# North of Scotland Trauma Network

# Strategic Plan 2023-28

# Contents

# 1 Executive Summary

**1.1** The North of Scotland Trauma Network, comprising the healthcare services within the NHS health boards of Grampian, Highland, Orkney, Shetland and the Western Isles as well as the Scottish Ambulance Service, went live in October 2018. It covers 60% of the land mass of Scotland but with only 16% of its population. The Network deals with approximately 15% of all trauma in Scotland, equating to over 200 major trauma and 550 moderate trauma cases a year.

**1.2** The Network Board commissioned a strategic review in December 2022 to build on successes of the first 5 years and formalise a unified Network strategic plan for 2023-28. The objectives of the planning process were to provide focus and clarity of direction for the Network and stakeholders, ensure that the Network continues to provide outstanding care to patients and to support our stakeholders to deliver excellent outcomes.

**1.3** Throughout 2023 all hospitals within the Network were visited. In addition, the team engaged with prehospital elements of the Network (including the Scottish Ambulance Service, EMRS and PICT) and specialist rehabilitation facilities to ensure a comprehensive picture of the Network was formed. A SWOT analysis was conducted to help inform the planning process. From this a draft strategic plan was produced and distributed for consultation. The plan was ratified by the Board in December 2023.

**1.4** In terms of performance, the Network consistently performs very well in several areas especially with regards to specialist care referral and rehabilitation planning. There are however a small number of areas where Network performance continues to be suboptimal, particularly surrounding CT reporting. Significant work continues to try and improve the current situation, although the solutions largely lie outwith the capability of the Network.

**1.5** Mortality data for Scottish hospitals show that Aberdeen Royal Infirmary (MTC) and Raigmore Hospital (TU) continue to perform better than predicted with mortality modelling.

**1.6** Funding was received from Scottish Government to implement the NoS TN over a seven year phased period. This funding has now been baselined to health boards for 2023/34. Unfortunately, the final tranche of funding to complete the model of care planned for the region has not been forthcoming from Scottish Government. This will potentially mean parts of the STN Minimum Requirements are unable to be met.

**1.7** The overall aim of the STN is 'Saving lives. Giving life back.' To date, the NoS TN has not had a simple stated aim that encapsulates the purpose of the Network and gives focus for those involved within. A proposed aim is: Prevent, Treat, Rehabilitate.

**1.8** Undoubtedly, the activity and output from the NoS TN has improved trauma care within the region. It has aligned well with the national aim of rehabilitation and sought to improve quality of life through the introduction of rehabilitation plans. A coordinated approach to prehospital care has been established, ensuring trauma patients receive treatment and transfer to appropriate healthcare facilities as rapidly as possible. Acute in-hospital trauma management has been bolstered with tailored education and training across the region and a robust governance

framework has been established. The Network's activities have also benefited those patients with minor and moderate trauma as skills, knowledge and experience have been gained. There are also wider benefits to patients and staff outwith the trauma sphere.

**1.9** The strategic review identified a number of short (2023/24) and medium (2025-2028) term strategic objectives to address the challenges faced and ensure that the Network fulfils its role in achieving its mission and objectives. These tie in with the regional recommendations outlined in the Review Report Scottish Trauma Network (STN) March 2023.

**1.10** The 6 strategic objectives are:

- Deliver consistently excellent care for all trauma patients in the North of Scotland
- Develop a robust, accessible and dynamic governance structure to drive service development
- Refine the Network structure to ensure it remains lean, efficient and adaptive
- Develop a high quality teaching and training programme for all involved in trauma management
- Collaborate with all Scottish trauma stakeholders to provide outstanding patient care pathways
- Ensure Network resources and information are easily accessible and fit for purpose

# 2 Introduction

The North of Scotland Trauma Network (NoS TN), comprising the healthcare services within the NHS health boards of Grampian, Highland, Orkney, Shetland and the Western Isles as well as the Scottish Ambulance Service, went live in October 2018. It is one of 4 regional Networks all working in collaboration with the Scottish Ambulance Service to provide trauma care to the population of Scotland.

The NoS TN covers 60% of the land mass of Scotland but with only 16% of its population. The seasonal variation in population and trauma numbers related to the burgeoning tourist industry add to the unique challenges of ensuring patients receive timely and effective trauma management. The ongoing need for a cooperative and synergistic network is obvious.

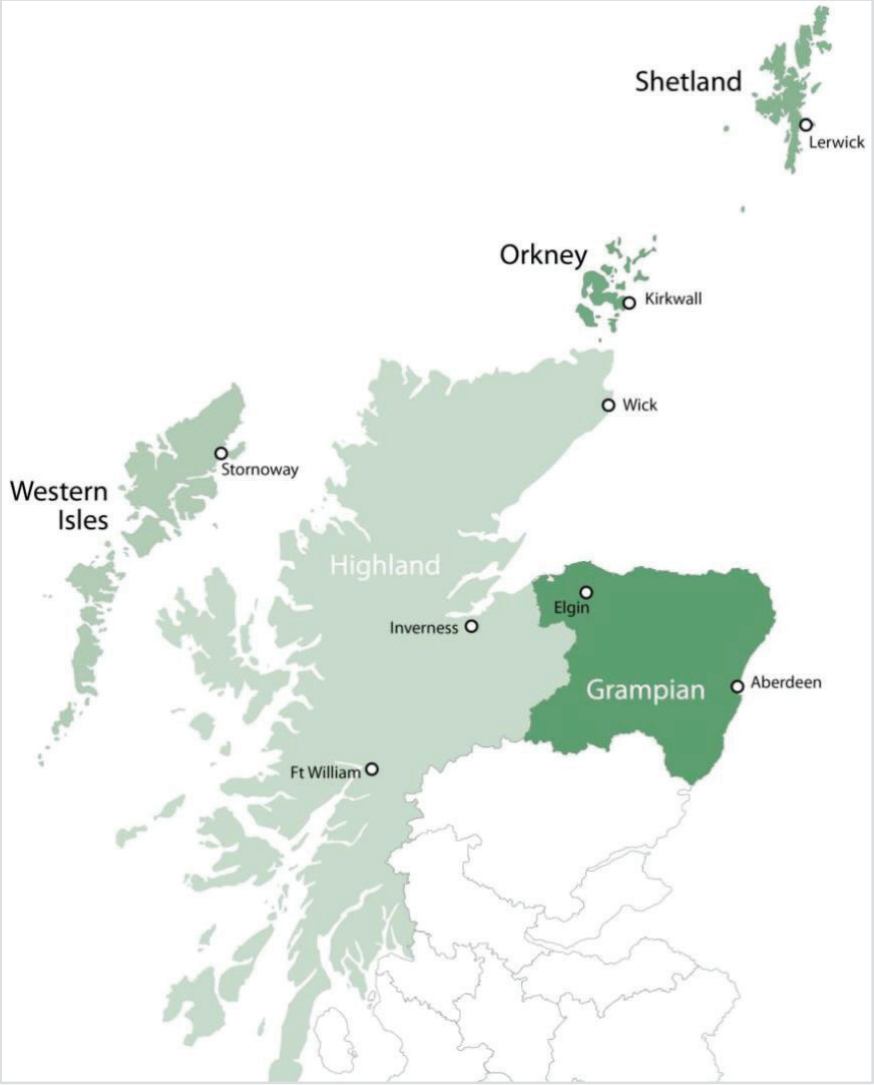



Figure 1. North of Scotland Trauma Network geography

The stated aims of the NoS TN are to ensure quicker access to major trauma care by early identification of patients affected by trauma and maintain specialist trauma teams that ensure person centred co-ordinated care for patients affected by trauma. It does this by supporting and enabling staff and listening to and working with patients and their families.

Since its inception 5 years ago, formal staff consultations with ongoing clinical and managerial leadership have provided direction for the Network and guided it to where it is today. Despite the ongoing challenges faced by the NHS, including an aging population with increasing complex needs, staff shortages and significant financial constraints, much has been achieved. When considered in the context of the recent COVID-19 pandemic there are reasons to be proud. In many areas the NoS TN is performing at or above the national average and continues to seek ways to improve the lives of those who suffer major trauma.

In light of this, the Network Board commissioned a strategic review in December 2022 to build on these successes and formalise a unified Network strategic plan for 2023-28 that is informed and supported by the multidisciplinary Network team and its stakeholders. This plan reflects the output from the review and takes into account that the network is moving from its implementation phase to a more mature clinical collaborative network.

# 3 Strategic planning process

## 3.1 Objectives of the strategic planning process

- Provide focus and clarity of direction for the Network and stakeholders
- Ensure that the Network continues to provide outstanding care to patients
- Support our stakeholders to deliver excellent outcomes

## 3.2 Methodology

From December 2022 through to October 2023, Dr Tim Hooper, Network clinical lead, Anne-Marie Pitt, Network manager and Lesley Staples, Network rehabilitation lead, visited all hospitals within the Network. This included both in-hospital and community based teams, especially rehabilitation providers. In addition, the team engaged with prehospital elements of the Network (including the Scottish Ambulance Service, EMRS and PICT) and specialist rehabilitation facilities (Woodend Hospital) to ensure a comprehensive picture of the Network was formed.

Each visit had a structured approach (Appendix 9.1) to ensure all important areas of trauma care were covered. The general format consisted of meetings with key personnel and those in positions of responsibility, a walkthrough of the patient pathway and an open Q&A session. The visit provided an up to date understanding of the hospital's facilities and resources, but more importantly allowed staff to highlight areas of excellence and where improvements were needed. It also provided a platform for stakeholders to express what they wanted from the Network and how they would like it to evolve. A summary of all visits and individual hospital reports can be found in Appendix 9.2 and 9.3 respectively.

A first draft of the Network Strategic Plan 2023-2028 document was prepared in May 2023 utilising the feedback from the assurance visits and previous Network strategy documents, set in the context of the Network Implementation Plan 2016 and Network Improvement Plan 2019-2023, the Scottish Trauma Network (STN) minimum requirements, the STN review report March 2023 and other national guidelines.

Review and revisions of the Network Strategic Plan 2023-2028 by clinical staff, stakeholders and managers occurred during latter half of 2023. The final version of the Network Strategic Plan 2023-2028 was presented to the Network Board in December 2023 and published thereafter.

An overview of the strategic review process is outlined in Figure 2. below:

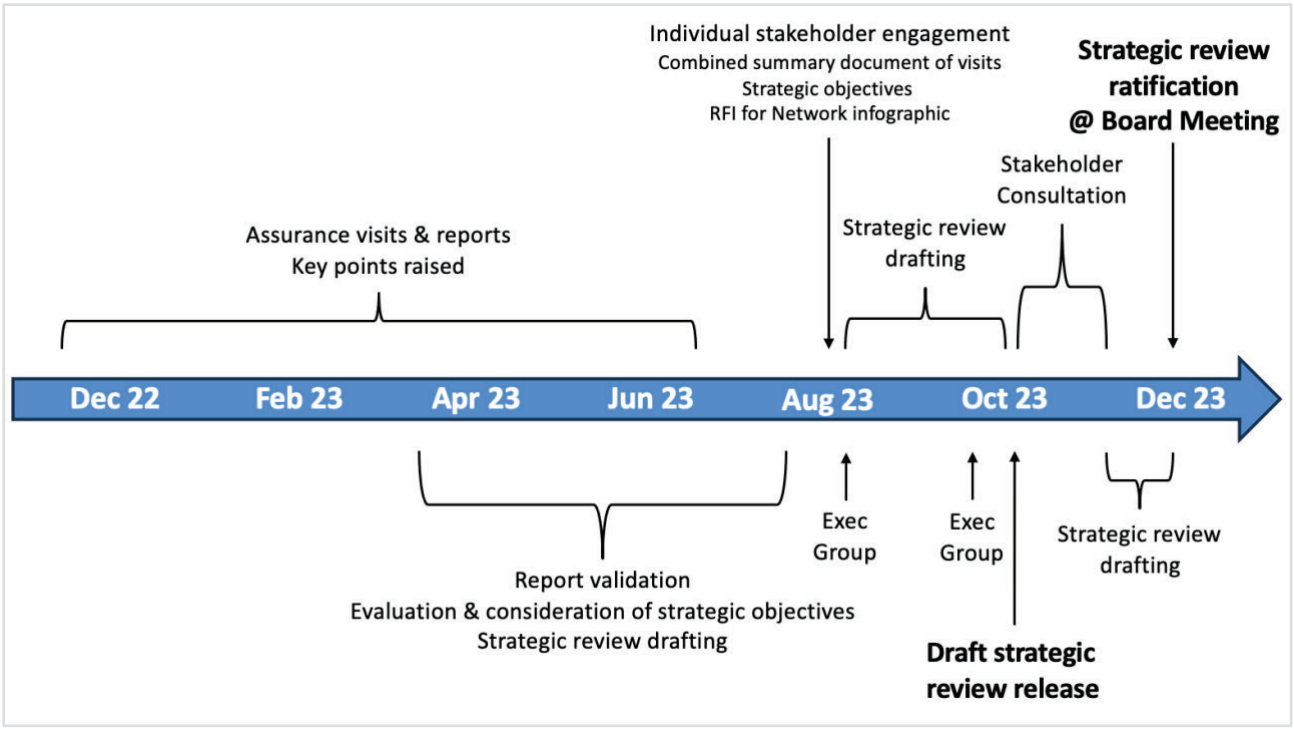



Figure 2. Overview of strategic review process

# 4 Network

## 4.1 Background

- Demographics in terms of land mass and population
    - 46,000 km$^2$ (approximately 60% of Scotland land mass, including 3 archipelagos with 87 inhabited islands)
    - 890,000 people (16% of Scottish population) with 40% living in rural or remote areas
    - Large seasonal variation in population secondary to tourism industry
    - Deals with approximately 15% of trauma in Scotland

