauma Centres**	**TARN report**
Descriptor	*Notes*	*Evidence required*
The trauma unit should agree the network protocol for the transfer of patients from trauma unit to major trauma centre.		*Operational policy*
T16-2B-305	**24/7 CT Scanner Facilities**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be CT scanning available within 60 minutes of the trauma team activation.	*Whole body CT is the diagnostic modality of choice where adult patients are stable enough for transfer to CT.*	*Operational policy* *TARN report*

T16-2B-306	CT Reporting	TARN report
Descriptor	*Notes*	*Evidence required*
There should be a protocol for trauma CT reporting that specifies there should be a provisional report within 60 minutes.		*Operational policy* *TARN report*
T16-2B-307	**Teleradiology Facilities**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The trauma unit should have an image exchange portal that enables immediate image transfer to the MTC 24/7.		*Operational policy specifying details of portal used*
T16-2B-308	**24/7 Access to Surgical Staff**	**TARN report**
Descriptor	*Notes*	*Evidence required*
The following staff should be available within 30 minutes 24/7: • *a general surgeon ST3 or above, or equivalent NCCG;* • *a trauma and orthopaedic surgeon ST3 or above or equivalent NCCG;* • *an anaesthetist ST3 or above or equivalent NCCG.*		*Operational policy* *TARN report* *Medical staffing rotas should be available for PR visit.*
T16-2B-309	**Dedicated Orthopaedic Trauma Operating Theatre**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be dedicated trauma operating theatre lists with appropriate staffing available 7 days a week.		*Operational policy Including the specified*

The lists must be separate from other emergency operating.		*number of hours per week*
T16-2B-310	**24/7 access to Emergency Theatre and Surgery**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be 24/7 access to a fully staffed and equipped emergency theatre. *Patients requiring acute intervention for haemorrhage control should be in an operating room or intervention suite within 60 minutes.*		*Operational policy* *TARN report*
T16-2B-311	**Trauma Management Guidelines**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The trauma unit should agree the network clinical guidelines specified in T16-1C-107 *The trauma unit should include relevant local details.*		*Operational policy.*
T16-2B-312	**Transfusion Protocol**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a protocol for the management of massive transfusion in patients with significant haemorrhage.		*Operational policy*

T16-2B-313	Administration of Tranexamic Acid	TARN report
Descriptor	*Notes*	*Evidence required*
Patients with significant haemorrhage should be administered Tranexamic Acid within 3 hours of injury and receive a second dose according to CRASH-2 protocol.		*TARN report*
Definitive Care		
Number	**Indicator**	**Data source**
T16-2C-301	**Major Trauma Lead Clinician**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a lead clinician for major trauma, who should be a consultant with managerial responsibility for the service and a minimum of 1 programmed activity specified in their job plan.		*Operational policy*
T16-2C-302	**Trauma Group**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The TU should have a trauma group that meets at least quarterly. *The membership should include:* • *major trauma lead clinician;* • *executive board representation;* • *ED medical consultant* • *ED nurse* *representation from:*		*Operational policy*

• *radiology* • *surgery* • *anaesthetics* • *critical care* • *trauma orthopaedic surgeons*			
T16-2C-303	**Trauma Coordinator Service**		**Self declaration**
Descriptor		*Notes*	*Evidence required*
There should be a trauma coordinator service available Monday to Friday for the co-ordination of patients. *The coordinator service should be provided by nurse or allied health professionals.*		*This post can be shared with the rehabilitation coordinator.*	*Operational policy Including the names of the coordinators.*
T16-2C-304	**Management of Spinal Injuries**		**TARN report**
Descriptor	*Notes*		*Evidence required*
The trauma unit should agree the network protocol for protecting and assessing the whole spine in adults and children with major trauma. *There should be a linked Spinal Cord Injury Centre (SCIC) for the MTC which provides an out-reach nursing and/or therapy service for patients with spinal cord injury within 5 days of referral.*		*If access to the SCIC outreach service is identified as an issue, audit data should be made available indicating the delays.*	*Operational policy* *TARN report* *Examples of ASIA charts and management plans should be available at PR visit*

T16-2C-305	**Management of Multiple Rib Fractures**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be network agreed local management guidelines for the management of multiple rib fractures including: • pain management including early access to epidural; • access to surgical advice. •		Operational policy TARN report
T16-2C-306	**Management of Musculoskeletal Trauma**	**TARN report**
Descriptor	*Notes*	*Evidence required*
There should be guidelines for: • *isolated long bone fractures;* • *early management of isolated pelvic acetabular fractures;* • *peri-articular fractures;* • *open fractures.* *The guidelines should include:* • *accessing specialist advice from the MTC;* • *imaging and image transfer;* • *indications for managing on site or transfer to the MTC.*	*Where there are nationally agreed guidelines, e.g. BOAST, it is recommended that these are adopted for use locally.* *Ref NICE Guideline – Major Trauma (NG39)*	*Operational policy* *TARN report*