## 4.2 Network medical facilities

### 4.2.a Prehospital

- Scottish Ambulance Service (SAS)
- ScotSTAR Emergency Medical Retrieval Service (EMRS)
- Prehospital Immediate Care and Trauma Team (PICT)
- BASICS Scotland
- Search and Rescue
- Coastguard
- Mountain Rescue

### 4.2.b Hospitals

- Aberdeen Royal Infirmary (Major Trauma Centre - MTC)
- Royal Aberdeen Children's Hospital (Paediatric MTC)
- Raigmore Hospital, Inverness (Trauma Unit - TU)
- Dr Gray's Hospital, Elgin (Local Emergency Hospital - LEH)
- Belford Hospital, Fort William (LEH)
- Caithness General Hospital, Wick (LEH)
- Western Isles Hospital, Stornoway (LEH)
- Belfour Hospital, Kirkwall, Orkney (LEH)
- Gilbert Basin Hospital, Lerwick, Shetland (LEH)
- Broadford Hospital, Skye (Rural General Hospital - RGH)

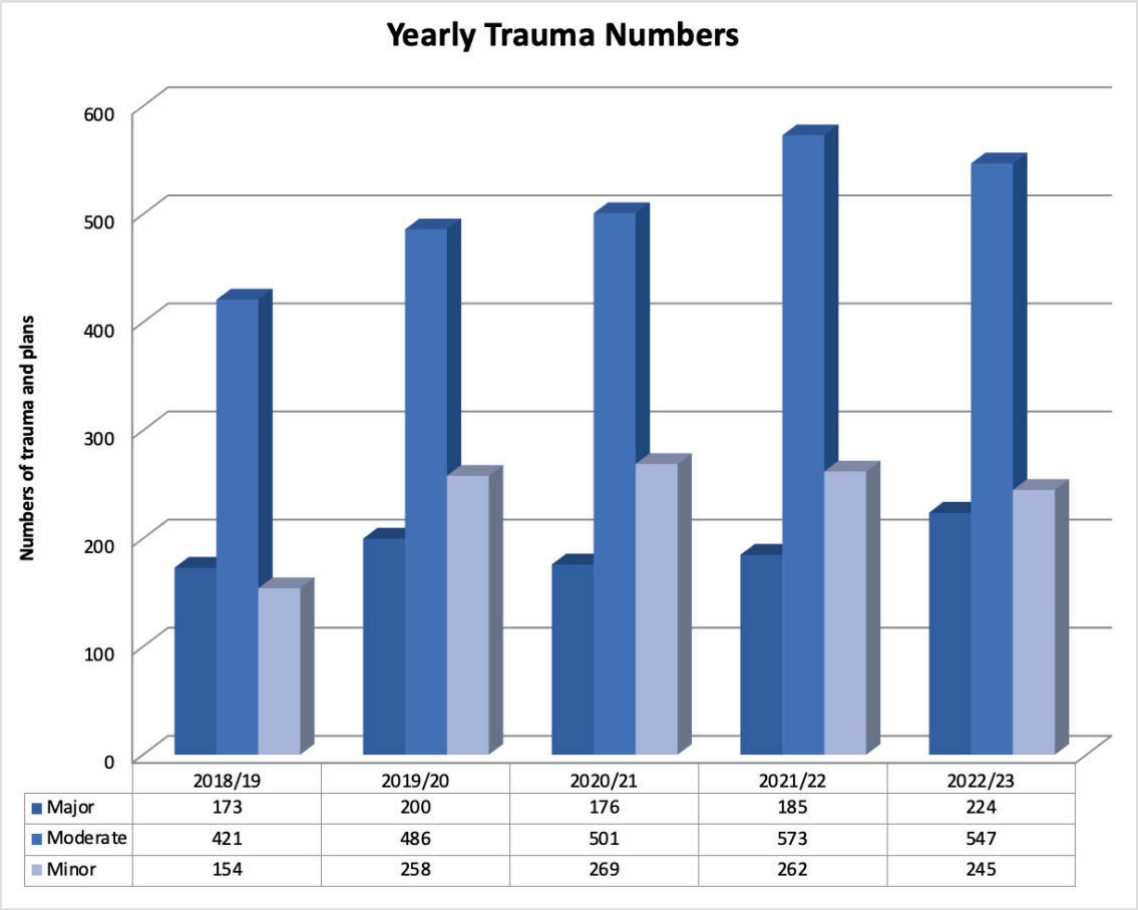
### 4.2.c Rehabilitation

- The hospitals and Health and Social Care Partnerships in each area provide both in-patient and community based rehabilitation teams including physiotherapy and occupational therapy. Additional resources including clinical psychology, speech and language therapy, dietetics, orthotics and prosthetic provision are available in some areas
- Woodend Hospital accommodates both the Neurorehabilitation unit (NRU) and Orthopaedic rehabilitation unit (ORU) serving the NHS boards of Grampian, Shetland and Orkney

## 4.3 Network clinical activity

### 4.3.a Clinical Activity

- There are approximately 200 major trauma cases (defined as an in injury severity score [ISS] >15) each year in the North of Scotland. Prior to the Network being established, modelling suggested there were approximately 120 cases a year. Clearly this was an underestimate
- Whilst there is inter year variability in major and moderate (ISS 9-14] trauma numbers, taken as a whole, clinical activity has shown a year-on-year increase since the Network began




| | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---|---|---|---|---|---|
| Major | 173 | 200 | 176 | 185 | 224 |
| Moderate | 421 | 486 | 501 | 573 | 547 |
| Minor | 154 | 258 | 269 | 262 | 245 |

Figure 3. Network trauma patient numbers

- The injury severity score is a retrospective scoring system used to define trauma severity. It does not always reflect clinical input in terms of resources and time and therefore absolute numbers do not necessarily represent activity. As an example, a patient with a moderate traumatic brain injury (perhaps ISS 9) may have ongoing complex rehabilitation needs utilising significant resources
- Another marker of activity is the number of rehabilitation plans developed with patients and their families in the MTCs and TU. These plans are not just written for major trauma patients but include any patient with ongoing complex rehabilitation needs
- Figure 4. shows the ongoing increasing activity. It should be noted that the Network began in October 2018 and therefore 2018 activity only reflects half a year


Figure 4. Network trauma rehabilitation plans

# 4.4 Performance

## 4.4.a Key performance indicators

- The STN created minimum requirements for the regional networks in order to provide a framework for services to be developed. These can be found at Appendix 9.4
- The Scottish trauma audit group (STAG), part of the Scottish national audit programme (SNAP), have developed key performance indicators (KPIs) to help map performance
- Data for non KPI markers of performance, including mortality, are also collected and analysed by STAG

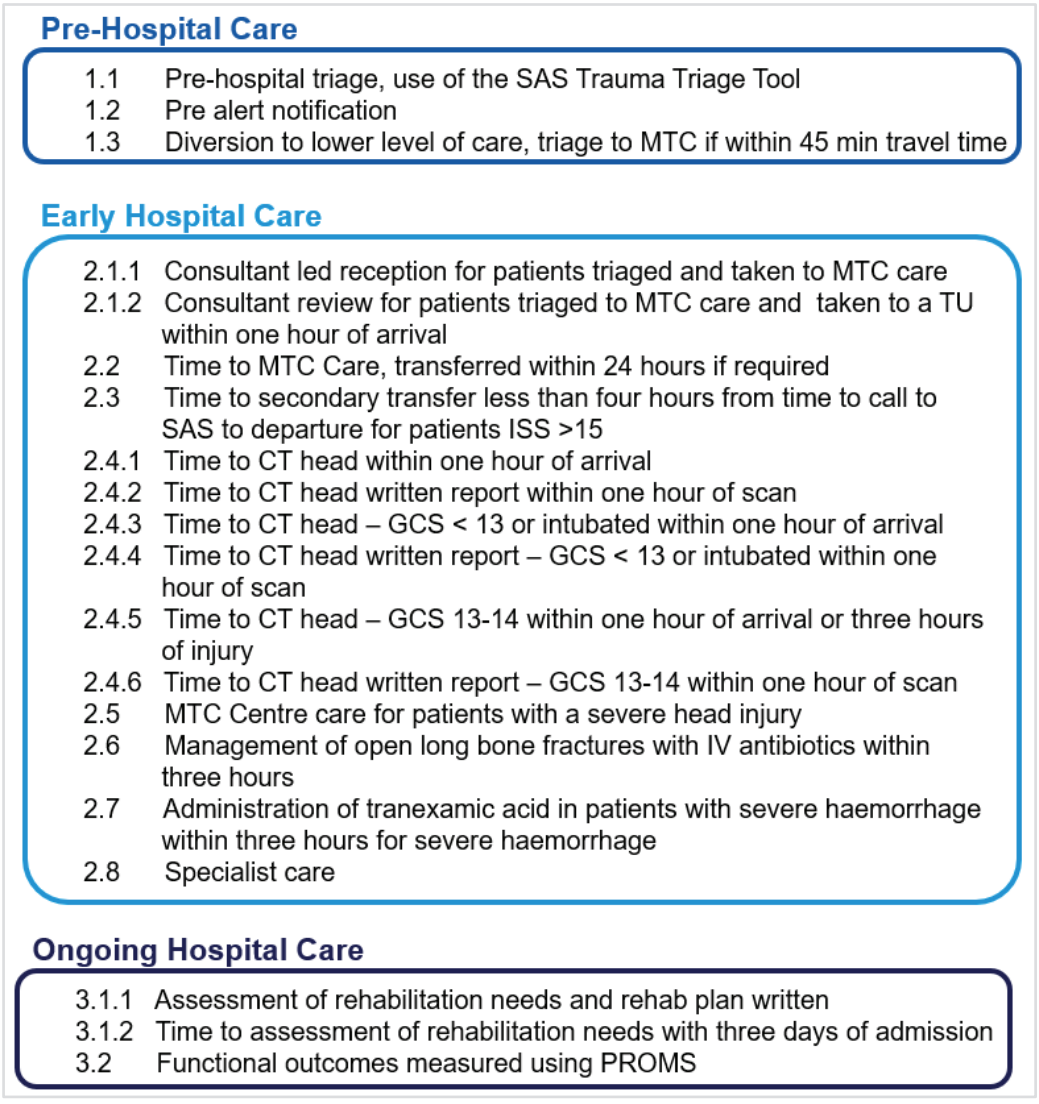



Figure 5. STAG key performance indicators

- The Network performance for some of the KPIs in the last year (Apr 22 – Mar 23) can be seen below:

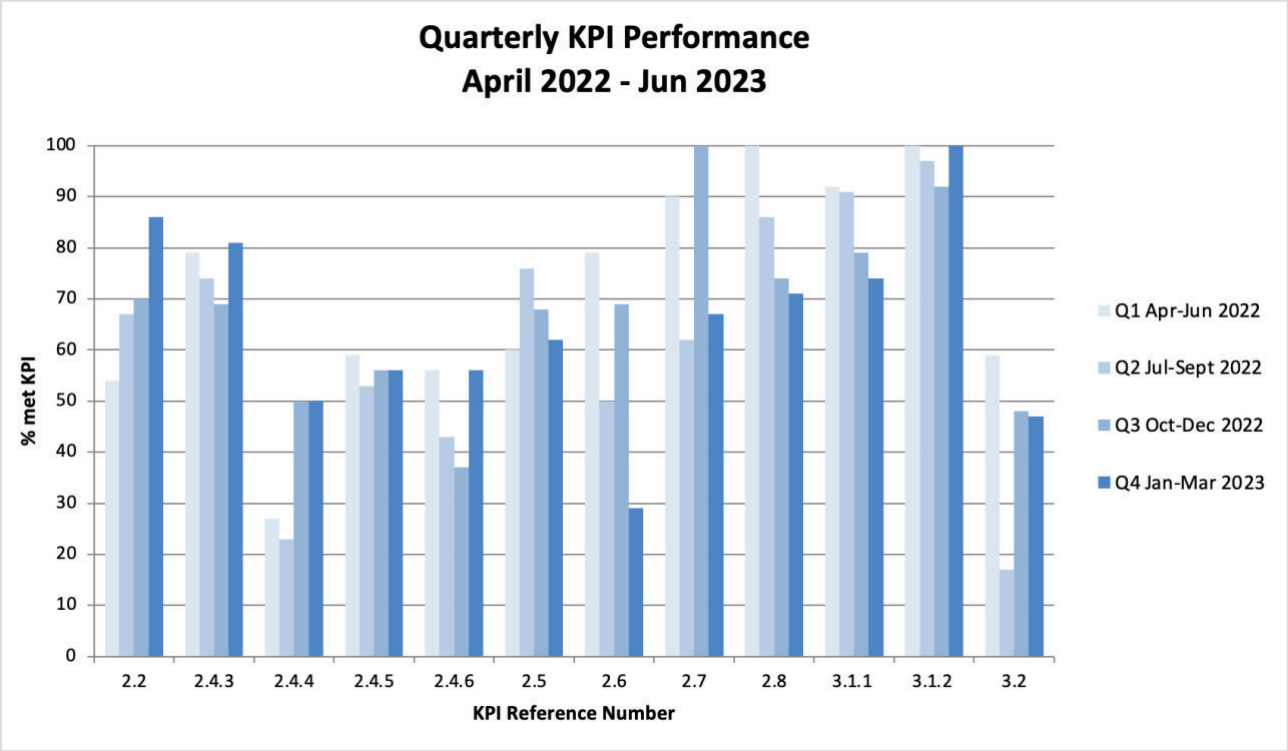



Figure 6. Network STAG KPI performance

### 4.4.b Areas of high and low performance

- The Network consistently performs very well in a number of areas including: Performing a CT scan in those patients with likely severe traumatic brain injury (KPI 2.4.3 – Time to CT in those with GCS <13/intubated); Referral to specialist care where indicated (KPI 2.8); Rehabilitation needs assessed and plans written within the specified timeframe (KPI 3.1.1 & 3.1.2)
- There are a small number of areas where Network performance continues to be suboptimal. Both timely reporting of CT head scans (KPI 2.4.4 & 2.4.6) and patient functional outcome measurement (KPI 3.2) remain areas for continued focus. Significant work continues to try and improve the time taken for CT reporting in the most severely injured patients. However, the solutions largely lie outwith the capability of the Network

### 4.4.c Mortality

- Mortality data for Scottish hospitals who have had more than 50 trauma patients over the period 2020-22 can be seen in Figure 7. These and other data are publicly available via the Public Health Scotland website
- The revised w-statistic is used and shows the number of excess survivors per 100 patients i.e. actual survivors against predicted, adjusted for hospital case-mix variation
- Hospitals above the zero line show better than expected survival. Within the NoS TN these hospitals include Aberdeen Royal Infirmary (MTC) and Raigmore Hospital (TU)

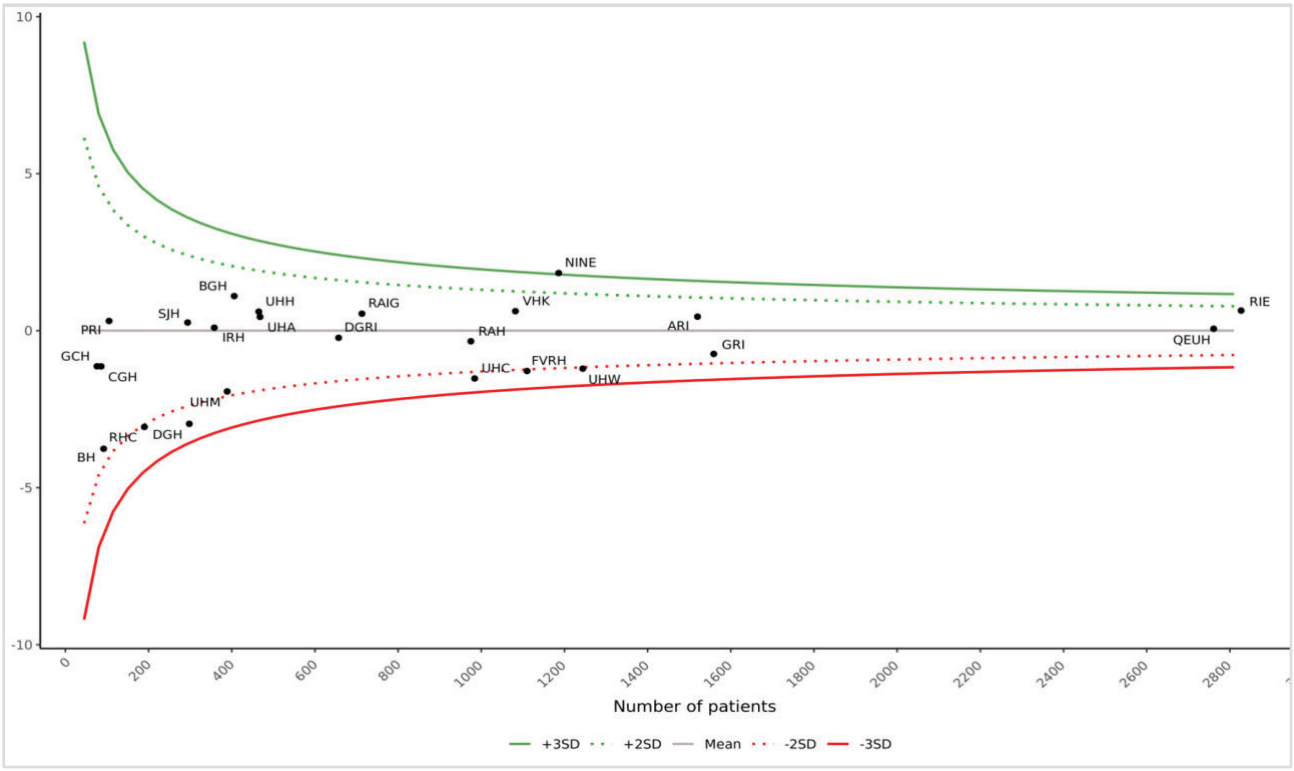



Figure 7. Mortality data for Scottish hospitals 2020-22

## 4.5 Network income and expenditure

- Funding was received from Scottish Government to implement the NoS TN over a seven year phased period. The adult and paediatric MTCs, TU (including the PICT prehospital service), LEHs, and specialist rehabilitation services across the North of Scotland have received parts of this funding to build major trauma services and adapt facilities to provide care across the patient pathway

| Year | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|---|---|---|
| **Revenue (£)** | 293,825 | 2,458,473 | 3,475,621 | 3,751,336 | 3,908,248 | 4,363, 605 | 4,877,090 |

Figure 8. Yearly Network Revenue

- Unfortunately, additional funding (totalling £1.4M) for new posts to complete the model of care planned for the region, expected in the final year of the phased funding (2023-24), has not been forthcoming from Scottish Government. This will potentially mean parts of the STN Minimum Requirements are unable to be met

## 4.6 Other significant stakeholders

- Patients and families
- Staff
- Scottish Trauma Network

- Other regional trauma networks
    - East (Dundee)
    - South East (Edinburgh)
    - West (Glasgow)
        - Collaboration with the WoS TN is particularly important as major trauma patients from Fort William, Skye and the Western Isles are frequently transferred to Glasgow MTC
- National specialist services including spinal injuries and burns
- Scottish Government

# 5 Network achievements 2017-22

## 5.1 Network vision

The vision of the NoS TN is that; 'Every person who experiences major trauma receives responsive, high quality, safe and effective person centred care from the point of first contact through to recovery. The delivery of care will be provided through a robust multi-professional/multi-agency network approach ensuring that care is co-ordinated around the individual's needs. The focus of all professionals and agencies contributing to the individuals care is around maximising clinical/health outcomes, ensuring the best possible experience for individuals and their families/carers, whilst minimising the long term impact and maximising quality of life'.

This compliments the mission statement of the STN: 'Improve and optimise the health and wellbeing of the traumatically injured. Helping them, their families, each other and our nation. Pioneering clinical excellence, health intelligence, innovation, education and research'.

## 5.2 Network aim

The overall aim of the STN is 'Saving lives. Giving life back.' To date, the NoS TN has not had a simple stated aim that encapsulates the purpose of the Network and gives focus for those involved within. A proposed aim is:

**Prevent**
**Treat**
**Rehabilitate**

## 5.3 Network roles

During the planning phase of the Network four specific roles were proposed. These were:

- Deliver the agreed NoS vision for major trauma to reduce avoidable deaths by 20-30%, improve functionality, health and psychosocial wellbeing of affected individuals, thus increasing quality of life of those injured
- Support each other locally and regionally through the planning and delivery of emergency preparedness for both local Board major incidents and national incidents of mass casualties
- Support clinical teams across the NoS in the delivery of major trauma patient care
- Contribute to the function of an inclusive national major trauma network which both maximises individual patient care and provides the national response to mass casualties in a time and resource efficient manner

## 5.4 Progress and achievements

The Network has implemented the majority of the STN Minimum Requirements. These lay out the necessary components for a Trauma Network, MTCs, TUs, and trauma rehabilitation services from acute through to care at home or in the community for both adult and paediatric patients. There are a small

number of minimum requirements that are at risk or cannot be achieved unless the additional funding planned for 2023/24 is forthcoming from Scottish Government. The most significant of these are the provision of equitable rehabilitation resources throughout the Network and continued provision of consultant led reception of trauma patients in the MTC. Timely reporting of CT scans also remains a significant risk across the Network.

Performance against the STN key performance indicators (see 4.4) has slightly progressed over the years since opening as a Network in 2018 for the majority of the indicators. However, the COVID-19 pandemic meant staff and services needed to be temporarily reconfigured leading to a reduction in performance in 2021.

Patient feedback information has been collected in the adult MTC since 2019 to help shape services. The overall patient experience over the four years until the end of 2022 has been highly positive. Patient feedback information is now also being gathered in specialist rehabilitation settings, in the community and at the TU and fed back into the trauma multi-disciplinary teams to effect change where necessary and provide positive feedback to staff.