T16-2C-307	Designated Specialist Burns Care	Self declaration
Descriptor	*Notes*	*Evidence required*
Burns care should be managed through a designated specialist burns network. *There should be a clinical guideline for the treatment of burns. This should include the referral pathway to the specialist burns centre.*		*The clinical guideline for treatment of burns including the referral pathway*
T16-2C-308	**Trauma Unit Agreement to the Network Repatriation Policy**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
The trauma unit should agree the network repatriation policy T16-1C-115 *There should be a protocol in place for identifying a speciality team to accept the patient. The protocol should include the escalation process in the event of there not being access to a specialty team.*		*Operational policy*
T16-2C-309	**Patient Experience**	**Self declaration**
The MTC should participate in the TARN PROMS and PREMS	*From 2017 the TARN Proms report will provide evidence of participation*	*Operational policy*
T16-2C-310	**Discharge Summary**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a discharge summary which includes: • *A list of all injuries* • *Details of operations (with dates)* • *Instructions for next stage rehabilitation for each injury (including*	*Nice guideline- Major Trauma (NG39)*	*Operational policy* *Examples of the discharge summary should be available for PR visit*

specialist equipment such as; wheel chairs, braces and casts) • *Follow-up clinic appointments* • *Contact details for ongoing enquiries.*		
T16-2C-311	**The Trauma Audit and Research Network (TARN)**	**TARN report**
Descriptor	*Notes*	*Evidence required*
The trauma unit should participate in the TARN audit. *The results of the audit should be discussed at the network audit meeting at least annually and distributed to all constituent teams in the network, the CCGs and area teams.*		*TARN report*
T16-2C-312	**Rate of Survival**	**TARN Report**
Rehabilitation		
Number	**Indicator**	**Data source**
T16-2D-301	**Rehabilitation Coordinator**	**Self declaration**
Descriptor	*Notes*	*Evidence required*
There should be a rehabilitation coordinator who is responsible for coordination and communication regarding the patient's current and future rehabilitation including oversight of the rehabilitation prescription. *This rehabilitation coordinator should be a nurse or allied health professional.*	*This role may be shared with the trauma co-ordinator role*	*Operational policy including name of the rehabilitation co-ordinator.*

T16-2D-302	Access to Rehabilitation Specialists	Self declaration
Descriptor	*Notes*	*Evidence required*
There should be the following allied health professionals with dedicated time to support rehabilitation of trauma patients: • *physiotherapist* • *occupational therapist;* • *speech and language therapist* • *dietician* *There should be specified referral and access pathways for* • *rehabilitation medicine consultant* • *pain management* • *psychology/neuropsychology assessment (1)* • *mental health/psychiatry* • *specialised rehabilitation* • *specialist vocational rehabilitation* • *surgical appliances* • *orthotics and prosthetics* • *wheel chair services.*		*Operational policy*

T16-2D-303	Rehabilitation Prescriptions	TARN report
Descriptor	*Notes*	*Evidence required*
All patients should receive a rehabilitation assessment including barriers to return to work. Where a prescription is required this should be completed within 72 hours. *The prescription should be updated prior to discharge and a copy given to the patient* *All patients repatriated from the MTC should have their prescription reviewed and updated at the trauma unit.*		*Operational policy TARN report*

Appendix

1.1 Definitions

In this document the definitions used are as follows.

Clinical Advisory Groups (CAGs) – Five clinical advisory groups were established in order to produce this advice, each covering a separate aspect of the care pathway as follows:

- Pre-hospital and inter-hospital transfers
- Acute Care and Surgery
- Ongoing Care & Reconstruction
- Rehabilitation
- Network Organisation (incl. governance)

Major Trauma – NHS Choice defines 'Major Trauma' as multiple, serious injuries that could result in disability or death. These might include serious head injuries, severe gunshot wounds or road traffic accidents. Major Trauma is defined in the scientific literature using the Injury Severity Score (ISS), which assigns a value to injuries in different parts of the body and totals them to give a figure representing the severity of injury. An ISS greater than 15 is defined as Major Trauma. This would include serious injuries such as bleeding in the brain or a fracture of the pelvis and cases of multiple injuries; however, this definition does not include all those who should benefit from the regionalisation of trauma care.

This document refers to severely-injured patients, meaning those who have suffered potentially life-threatening or life-changing physical injuries, i.e. all those who could benefit from regional networks. Psychosocial consequences of such injuries are common but patients suffering such symptoms in isolation without injury as a result of a "traumatic experience" are not covered.