The progress made in all aspects of major trauma care can be seen in the Network annual reports for each year. A summary of annual activity is highlighted below:

- 2018/19: Opening of the MTCs (adult & paediatric) and TU creating the first regional trauma network in Scotland. Single point of contact system using one telephone number for accessing the MTC and organising retrievals was established. ED trauma calls and inpatient trauma teams established at the MTC and TU with appointment of trauma coordinators. Rehabilitation plans for individual patients within three days of admittance implemented. Specialist rehabilitation teams appointed in the MTC and TU and a comprehensive education programme rolled out for staff across the Network
- 2019/20: Development of patient information and feedback processes. Focus on paediatric and rehabilitation pathways and roles. Network performance reporting and improvement planning established. NoS TN event showcasing progress so far and including keynote speakers and education workshops. Education programme delivery for general and specialist trauma training including shadowing opportunities for island staff and, latterly in the year, COVID-19 contingency planning
- 2020/21: Focus on reconfiguration of services in response to COVID-19 with maintenance of key functions. Response to the Carmount passenger train derailment major incident. Development of CT radiology protocols, e-rehabilitation plans and twelve-month trial for a seven-day Pre-Hospital Immediate Care and Trauma (PICT) service in NHS Highland. Revision of the Network case review process and expansion of the communications process by launching the Network website and continued use of newsletters and social media
- 2021/22: Despite increasing pressures in the NHS, the Network continued to provide a comprehensive education programme and developed services. These included the creation of a MTC multidisciplinary outpatient follow-up clinic, a trial of MTC polytrauma beds in HDU following the redeployment of the polytrauma ward for COVID-19 use and increased specialist rehabilitation posts in the northern Highlands. A network wide paediatric head injury pathway was implemented as well as community patient experience feedback. The Network governance framework was revised and a short film made to celebrate the progress made in the 3 years since launching

- 2022/23: Skills development continued to be a focus with the paediatric MTC team providing bespoke training to rural hospitals across the network, development of a paediatric trauma nursing competency framework and finalising a person specific programme for rural practitioners to attend the paediatric MTC. The Network held its first in-person event since COVID-19 which provided a number of education workshops and a rib-rescue course was launched. The TU established a multidisciplinary case review process and carried out a series of visits by the trauma team to rural hospital and community settings to improve communication. The MTC carried out a gap analysis against new NICE trauma rehabilitation guidelines and implemented an improvement plan. The Network team was commissioned to begin a strategic review and began a series of assurance visits to hospitals and specialist rehabilitation services. Visit by the Cabinet Secretary for Health and Social Care to discuss the NoS rehabilitation pathway and meet trauma patients attending an outpatient rehabilitation centre

## 5.5 Network Impact

Undoubtedly, the activity and output from the NoS TN has improved trauma care within the region. It has aligned well with the national aim of rehabilitation and sought to improve quality of life through the introduction of rehabilitation plans. Given the geography of the North, a coordinated approach to prehospital care, using multiple stakeholders (SAS, ScotSTAR EMRS, PICT, BASICS, Search and Rescue etc.), has been established ensuring trauma patients receive treatment and transfer to appropriate healthcare facilities as rapidly as possible.

Acute in-hospital trauma management has been bolstered with tailored education and training across the region. A robust governance framework has been established and lines of communication continue to be refined to ensure information and knowledge transfer is made as easy as possible.

The Network has also benefited those patients with minor and moderate trauma as skills, knowledge and experience have been gained. There are also wider benefits to patients and staff outwith the trauma sphere. Transferrable skills, especially elements involving human factors, benefit all patients as do the improvements in transfer pathways and lines of communication.

# 6 Current challenges and opportunities

The consultation exercise identified a number of challenges and opportunities to current and future Network service provision within the North of Scotland. These are in keeping with previous planning documents.

## 6.1 External influences

| Political | Economic |
|---|---|
| ▪ **Strengths**<br>○ Scottish government continue to support major trauma services<br>▪ **Weaknesses**<br>○ Alterations to national and board strategic plans<br>▪ **Opportunities**<br>○ Stronger inter-Network collaboration utilising STN<br>○ Stay open minded to other network models e.g. Norway<br>▪ **Threats**<br>○ Political instability<br>○ NHS strikes | ▪ **Strengths**<br>○ Funding for current staffing levels secured<br>▪ **Weaknesses**<br>○ Budget shortfall 2023/34<br>○ Funding to move from Network to Board baseline making oversight difficult<br>▪ **Opportunities**<br>○ Consideration of different funding models including Board input and potentially novel sources e.g. charity, endowment<br>▪ **Threats**<br>○ Financial position of local and national health economy<br>○ On-going demand for efficiency savings and limited scope to achieve |
| **Social** | **Technological** |
| ▪ **Strengths**<br>○ Continuing public support for the NHS<br>▪ **Weaknesses**<br>○ Public and patient expectations<br>▪ **Opportunities**<br>○ More socially connected facilitating better public engagement<br>▪ **Threats**<br>○ Demographic and epidemiological change – ageing population, increasing obesity and complexity<br>○ Alcohol and drug misuse | ▪ **Strengths**<br>○ Ongoing research into trauma management<br>○ Improved diagnostics<br>○ Evolution of medical technology and equipment<br>▪ **Weaknesses**<br>○ Under investment<br>▪ **Opportunities**<br>○ Increasing use of social media<br>○ Trauma App<br>▪ **Threats**<br>○ The internet informed patient – meeting service user expectations |
| **Geographical** | **Industrial** |
| ▪ **Strengths**<br>○ Sense of community<br>○ Appreciation of the need for a coordinated Network<br>▪ **Weaknesses**<br>○ Large, sparsely populated area<br>○ Significant timelines<br>○ Remote communities | ▪ **Strengths**<br>○ Increased employment<br>○ Lowering of socio-economic deprivation<br>▪ **Weaknesses**<br>○ Increased hazards<br>▪ **Opportunities**<br>○ Investment opportunities |

| | |
|---|---|
| ○ Mountainous and coastal/sea areas with inherent risks<br>▪ **Opportunities**<br>○ Sustained focus on education and training<br>○ Community engagement<br>▪ **Threats**<br>○ Increase in tourism | ▪ **Threats**<br>○ MIMC more likely |

# 6.2 Service delivery challenges

## 6.2.a Clinical service deficits

- Radiology services - under resourced, in terms of radiologist provision, for increasing workload
- Neurosurgical services – limited neurosurgical bed base in MTC
- Limited interventional radiology provision throughout Network
- National specialist facilities such as those for spinal cord injury and burns lie outwith the NoS Network
- Insufficient training and education opportunities

## 6.2.b Network challenges

- Lower volume Network (~250 major trauma patients per year with only 70% going to MTC)
- 5 health boards and SAS
- Competing priorities within Network health boards
- Siloed activity in regional trauma networks making National patient pathways complicated
- Multiple prehospital stakeholders operating in the same geographical space

## 6.2.c Staffing issue

- Lack of staff across NHS
- Shortfall in MTC ED consultants
- Inequitable rehabilitation resources across the Network
- Risk loss of paediatric anaesthesia for Paediatric MTC out of hours

# 7 Network strategic objectives 2023-28

The Network assurance visits, planning documents and subsequent discussions have identified a number of short (2023/24) and medium (2025-2028) term strategic objectives to address the challenges outlined in Section 6 and ensure that the Network fulfils its role in achieving its mission and objectives. These tie in with the regional recommendations outlined in the Review Report Scottish Trauma Network (STN) March 2023.

## 7.1 Deliver consistently excellent care for all trauma patients in the North of Scotland

This remains at the heart of the Network vision, both within the North and nationally.

**Priorities for 2023/24**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Finalise MTC clinical guidelines and make available to Network | Standardise treatment protocols across Network | Clinical governance reviews |
| Establish Network senior clinician's forum | An open collaborative forum to share experience and knowledge | Clinical governance reviews |
| Produce infographics identifying hospital facilities | To aid clinical decision making | Available on website/RDS platform |
| Establish eRehab plans across Network | Standardise format and allow live sharing across Network | Improvement in rehab plan utilisation |
| Gap analysis against the STN minimum requirements | Funding shortfall necessitates review | KPIs |
| Help to facilitate risk reduction in NHS Highland out of hours CT life-threat reporting for critically ill trauma patients | Patient risk associated with inability to get timely life-threat reports | Ongoing local audit |
| STN peer review minimum requirement assessment | North of Scotland STN peer review planned for Feb 24 | Successful peer review and feedback |
| Continued development of a Trauma in the Elderly pathway including understanding scale, recognition, assessment and management | A significant proportion of trauma involves older and frail patients. The scale of elderly trauma is not fully understood due to patients following different pathways (e.g. medicine) | Development of a Network Elderly Trauma Guidance document |

**Aspirations for 2028**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Quality improvement programme based on STN minimum requirements and wider quality trauma care standards gap analyses | Gap analyses will identify shortfalls in service | Continuous progress monitoring<br>KPIs |
| Strive to achieve improvements in all trauma KPIs outlined by STAG/SNAP | Particular emphasis on areas of poor performance including CT reporting and PROMS | KPIs |
| Network wide documentation for trauma care | Standardise practice | Governance processes |
| Introduce freeze dried plasma in remote sites | Multiple remote sites are without blood products containing clotting factors | Clinical governance reviews<br>Mortality and morbidity data |
| Trial and implement Trauma App into MTC and potentially across Network | Electronic recording of medical records will reduce variation in care and improve outcomes | Audit of use and effectiveness |

## 7.2 Develop a robust, accessible and dynamic governance structure to drive service development

Governance remains the lynch pin in identifying areas for improvement and promoting a collaborative working environment.

**Priorities for 2023/24**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Restructure governance framework with strengthened lines of communication between LEH, TU and MTC | There is much overlap between local and regional meetings currently. It also remains difficult to feed into Boards governance structures | Staff feedback<br>Review processes |
| Move Network Clinical Governance Forum from quarterly to bimonthly (6/yr) | Will allow clinical cases to be discussed within an appropriate time window | Staff feedback<br>Attendance records |
| Standing agenda items for Network Clinical Governance meetings followed by rolling leads for clinical theme and case review<br>• Prehospital, LEH, TU, MTC | Improve inclusivity. Themed meetings will focus on highlighted areas of care identified through case reviews. Depending on workload separation between Network clinical lead and CG lead may be preferrable | Staff feedback |

**Aspirations for 2028**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Consider panel to review more/all major trauma cases | Improve robustness of CG processes allowing greater oversight of clinical care | Audit<br>Generation of targeted improvement programmes |
| Consider separate Network governance lead role | Facilitate changes identified, especially leading review panel | Establishment of governance case review panel |
| Use governance to effectively drive change and integrate with research | Help identify where change is needed and highlight where audit and research could be focused | Patient and stakeholder feedback<br>KPIs<br>Mortality and morbidity data |
| Develop effective means of spreading learning from case reviews | Essential to improve standards of care<br>Provide focus for education agenda/programme | Feedback from staff and Boards |

## 7.3 Refine the Network structure to ensure it remains lean, efficient and adaptive

Efficient systems are responsive to change and the needs of those within it. Additionally, the Scottish Government is keen to ensure the Network proves its stated aims and that funding provided has been appropriately used.

**Priorities for 2023/24**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Define leadership requirements throughout the Network, MTC, TU and LEHs | Ensures efficient, productive working and enhanced collaboration | Staff feedback<br>Peer review |
| Amalgamate Network board and Executive group | Network has been implemented and funding has been baselined into Boards | Staff feedback |
| Disband Network Prehospital care, Retrieval and Transfer Group and integrate into Network Clinical Governance meeting and SAS governance structure | Network systems and processes now established | Staff feedback |
| Change function of the Network Rehabilitation and Repatriation Group into a learning and development forum | Stakeholder feedback request | Staff feedback |
| Continue to work with Boards on scrutinising efficiencies, risks, funding and performance | SG tasked Network to ensure efficiency and value for money | Financial reports |

**Aspirations for 2028**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Develop a research portfolio | Will help project the Network to a wider audience. STN priority | Involvement in scientific trials<br>Publications |
| Consider leadership role in research (and audit lead) | Potentially needed given the interest in developing a research portfolio | Research portfolio |

## 7.4 Develop a high quality teaching and training programme for all involved in trauma management

The need for ongoing education and training was a key message heard throughout the Network. It forms part of the STN vision and is fundamental for improving patient care especially in lower volume Networks and hospitals.

**Priorities for 2023/24**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Continue to support ETC and TNCC (or similar skills training) | Standardised approaches to trauma care improve outcomes | Staff feedback |
| Establish an education lead for the Network and education forum | Essential to coordinate training and education throughout the Network | Staff feedback<br>KPI improvement |
| Undertake skills need analysis | Better understand the needs to target appropriate training | Targeted training and education programmes |
| Better understand and coordinate teaching and training already being delivered | Champion the training and education already being delivered. Coordinate to improve efficiency | Coordinated training programme, targeted to need |
| Develop a Network Education Strategy | Formalise the Network approach | Published and distributed strategy |

**Aspirations for 2028**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Set up a well led, coordinated training programme for the Network to include all those involved with trauma<br>• TNCC Nursing trauma skills or equivalent<br>• ETC<br>• NMAHP framework specific to trauma<br>• Boot camps involving multiple specialties<br>• Teaching and training workshops<br>• Travelling training teams | Programme driven by the skills need analysis | Staff feedback<br>Improved patient outcomes |
| Develop a robust funding model for the programme<br>• Network<br>• Boards<br>• Novel | Fiscal tightening has left both shortfalls and little chance for development where additional funding is needed. Consideration should be given to establishing a charity/foundation | Improved finances |

## 7.5 Collaborate with all Scottish trauma stakeholders to provide outstanding patient care pathways

One of the key roles identified in the planning phase of the Network was to support clinical teams across the North in the delivery of major trauma patient care. When the unique geography of the region is considered, robust patient pathways are essential.

**Priorities for 2023/24**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Continue to work collaboratively with STN and regional networks | Essential for a coordinated approach across Scotland | Engage with STN peer review process and STN Review |
| Ensure single telephone number to contact the Critical Care Desk for any critically ill patient, including trauma, and allow contact with the MTC SPOC | A consistent message from LEHs and streamlining of processes for any critically ill patient | Updated transfer policy document<br>Staff feedback |
| Further develop the use of SPOC | Personal variability remains in terms of acceptance etc. Established protocols would standardise the process | LEH feedback<br>Clinical governance case reviews |
| Continue to review major trauma cases not transferred to MTC | Allows better understanding of patient care pathways. Funding should follow need (with consideration for redistribution of funds) | Input into strategic resource planning |
| Continue to work with all prehospital care providers to ensure appropriate taskings, clinical management, governance and collaborative working | Multiple stakeholders working in same prehospital space. Collaborative approach essential to avoid confusion and improve efficiency | Clinical governance reviews<br>KPIs<br>Reduced timelines to definitive care |

**Aspirations for 2028**

| Priorities | Rational | Outcome measures |
|---|---|---|
| Multidisciplinary refinement of patient care pathways for frequent trauma clinical groups | To optimise every stage of care from point of injury / illness to recovery. Specific areas to include: Elderly; Neurosurgery; SCI; Cardiothoracics | Improved outcome measures in specific patient subgroups<br>Patient feedback |
| Network wide Major Incident and Mass Casualty (MIMC) simulation | Necessary for preparedness | Multi-agency MIMC simulation |
| Increase collaborations with national and international centres of excellence | Utilise experience to improve patient management | Continue to adopt evidence based patient management strategies |
| Visit other Networks | Utilise experience to improve patient management | Staff feedback |
| Closer alignment to local and national trauma prevention programmes | Prevention clearly better than treatment. Patient data (STAG) to identify high impact key areas | Reduction in trauma numbers for specific mechanisms of injury, especially falls |

## 7.6 Ensure Network resources and information are easily accessible and fit for purpose

Up to date, relevant, easily accessible resources are critical to ensure standardised trauma care to all throughout the Network.

### Priorities for 2023/24

| Priorities | Rational | Outcome measures |
|---|---|---|
| Review Network website to ensure up to date and relevant information is stored, including guidelines, pathways and educational material | Standardised patient management is essential. Staff need to know where to find resources and have confidence they are accurate and up to date | Staff feedback<br>Patient outcomes/KPIs<br>Audit on policy adherence |
| Consider use of QR codes to aid ease of access | Most clinical staff utilise smartphones on a routine basis | Website hit/visiting rates |
| Place MTC/Network guidelines on Right Decision Services (RDS) platform and website | Part of the Once for Scotland initiative providing a platform easily accessible by both computer and smartphone (app based) | Dedicated NoS TN mini site on RDS platform housing MTC/Network guidelines |
| Review Network Communication & Engagement Strategy | Ongoing review to ensure still fit for purpose as Network structure, resources and platforms change | Distribution of updated strategy<br>Staff feedback<br>Peer review |

### Aspirations for 2028

| Priorities | Rational | Outcome measures |
|---|---|---|
| Ensure Network documentation, both managerial and clinical, are held in one accessible repository. May include:<br>• SharePoint<br>• Teams<br>• RDS<br>• Website | Ease of access for those that need it is essential | Staff feedback |

# 8 References


- Review Report Scottish Trauma Network (STN). March 2023
- Draft Implementation Plan for the Development of the North of Scotland Major Trauma Network. October 2016

# 9 Appendices

## 9.1 Hospital assurance visit proforma

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

The North of Scotland Trauma Network was established 5 years ago. The Network and hospitals within have developed significantly in this time, with ongoing improvements made to the management pathways of trauma patients from point of injury through to rehabilitation.

We are now in a strategic planning phase to map out the next 5 years. As part of this we are conducting assurance visits to all hospitals and pre-hospital providers within the Network. The aim is to listen to the relevant teams in order to better understand existing excellent practice, ongoing needs, constraints and areas for improvement to help identify key objectives where change is needed.

We are very happy to be guided by the hospital team and discuss anything relevant to trauma patients. However, a brief guide to the areas we are particularly interested in is provided below to facilitate structuring the day.

- **General**
  - No. of beds
  - Facilities
  - Staffing
  - Catchment area
- **ED**
- **Critical care/stabilisation**
- **Pre-alert**
- **Transfer**
  - By what means?
  - Where?
- **SPOC utilisation**
- **Radiology**
- **Transfusion**
- **Equipment**
- **Major incidents**
- **Paediatric cases**
- **Training & Education**
- **Governance**
  - Local & Board
  - Network
- **Rehab**
- **OT/Physio**
- **Repatriation**
- **STAG**
- **Risks**
- **Needs from the Network**

Tim Hooper
Clinical Lead
North of Scotland Trauma Network

NoS TN Assurance Visit Template Tim Hooper v1.2 1/1

## 9.2 Hospital assurance visits feedback summary

**North Trauma Network Strategic Review**
**Feedback from visits to hospitals in the Network:**

Belford Hospital, Fort William

- There is a requirement across the network of understanding the capabilities of each hospital's capacity to care and transfer critically ill patients, including trauma. This information should be accessible in real time and standardised across the network.
- There should be a clear understanding of the transfer pathways for trauma patients to either the Trauma Unit or Major Trauma Centre and key contacts.
- Consideration should be made if the PICT team could undertake inter-hospital transfers from Highland LEHs to the Trauma Unit.
- Network training opportunities should be easily accessible.
- Network support of local trauma education and governance capacity

Caithness General Hospital, Wick

- Network support of local trauma education and governance capacity.
- Network guidance and training opportunities should be easily accessible.
- There is a requirement across the network of understanding the capabilities of each hospital's capacity to care and transfer critically ill patients, including trauma. This information should be accessible in real time and standardised across the network.
- Network facilitation of EMRS liaison visits to resume and recognition of an additional radiographer required

Broadford Hospital, Skye

- Hospital requirement to understand trauma numbers. This would help facilitate a business case for a CT scanner and onsite helipad.
- Network development of a comprehensive trauma education programme that can be provided locally and also allow for CDP opportunities at the MTC (both adult and paediatric).
- The Network would enable a clear learning feedback loop to hospitals from Network governance processes.
- The Network to provide advice on enhanced blood product capability.
- Network to consider having one telephone number to call for all critically ill, adult and child, including trauma, to reach the MTC SPOC and ScotSTAR retrieval services

Dr Gray's Hospital, Elgin

- Network support for local trauma education and governance capacity

The Gilbert Bain Hospital, Lerwick, Shetland

- Network to consider having one telephone number to call for transfer of all critically ill, adult and child, including trauma, to reach the MTC SPOC and ScotSTAR retrieval services.
- Network development of a comprehensive trauma education programme which takes into account local requirements.
- Development of easily accessible Network wide clinical guidelines including:
  - rib fracture guidance
  - use of SPOC v specialty to specialty
- Development of stronger relationships between MTC Trauma Co-ordinators and use of the patient's Rehabilitation Plans

Western Isles Hospital, Stornoway

- Network to consider having one telephone number to call for transfer of all critically ill, adult and child, including trauma, to reach the MTC SPOC and ScotSTAR retrieval services.
- Network development of a comprehensive trauma education programme which takes into account local requirements.
- Network support for local trauma education and governance capacity.
- Network support to facilitate trauma neuropsychology support for patients.
- Network support to purchase trauma equipment when required.
- Network support to locally hold freeze dried plasma (Lyoplas)

Raigmore Hospital, Inverness

- Network to facilitate development of ARI neurosurgical pathway to enable neurosurgeons inclusion in the SPOC call where relevant and enable TBI patients to be immediately accepted into the MTC.
- Network to enable a full understanding of the SPOC across the Network, including within the MTC.
- Network to support increase capacity in the TU team for the trauma co-ordinator function including understanding the level of frail trauma patients kept at the TU. (NB. Since the visit an additional trauma co-ordinator has been recruited using funding differently within the trauma team.)
- Network to continue to support mitigation of the risk of reduced radiologist capacity at the TU and outsourced provider requirements to increase quality provision.
- Network to review governance process and structure to enable clear levels of responsibility and cross Network learning.

Royal Aberdeen Children's Hospital

- Agreed that two Joint Paediatric MTC Clinical leads were required to cover local (Per-Hospital, ED and in-patient leadership), Network and national requirements.
- Network development of a comprehensive trauma education programme which takes into account Local Emergency Hospital requirements, supports paediatric training across the network delivered by the MTC team and includes in-house MTC education provision.

Aberdeen Royal Infirmary

- Network development of a comprehensive trauma education programme which takes into account Local Emergency Hospital requirements and includes in-house MTC education provision.
- Agreement that at the current time, the MTC would continue major trauma care, under the Major Trauma Consultant led trauma team, to patients across ARI, including polytrauma patients on Surgical HDU, rather than seek to open a Polytrauma Ward.