Inclusive Trauma System – An Inclusive Trauma System (ITS) describes a model in which commissioners; providers, public health representatives and other stakeholders of trauma care in a geographical region collaborate to plan, provide and manage the treatment of people injured as a result of Major Trauma.

The ITS is responsible for all aspects of trauma care, from the point of injury to rehabilitation, as well as for injury prevention. Each ITS comprises of one or more 'Trauma Networks' (see definition below). The ITS also features:

- a population-based approach to the assessment of need and the provision of treatment.
- a role for every hospital and provider of care.
- provision for the speedy transfer of patients between facilities, particularly where the severely injured have been under triaged away from the Trauma Centre.
- a quality assurance structure that penetrates across the region and to each stage of care, which underpins providers' clinical governance processes, identifies inadequate performance in order to support its correction and ultimately can apply sanctions where this does not occur. It also informs commissioners about the quality of care being delivered.

The Royal College of Surgeons advises that the ITS should have in place a plan which sets out the

detail of the 'Trauma Care Pathway' (TCP) for the region.

Trauma Care Pathway – This is the process through which care is provided for patients who have suffered Major Trauma; specifically, it describes the 'the location and capability of each trust/hospital within the ITS and outlines ambulance bypass protocols and thresholds for transferring patients to more specialist units'.

Trauma Network – A Trauma Network (TN) is the name given to the collaboration between the providers commissioned to deliver trauma care services in a geographical area. At its heart is the 'Major Trauma Centre'. A TN should include *all* providers of trauma care, particularly: pre-hospital services, other hospitals receiving acute trauma admissions (Trauma Units), and rehabilitation services. The TN has appropriate links to the social care and the voluntary/community sector. While individual units retain responsibility for their clinical governance, members of the Network collaborate in a Quality Improvement programme.

Major Trauma Centre – A Major Trauma Centre (MTC) is a multi-specialty hospital, on a single site, optimised for the provision of trauma care. It is the focus of the Trauma Network and manages all types of injuries, providing consultant-level care.

- It is optimised for the definitive care of injured patients. In particular it has an active, effective trauma Quality Improvement programme. It also provides a managed transition to rehabilitation and the community.
- It takes responsibility for the care of all patients with Major Trauma in the area covered by the Network. It also supports the Quality Improvement programmes of other hospitals in its Network.
- It provides all the major specialist services relevant to the care of major trauma, i.e. general, emergency medicine, vascular, orthopaedic, plastic, spinal, maxillofacial, cardiothoracic and neurological surgery and interventional radiology, along with appropriate supporting services, such as critical care.

The Royal College of Surgeons cite research advising that such centres should admit a minimum of 250 critically injured patients per year

Trauma Unit – A Trauma Unit (TU) is a hospital in a Trauma Network that provides care for most injured patients and:

- is optimised for the definitive care of injured patients. In particular, it has an active, effective trauma Quality Improvement programme. It also provides a managed transition to rehabilitation and the community.
- has systems in place to rapidly move the most severely injured to hospitals that can manage their injuries.
- may provide some specialist services for patients who do not have multiple injuries (e.g. open tibial fractures). The Trauma Unit then takes responsibility for making these services available to patients in the Network who need them. Other Trauma Units may have only limited facilities, being able to stabilise and transfer serious cases but only to admit and manage less severe injuries.

Local Emergency Hospital (not designated as TU) – The Local Emergency Hospital (LEH) is a hospital in a Trauma Network that does not routinely receive acute trauma patients (excepting minor injuries that may be seen in an MIU). It has processes in place to ensure that should this occur patients are appropriately transferred to an MTC or TU. It may have a role in the rehabilitation of trauma patients and the care of those with minor injuries.

1.2 Glossary

ASIA	American Spinal Injury Association
BASICS	British Association for Immediate Care
BOAST	British Orthopaedic Association Standard for Trauma
CAG	Clinical Advisory Group
CCG	Clinical Commissioning Group
CRASH-2 Trial	Clinical Randomisation of an Antifibrinolytic in Significant Haemorrhage
CT	Computerised Tomography
EVAR	Endovascular Aneurysm Repair
HEMS	Helicopter Emergency Ambulance Service
ICNARC	Intensive Care Audit and Research Centre
ISS	Injury Severity Score
ICU /ITU	Intensive Care Unit
MERIT	Medical Emergency Response Incident Team
MRI	Magnetic Resonance Imaging
MTC	Major Trauma Centre
MTN	Major Trauma Network
PACS	Picture Archiving and Communication System
PICNET	Paediatric Intensive Care Network
PICU	Paediatric Intensive Care Unit
RCPCH	Royal College of Physicians in Child Health
SCI	Spinal Cord Injury
TARN	Trauma Audit and Research Network
TU	Trauma Unit