Balfour Hospital, Kirkwall, Orkney

- Development of stronger relationships between MTC Trauma Co-ordinators/AHPs and use of the patient Rehabilitation Plans.
- Network support of local trauma education and governance capacity
- Network to consider a peer support process for complex cases.
- Network to help facilitate a feedback mechanism to SAS/EMRS/SSD

# 9.3 Hospital assurance visit reports

### 9.3.a Aberdeen Royal Infirmary (MTC)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

**Aberdeen Royal Infirmary 12/04/23**

- **General**
  - No. of beds
    - ~900 in total
  - Facilities
    - 4 adult resusc bays (with sliding divider to 2 paeds resusc bays)
    - Polytrauma ward currently located in HDU (dedicated 4 bedded area in ortho ward previously)
    - 44 Trauma & Orthopaedic beds
  - Staffing
    - 3 x major trauma consultants (in-hours, Mon-Fri)
    - 4 x trauma coordinators
  - Catchment area
    - ~600,000 population
- **ED**
  - 4 adult resusc bays (with sliding divider to 2 paeds resusc bays)
  - ED consultant acts as TTL 24/7
  - ED lead for major trauma
- **Critical care/stabilisation**
  - 19 x Level 3
  - 10 x Level 2
- **Pre-alert**
  - Via radio or phone
- **Transfer**
  - Generally central belt for treatment outwith ARI
- **SPOC utilisation**
  - ED TTL acts as SPOC for incoming referrals across the Network
- **Radiology**
- **Transfusion**
- **Equipment**
  - Keen to trial a trauma app
- **Major incidents**
- **Paediatric cases**
  - RACH on same site
- **Training & Education**
  - Friday educational sessions. Can be difficult to free people up
  - Quarterly rehab teaching/training
- **Governance**
  - Dedicated MTC clinical governance lead
  - Monthly meetings
- **Rehab**
- **OT/Physio**

- **Repatriation**
- **STAG**
- **Risks**
- **Needs from the Network**
  - Network development of a comprehensive trauma education programme which takes into account Local Emergency Hospital requirements and includes in-house MTC education provision
  - Agreement that at the current time, the MTC would continue major trauma care, under the Major Trauma Consultant led trauma team, to patients across ARI, including polytrauma patients on Surgical HDU, rather than seek to open a Polytrauma Ward

**Main review key points:**

- In-patient major trauma care coordinated by major trauma consultants and trauma coordinators. Act as a liaison between surgical (and medical) specialties
- The location of the major trauma ward (HDU vs other ward area) remains a discussion point for the wider major trauma team
- Education is a key area for ongoing development
- Development of an MTC specific steering group may be beneficial
- Better understanding or trauma coordinator and SPOC roles would be useful both within the MTC and the Network as a whole

### 9.3.b Royal Aberdeen Children's Hospital (Paediatric MTC)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

**Royal Aberdeen Children's Hospital 13/03/23**

- **General**
  - No. of beds
    - ~50
  - Facilities
    - ED – 2 resusc & 12 other bays
    - 3 theatres
      - 1 Emergency
      - 2 Elective
      - OOH on-call from home (~20 mins)
    - 4(+1) critical care beds
  - Staffing
  - Catchment area
- **ED**
  - 2 resusc bays
- **Critical care/stabilisation**
  - 4(+1) critical care beds
  - Level 2 with Level 3 capability pending transfer
- **Pre-alert**
  - All paeds generally pre-alerted
  - Via radio or phone
- **Transfer**
  - Typically Glasgow or Edinburgh by ScotSTAR
- **SPOC utilisation**
- **Radiology**
  - 2 x-ray
  - 2 USS
  - 1 CT – shared with ARI
- **Transfusion**
- **Equipment**
- **Major incidents**
- **Paediatric cases**
- **Training & Education**
  - Well established programme at both local and Network level
  - Roadshows well received in LEHs
- **Governance**
  - Paeds MTC monthly
  - Paeds Network quarterly
- **Rehab**
- **OT/Physio**
- **Repatriation**
  - Typically from the central belt
  - Can be problematic with regards to information passing
- **STAG**

- **Risks**
- **Needs from the Network**
  - Agreed that two Joint Paediatric MTC Clinical leads were required to cover local (Per-Hospital, ED and in-patient leadership), Network and national requirements.
  - Network development of a comprehensive trauma education programme which takes into account Local Emergency Hospital requirements, supports paediatric training across the network delivered by the MTC team and includes in-house MTC education provision.

**Main review key points:**

- Enhanced joint working between RACH and Raigmore TU. Case based discussions may prove beneficial
- Paeds MTC guidelines made available across the Network
- Clearer communication needed with repatriations from Glasgow/Edinburgh
- Ongoing education needed at both Paeds MTC and Network level
  - Generic topics – TBI etc.
  - Critical care Level 2/3 – ICP monitoring etc.

### 9.3.c Raigmore Hospital, Inverness (TU)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

**Raigmore Hospital, Inverness 14/02/23**

- **General –**
  - No. of beds
  - Facilities
  - Staffing
  - Catchment area
- **ED**
  - Major trauma can be managed although CT reporting is a major issue out of hours**.**
  - Trauma calls are usually appropriate although they could be activated more frequently. A 2-tier system is in place.
  - New anonymous CAD system in place but carries limited clinical information pertinent to clinical decision making (or PICT activation).
- **Critical care/stabilisation**
  - Patients are stabilised in ICU and then transferred if required. Patients do not transfer from ED.
  - Time critical head injuries should transfer from ED.
  - NB. Since our visit it has been agreed that time critical transfers are transferred directly from ED resusc (rather than going to ICU).
- **Pre-alert**
  - SAS phone ahead for >90% of all admissions. This appears unique for Scotland.
  - Sometimes there are issues with accuracy of information.
- **Transfer**
  - In-house for time critical. EMRS for other
  - ARI, RACH & central belt
- **SPOC utilisation**
  - SPOC use is variable. Surgeon to surgeon referral still commonplace.
  - Would prefer if SPOC accept patients straight away, even if TBI, although it is acknowledged that ARI neurosurgery have not bought into this yet.
  - Neurosurgeons should be a part of SPOC call. Neurosurgeons should be made more aware of Raigmore surgery capability.
  - Experience of SPOC not being aware of MTC pathway.
- **Radiology**
  - Weekday in hours done by Raigmore radiologists. OOH including weekends outsourced.
  - Ongoing significant clinical risk associated with delays in formal reporting and almost total lack of hot/life threat reports. Considerable local and regional work done but, currently, little change in risk.
- **Transfusion & laboratory**
- **Equipment**
- **Major incidents**
  - Last exercised Sept 21. Work ongoing to establish Raigmore/NHSH response. Currently more pre-hospital/SAS centric and needs unified approach.
- **Paediatric cases**
  - Ongoing work to establish agreed pathway between TU and MTC for paediatric splenic injuries.

- **Training & Education**
  - General feeling 1g TXA infusion (post bolus) is being missed. ? Audit needed ? Change in policy to 2g bolus only.
- **Rehab**
- **Repatriation**
- **STAG**
  - Very compliant with STAG data entry.
  - However, does STAG accurately capture elderly/frailer trauma? Audit within the TU may help this (as is being done in MTC).
- **Risks**
  - Risk to patients by not having adequate trauma co-ordinator capacity. Some efficiencies could be made by considering how long patients need to stay under the auspices of the MT team. This could include patients needing ongoing clinical psychology support. (NB. Since the visit an additional trauma co-ordinator has been recruited using funding differently within the trauma team.)
  - The MT team asked what the critical function for the team was as they could not maintain current numbers. What should they focus on? Currently the team take on patients with an ISS >9. The team needs to decide how best to prioritise their workload and rationing maybe needed.
  - There was a suggestion that Raigmore patients are more frail, do not move onto the MTC and need more support. It would be worthwhile tracking this to see if there is an increase in over 65s as compared to ARI.
  - There was also an assumption that there is less ongoing rehab at the MTC as patients are repatriated to their respective hospitals. ? Does this need to be mapped to assess if accurate/help define future rehab funding.
  - Risk of not being prepared for a MIMC – engagement with resilience leads difficult.
  - Acknowledged funding tight across the Network. 'Hidden gap' analysis maybe useful for when things improve.
- **Governance**
  - Recent case reviews have begun and MT lead (Dr Tallach) feeds back learning to specialties. This would include themes but risks/themes/quality improvement also need to feed into Raigmore governance structure as well as STAG and KPI performance.
  - Raigmore governance pathway: Unit (ED/ICU/Surg etc.) > Directorates > Acute division (CG committee. This is where STAG/SNAP inputs) > MD

**Main review key points:**

- Network to facilitate development of ARI neurosurgical pathway to enable neurosurgical inclusion in the SPOC call when relevant and to enable TBI patients to be immediately accepted by the MTC TTL (SPOC).
- Network to enable a full understanding of the SPOC across the Network, including within the MTC.
- Network to support increase capacity in the TU team for the trauma co-ordinator function including understanding the level of frail trauma patients managed in the TU. (NB. Since the visit an additional trauma co-ordinator has been recruited using funding differently within the trauma team.)
- Network to continue to support mitigation of the risk of reduced radiologist capacity at the TU and outsourced provider requirements to increase quality provision.
- Network to review governance process and structure to enable clear levels of responsibility and cross Network learning.

### 9.3.d Dr Gray's Hospital, Elgin (LEH)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

**Dr Gray's Hospital, Elgin 14/03/23**

- **General – ~110K population**
  - No. of beds
  - Facilities
    - ED – 2 resusc & 5 major
    - HDU – 9 beds with ability to manage 4 level 1(+) patients
  - Staffing
  - Catchment area
- **ED**
  - No bypass ED with 60-100 patients per day.
  - Some major trauma patients will be triaged to the MTC or TU depending on trauma triage tool outcomes
  - 2 resusc bays & 5 majors bays
  - Most trauma is elderly falls from same height. Some trauma pit stops at DGH on the way to MTC. Some patients choose to stay at DGH.
  - Frailty scoring begun in ED Oct 22
  - Have trauma calls (but not red)
  - Trauma documentation working well
  - 1 ED consultant (OOH at home after 2100 on weekdays & 16:30 weekends but available within 30 mins 24/7) & EP/staff grade 24/7 on site
- **Critical care/stabilisation**
- **Pre-alert**
- **Transfer**
  - By what means?
    - Time critical transfers done by anaesthetic team. It can be disruptive to the whole hospital.
    - Non time critical transfers done by EMRS but also by anaesthetic team if EMRS are not available.
    - There is no benefit in a helicopter landing site as quicker to transfer to road to MTC or Raigmore. However, a HLP is being developed nearer for central belt transfers. (local site identified)
  - Where?
- **SPOC utilisation**
  - Good appropriate SPOC discussions
- **Radiology**
  - Ben Winters, ARI Consultant Radiologist (lead for major trauma), reports trauma KPIs to Rafik Hamdy, Lead Radiologist at DGH. Rafiq confirmed there is a delay in accessing reports on RIS/Track and PACS.
  - OOH Local Radiologists cover 1700-2100, overnight covered by ARI registrars and occasionally Medica.
  - Consultants are called in for major trauma but sometimes difficult to identify a major trauma as there is no code red call.
  - Can use SPOC to get hold of Consultant Radiologist.
- **Transfusion & laboratory**
  - 11 O-ve

  - 24/7 lab staff but no X match availability (has to go to ARI)
  - FFP available but no platelets
- **Equipment**
- **Major incidents**
- **Paediatric cases**
- **Training & Education**
  - In house, bespoke, scenario based trauma education day for DGH Nursing team. Scenarios included management of head injury, major trauma and transfer, paediatric trauma and silver trauma.
  - In house discussions/training in regard to frailty and trauma patients and frailty scoring.
- **Rehab**
- **Repatriation**
- **STAG**
  - Gavin Tunnard, STAG Clinical Lead, and Jill Wallace, Local Area Co-ordinator
  - Major trauma – 0-3/mth
  - Moderate trauma – 2-8/mth
  - 9/19 ISS >15 stayed in DGH during 2022
- **Risks**
- **Governance**
  - Review all deaths, major trauma and missed KPIs.
  - STAG data flags cases which are taken through local M&Ms.
  - Some major trauma patients do stay (9/19 kept in 2022) but some of these will be palliative
  - Trauma numbers have gone down.

- **Needs from the Network**
  - Further discussion with Karen Merrin regarding developing trauma leadership and training hours using Network band 6, 0.1wte funding.

### 9.3.e Belford Hospital, Fort William (LEH)

**North of Scotland Trauma Network**
**Assurance Visits 2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

**Belford Hospital, Fort William 21/02/23**

- **General**
  - No. of beds:
    - Combined Assessment Unit (CAU) currently has 19 acute beds which includes 2 HDU beds (but not staffed) & a surge capacity of 3 taking them to 22 in total
  - Facilities
    - 2 resus bays
    - 1 theatre
    - Renal/dialysis and maternity
    - Virtual # clinic
  - Staffing
    - 4 x general surgeons
    - 2 x physicians (1 as locum)
    - 4 x anaesthetists
    - ANP, REP, FY, CDF, GPST
  - Catchment area
    - Runs from Glencoe to Creag Meagaidh in the Southeast & down to Mallaig & the Small Isles in the West including the Ardnamurchan Peninsula, as well as up to Fort Augustus in the Northeast.
  - MT pts ~5% local, ~95% out of area
  - New build hospital (with HLS) planned for 2028
- **ED**
  - 2 Resusc bays
  - REPs
  - OOH – 1 x CDF/GPST, 1 x ENP for whole hospital
- **Critical care/stabilisation**
  - No HDU due to nursing capacity. Intubated patients usually held in resus or occasionally theatre (on call theatre team). There is no established 'hold time' for critical care whilst retrieval team arrives.
- **Pre-alert**
  - Pre-alert is usually by radio into ED office.
- **Transfer**
  - EMRS West major trauma to Glasgow MTC. Twice the flying time to ARI. Local patients and families (small % of all major trauma patients) would prefer Glasgow due to transport options. This includes their rehab.
  - Raigmore used for moderate trauma, medical and surgical pts
  - It is sometimes difficult for EMRS North to retrieve patients due to weather conditions
  - Usually ambulance when transferring to Raigmore or sometimes Helimed 2
  - The hospital does not have capacity to send local teams with trauma patients. The on call anaesthetist has transferred very sick medical or surgical patients to Raigmore while covered by one of the other consultants who is not on call but does not escort trauma patients.
- **SPOC utilisation**
  - SPOC number via SSD is used.
- **Radiology**

  - Issues with reporting
- **Transfusion**
  - Labs on call out of hours
  - Major haemorrhage protocol in place
  - 4 O-ve
  - 6 O+ve, 4 A+ve
  - 4 FFP
  - 4: Cryo
  - Rapid Transfuser (Belmont) available
  - No platelets held on-site (~2 hours to get them from Raigmore)
- **Equipment**
- **Major incidents**
- **Paediatric cases**
- **Governance**
  - Belford clinical governance structure – there is a forum where Datixes and M&M discussion happens re: inpatients and emergency cases.
  - Stephen Gilbert is Lead Clinician for the Belford.
  - Fiona Young, Sam Spinney and Beth Hadden are leads for Trauma.
- **Training & Education**
  - Requirement for an ETC
- **Rehab**
  - Health centre based (GP, district nurses & physios)
  - 2.5 wte physio for ward and community
  - Rachel Kirk, Physio Lead. Acute and community are the same team. They cover up to Fort Augustus, down to Glencoe and over to the west coast.
  - 3 months waiting list for community physio.
  - 1 physio for a falls clinic which is 1 afternoon a week. No MDT for falls.
  - Near Me is used occasionally.
  - OT service is also acute and community combined and they do carry out joint visits with physios.
  - Lines of communication not clear with Glasgow MTC & Raigmore
- **Repatriation**
  - Patients would be usually repatriated to the Raigmore.
- **STAG**
- **Risks**

- **Needs from the Network**
  - Inform Chris Stirrup of the SPOC telephone number (ED 24/7 trauma team lead) for Glasgow MTC (completed)
  - Guidance on what trauma patients should go to Glasgow MTC or Raigmore TU. Should EMRS be left to make this decision?
  - Consider if PICT could do inter-hospital transfers from Fort William and Wick to Raigmore.
  - Put Paediatric MTC in touch with Fiona Young re: training at the Belford (completed)
  - Infographic with capabilities of LEH/TU/MTC and key POCs

**Main review key points:**

- There is a requirement across the network of understanding the capabilities of each hospital's capacity to care and transfer critically ill patients, including trauma. This information should be accessible in real time and standardised across the network.
- There should be a clear understanding of the transfer pathways for trauma patients to either the Trauma Unit or Major Trauma Centre and key contacts.
- Consideration should be made if the PICT team could undertake inter-hospital transfers from Highland LEH's to the Trauma Unit.

- Network training opportunities should be easily accessible.
- Network support for local trauma education and governance capacity.

### 9.3.f Caithness General Hospital, Wick (LEH)

**North of Scotland Trauma Network**
**Assurance Visits 2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager
Lesley Stables – Rehabilitation Lead

**Caithness General Hospital, Wick 26/01/23**

- **General – 40k population (with significant seasonal variation)**
  - No. of beds:
    - 21(+3) acute
    - Care of the Elderly/Rehab Ward (Bignall) 21 (+3)
  - Facilities
    - 2 Theatres
    - 1 (+1) resus bay
    - Day Case Ward
    - Ambulatory Care
    - Midwife led maternity service
  - Staffing
    - Broad spectrum of surgery, 3 general surgeons (incl. 1 training to be general) & 1 locum
    - 1x Consultant Physician (Raigmore rotation)
    - 2x Anaesthetists (1 x substantive, 1 x locum). Backfill is from Raigmore Consultants
    - 1 x rehab consultant
    - Spectrum of visiting Consultant Specialists in out-patients
    - 7x REPs, 5 x FY, 2 x GPST, 3 x CDF
- **ED**
  - 1 (+1) resus room
  - 7 REPs
  - Junior docs incl. FY1 &2s, GPSTs, CDFs
  - Plans to get specialty doctor rotating into Raigmore
- **Critical care/stabilisation**
  - No HDU. 3 beds equipped but no trained nurses. Intubated patients held in resus or theatre. There is no established 'hold time' for critical care whilst retrieval team arrives.
  - 2 anaesthetists available Mon-Thursday for 12 hours. Outside of this only 1 anaesthetist available.
  - Have idea to do a rotation through HDU at Raigmore but lack of staffing prevents.
- **Pre-alert**
  - Emergency air wave radio now in ED which has resulted in quality of pre-alert information increasing. Also have departmental phone but pre-alert is usually by radio.
- **Transfer**
  - By what means? EMRS North (and West on occasion). No EMRS visits since before 2017. Formal feedback would be welcome.
  - Where? Raigmore and MTC (ARI generally)
  - Helicopter landing site at the airport
- **SPOC utilisation**
  - SPOC number via SSD is used
- **Radiology**
  - Kirsten MacKay Radiographer Lead.
  - Have an on call radiographer OOH rota who can all provide trauma scans

  - Requirement for on-site training for radiographers using CT. Lead radiographer not keen on Direct to Scan (i.e. radiographer verified) due to increased workload. However, not requiring agreement of OOH provider to go to scan would be helpful to decrease times – as this happens with stroke.
  - Obtaining hot reports would decrease clinical risk.
  - Communication with OOH outsourced provider improving and quality log suggests 100% of targets have been met recently.
  - Image transfer times problematic. OOH – outsourced provider emailed and adding 'threat to life' in clinical details helping to reduce timelines
  - Is keen on more radiographer (B7) reporting – one in place now.
- **Transfusion**
  - 4 x BMS
  - OOH – from 1730 onwards. On call from home. A shift rota would be preferable.
  - Type specific/x-match manual process (no analyser)
  - 4 (+6) O-ve
  - 4 O +ve, 4 A -ve
  - 10 FFP
  - 4 Cryo
  - 6 prothrombin complex concentrate
  - No platelets
- **Equipment**
- **Major incidents**
- **Paediatric cases**
- **Governance**
  - Daily hospital briefing at 0800 & 2000
  - Have M&M process but not fully running at the moment. Ad hoc governance reviews
  - Surgery carry out governance process with Raigmore and participate in Highland Patient Safety forum.
  - Datix feed into the above processes.
  - Feedback from Network governance meetings beginning to feed through to local M&Ms
- **Training & Education**
  - Requirement for major trauma simulation.
  - Nurse trg remains problematic esp. critical care trg
- **Rehab**
  - Elderly patients with major trauma from falls hard to identify but trauma OT and Physio have begun to check white boards in wards to identify possible major trauma patients. They often liaise with TU trauma co-ordinator to ask for guidance on an ISS score
  - Caithness & Sutherland and NW community rehab teams
  - Good relations with Raigmore. Trauma OT and Physio join TU meeting at 1200 each day and MDT on Tuesdays
  - Receive prosthetics/orthotics support form Raigmore but patients have to travel to Raigmore for outpatients (used to be a visiting service at Caithness).
  - SALT team based in a council building but TU SALT gives advice and links up with local team
  - Local dietetic team are used when required.
  - Care Portal regularly used to access records and access to TU rehab plans are available on a shared drive.
  - Inpatient and community rehabilitation provided by Trauma OT and PT and HCSW as required
  - Good links with community services
  - Well equipped OT and PT therapy areas
- **Repatriation**

- Repatriations to the hospital would go to Bignold (rehab) Ward.

- **STAG**
  - STAG Local Area Co-ordinator in place and ED REP is lead STAG Clinician
- **Risks**
  - In the process of developing a Major Haemorrhage Protocol
  - Caithness to consider developing more formal trauma governance structure (Update – Regular Trauma M&Ms now in place June 2023)
  - Major trauma documentation needs adapting

- **Needs from the Network**
  - Work with Emma Woolfenden on 0.1 wte band 6 trauma leadership post (funding available from Network) (Update – now in place June 2023)
  - Advice on Aspen Collars/Miami J Collars. Send link to Mairi/Patricia on training developed by Jacqui Burnett and Jacqui's e-mail address. (completed)
  - EMRS liaison needed
  - Recognition radiographer uplift needed.
  - Website accessibility including guidelines, infographics and educational material

**Main review key points:**

- Network support of local trauma education and governance capacity.
- Network guidance and training opportunities should be easily accessible.
- There is a requirement across the network of understanding the capabilities of each hospital's capacity to care and transfer critically ill patients, including trauma. This information should be accessible in real time and standardised across the network.
- Network facilitation of EMRS liaison visits to resume and recognition of an additional radiographer required.

### 9.3.g Western Isles Hospital, Stornoway (LEH)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager
Lesley Stables – Rehabilitation Lead

**Western Isles Hospital, Stornoway 13/01/23**

- **General – 26k population**
  - No. of beds
    - 48 beds, 18 surgical, 29 medical, 14 day case
    - 4 HDU beds
    - 6 bedded hospital on Barra
    - ? bedded hospital (Uist and Barra Hospital on Benbecula) which has 1 radiographer and ultrasound in hours.
  - Facilities
    - Non-bypass ED hospital
    - Renal Dialysis - 6 beds (8 WTE nurses with Raigmore consultant input)
    - X-Ray, CT and Ultrasound
    - Diabetes Centre
    - Acute psychiatric ward – 5 beds
    - Covid/flu ward (used to be rehab) – negative/positive pressure rooms with 3 x ICU capable beds
    - Ambulatory Care Unit (ChemoRx and infusions)
    - 2 theatres
    - Day case unit – colonoscopy & minor procedures
    - # NOF 3-4/month
  - Staffing
    - 2 substantive orthopaedic surgeons, 2 gynaecologists, general surgery provided by 2 locums (1-2 weeks on at a time)
    - Full rota provided by substantive anaesthetists (4)
    - 2 locum paediatricians and locum physician
    - 11 junior doctors (IMT, CDF, GPST, FY1&2, no registrars)
    - Students come from Aberdeen
    - 11 Clinical Support Nurses (ANPs).
    - OOH 2 x ANP & 1 x ED doctor for whole hospital
    - Western Isles are planning a review of workforce. There are many registered nurse vacancies and consequently they are beginning to change the model and recruit to band 4 HSWs.
  - Catchment area
    - All Western Isles. 26k all islands (16k Lewis/Harris)
- **ED**
  - 1 resuscitation room. TV available - they have thought about telemedicine for trauma from GG&C but do not utilise.
  - Staffing in hours – 1 x ENP, 1 x ED doctor
  - OOH - 2 x ANP & 1 x ED doctor for whole hospital with GP in ED
  - 2 treatment rooms
  - Acute Assessment Unit (8am-8pm) – GP referrals that are not suitable for ED. Discharged to ward/home or Hospital at Home (evolving service from 3-6 staff, to include AHP staff in the future).
- **Critical care/stabilisation**

- 4 HDU beds in medical ward
  - RSI capability
  - Prepared for 12 hr Level 3 pt hold (max 24-30 hrs)
- **Pre-alert**
  - SAS by phone into ED office
- **Transfer**
  - By what means?
    - The secondary transfer of severely injured patients is carried out by EMRS West based at Glasgow airport. Fixed wing and helicopter used. Helipad is at the hospital. The Coastguard is based at the airport.
    - Tubed patients are cared for in HDU while waiting for a transfer
  - Where?
    - Usually taken to West MTC
- **SPOC utilisation**
  - Retrieval number used in ED for adults and paediatrics is 03333 990 222 (ScotSTAR generic retrieval number). NoS Trauma Transfer Line number 03333 990 249 is displayed but not used. No connection to SPOC (MTC ED Trauma Team Lead) at Queen Elizabeth is usually requested. Deal directly with EMRS or Paediatric Retrieval Team.
- **Radiology**
  - Radiographers available 24/7. Trauma CT – Camp Bastion protocol
  - 1xConsultant Radiologist onsite/remote access from Bournemouth in hours. Also use in-hours NHS Borders service. OOH have outsourced provider (TMC). System works well. No problem with CT head reporting within 60 mins.
  - About to purchase MRI scanner. Currently very expensive to send patients to Raigmore (cost of scan and travel).
  - Echo trained nurses
- **Transfusion & laboratory**
  - 6 O -ve held in ED blood fridge
  - Laboratory staff 0900-1700. OOH – POC testing only (ABG, FBC, Trop, iSTAT)
- **Equipment**
- **Major incidents**
- **Paediatric cases**
  - Utilise SCRAM bags
- **Training & Education**
  - Case reviews provided by EMRS liaison
  - Combined training with coastguard/SAS and hospital has begun
  - Training (?) provided by Raigmore colleagues
  - Critical Care training beginning at the end of January in collaboration with ARI/Raigmore/Orkney
  - BASICS, EPALS, ETC (? 3 courses in last 2 years) conducted
  - Sim room facilities with Laedal sim person, resusc trollies & SMOTS UK
- **Rehab**
  - AHPs – one team for acute, community and paediatrics
  - Collocated AHP therapy teams aids joint working and communication
  - Prosthetics and orthotics provided by Highland (visit quarterly)
  - Limited links with rehabilitation consultants Raigmore, can refer to Highland spasticity management service
  - No access to psychology (limited input from ARI)
  - Chronic pain management SLA with Borders but difficult to access.
  - Major trauma patients from West and North MTCs and Raigmore
  - TBI pts challenging
- **Repatriation**
  - Patients come back from GG&C to wards for rehab.
  - Repatriation communication good with North teams

  - START team exists (not condition specific) to aid rehab at home which does in-reach to hospital. GPs can refer but geographically restricted. Other areas have a flat in a local nursing home that can be used for rehab.
- **STAG**
  - No input into e-STAG for 2 years. STAG Local Audit Coordinator (LAC) funding available (0.1 wte band 5) but unable to recruit. Plans in place for Raigmore LAC to cover Western Isles data from 23/24.
- **Risks**
- **Governance**
  - Acute trauma care provided by west MTC but staff are not involved in any case reviews.
- **Needs from the Network**
  - Support to buy an ED trauma mattress as and when funds available
  - Support for further training opportunities i.e. bespoke course for trauma care after 12 hours (nursing and anaesthetic), management of the deteriorating patient and TBI patients
  - Support to access psychological support for patients via Highland.
  - Neuro rehab support
  - Would prefer single referral number of all critically ill patients
  - Support to potentially hold freeze dried plasma (Lyoplas)

**Actions:**

- Anne-Marie to put Joan Mackay in touch with Gillian Winter and Dora Paal re: paediatric training. (Completed)
- Anne-Marie to speak to Highland re availability of psychology support (0.1 wte band 8a funding available). (Discussion opened up with NHSG to provide psychology support)
- Continue to raise awareness of NoS MT monthly education Teams sessions
- Lesley to provide AHP contacts for West of Scotland Major Trauma Service

**Main review key points:**

- Network to consider having one telephone number to call for transfer of all critically ill, adult and child, including trauma, to reach the MTC SPOC and ScotSTAR retrieval services.
- Provision from the Network to provide a comprehensive trauma education programme which takes into account local requirements.
- Network support for local trauma education and governance capacity.
- Network support to facilitate trauma neuropsychology support for patients.
- Network support to purchase trauma equipment when required.
- Network support to locally hold freeze dried plasma (Lyoplas)

### 9.3.h Balfour Hospital, Kirkwall, Orkney (LEH)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager
Lesley Stables – Network Rehabilitation Lead

**The Balfour Hospital, Kirkwall, Orkney – 20/06/23**

- **General – 22.5K population.**
  - No. of beds:
    - IP1 20 (+2 asses +2 HDU) beds + IP2 16 (+4 Macmillan +1 hotel) beds
    - No HDU as yet (due to staffing)
    - 4 x bedded midwife led maternity unit
    - 6 x dialysis beds
  - Facilities
    - 2 theatres and a scope unit
      - General – Laparotomies/hernias/cholecystectomies etc.
      - Ortho – ORIF/NOF etc.
    - Day case unit
    - X-ray, ultrasound in hours, CT scanner with some radiographers trained OOH
  - Staffing
    - 3 x general surgeons, some but not all do trauma. 2x Orthopaedic surgeons provided 0900-1700 weekdays.
    - Obs and Gynae
    - 3 x Anaesthetists substantive but 1 vacancy coming up. Topped up by locums.
    - Junior doctors FY2/3, GPSTs
    - Overnight 1 ENT in ED, junior doctor and on call consultant
  - Catchment area
    - 20 inhabited islands
- **ED**
  - Average 189 patients per week. 45% increase since 2012.
  - 2 resuscitation rooms.
  - 1 x Specialty doctor, part-time.
  - No ED Consultant leadership.
  - Junior doctors and GPSTs.
  - ANPs and ENPs.
  - In hours – FY2/GPST + ENP +/- specialty doctor
  - OOH – FY2/GPST + ENP (covering entire hospital)
  - OOH GPs x 2 on call for community and consultation room in ED
- **Critical care/stabilisation**
  - 2 x HDU (level 2) not open as yet – building staff competencies.
  - No agreement for how long Level 3 can be held but max has been 24 hrs.
  - Patients remain in resus room at the moment for retrieval but plans to move to theatre/HDU
- **Pre-alert**
- **Transfer**
  - By what means? EMRS
  - Where? ARI MTC
  - EMRS link is Andy Bayliss although missing regular case reviews.

- **SPOC utilisation**
  - SPOC availability useful and island staff are being encouraged to use to organise a retrieval from the islands rather than all patients coming into the Balfour if not required.
  - Change from trauma transfer telephone number to ScotSTAR emergency telephone number for all critically ill adults and children, including trauma, would not prove difficult to advertise.
- **Radiology**
  - 1 x CT,
  - Use ARI for access to radiologists.
  - A separate call to the Radiologist at ARI to authorise CT scans. Radiologists keen to maintain this advice before scanning.
- **Transfusion**
  - Cross-matching carried out by ARI
  - 11 x O-ve (4 in ED)
  - FFP available
  - No platelets
  - OOH lab staff – on call from home
  - Major haemorrhage protocol in place
  - ED has POC suite for testing
- **Equipment**
- **Major incidents**
- **Paediatric cases**
- **Governance**
- **Training & Education**
  - Trauma simulations run regularly, co-coordinated by ED trauma lead, to include islands including GPs, SAS, Coastguard that cover pre-hospital trauma right through to calling SPOC and retrieval services.
  - ETC is provided
- **Rehab**
  - Home First service in place to support community discharge for patients requiring new package of care
  - Intermediate Care Discharge - 7 day service to prevent admission and support in the community.
  - Community OT/PT service but not regularly to all islands resulting in some delays to therapy.
  - Community neuro team including therapy and rehab support workers
  - Red cross house available for step down before going home to the isles.
  - Orkney staff not aware of trauma rehab plans. Need for development of links between local AHP staff with MTC trauma co-ordinators and trauma AHPs.
  - Local OT/PTs have good links with ARI amputee service when patients being repatriated.
  - Moderate trauma patients that stay in Orkney could be supported by locally developed rehabilitation plan. Helen Aslett to support.
- **Repatriation**
  - Repatriation generally from ARI to ward, then home or residential/nursing home
  - Problems with delayed discharges from wards due to lack of residential homes and ability to put care packages together. Meetings are held with social care managers and teams.
- **STAG**
  - STAG Local Area Co-ordinator newly in place and ED Specialty Doctor is lead STAG Clinician
- **Risks**

- MIMC risk is with lack of adaptability potential of old housing stock for repatriation home.

- **Needs from the Network**
  - Support rotation of staff into bigger centres to gain experience (e.g. HDU and radiographers)
  - Peer support process for complex cases.
  - Network to check the contacts they have for trauma in each of the LEHs on a regular basis.
  - Include Dr Monique Sterrenurg in Network Board and also in Clinical Governance meetings, along with Sam Thomas.
  - Liaise with Moira Sinclair on 0.1wte band 6 funding to support local trauma education and governance, perhaps link with new ACT funding.
  - Support feedback mechanism from Orkney staff to SAS/EMRS/SSD.
  - Increase communication between Orkney AHPs and MTC/Woodend AHPs and trauma co-ordinators.
  - Find out if Orkney use the NoS Care Portal and future access to the E-Rehab Plan on it. (*Care Portal available to Orkney staff if they wish to access it)*
  - Establish a process for better combination about fitting of spinal braces.

**Main review key points:**

- Development of stronger relationships between MTC Trauma Co-ordinators/AHPs and use of the patient Rehabilitation Plans.
- Network support of local trauma education and governance capacity
- Network to consider a peer support process for complex cases.
- Network to help facilitate a feedback mechanism to SAS/EMRS/SSD

### 9.3.i Gilbert Bain Hospital, Lerwick, Shetland (LEH)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

**Gilbert Bain Hospital, Shetland 19/01/23**

- **General – 22.5k population. 15 Islands (13 without bridge connection)**
  - No. of beds:
    - 52 beds, 26 surgical, 26 medical
    - 2 HDU beds
    - 6 bedded maternity unit
  - Facilities
    - 2 theatres
    - Day case unit
    - X-ray, ultrasound in hours, CT scanner with some radiographers trained OOH
  - Staffing
    - Broad spectrum of surgery, 3 general surgeons covering lower GI, urology, breast and trauma
    - 1x Obs and Gynae
    - 4x Anaesthetists, in hours will have 3 in hospital, after 5pm 1 in hospital and 1 on call
    - Junior doctors FY2/3, GPST1
  - Catchment area
    - 3 islands have GP 24/7, 4 islands have first responders. All island staff are BASIC Scotland trained.
- **ED**
  - 2 resuscitation rooms, 3 cubicles, 1 plaster room
  - 1x Specialty doctor
  - Band 5/6 nurses and some ENPs
  - Surgical and medical staff rostered for ED
  - OOH have 1 junior doctor and others on call
  - GPs give OOH advice
  -
- **Critical care/stabilisation**
    - HDU 2 beds managed by anaesthetists, nursing staff trained to HDU level (7.6/12.8 wte available).
    - Prepared for 6 hr Level 3 pt hold (max 24 hrs)
- **Pre-alert**
  - Pre-alerts made by the SAS to hospital reception and/or ED 24/7.
  - Coastguard have issues with making pre-alerts directly with hospital due to their route of communication. Sometimes ED do not know a patient is arriving until the helicopter lands. A discussion would be helpful with the Coast guard pre-hospital as often patients should be taken directly to MTC rather than brought to the Gilbert Bain (case example – cardiac arrest on Orkney transferred to Shetland)
- **Transfer**
  - By what means? EMRS
  - Where? ARI MTC
  - Most transfers carried out by fixed wing
  - Primary HLS 5 mins away (on sports field). Secondary HLS 8 miles away.

- EMRS colleagues are very helpful.

- **SPOC utilisation**
  - SPOC availability is very useful although neuro and some cardiothoracic colleagues will not participate in these calls and a separate call to their registrars has to be made.
  - Isolated injury often specialty to specialty
- **Radiology**
  - 1 x CT, 2 x Xray, 1 x USS (in houses but not FAST)
  - In houses ARI. OOH ARI (major trauma only) or Medica
  - A separate call to the SPOC call is required to be made to the Radiologist to ARI/Medica to authorise CT scans which can take half an hour to get agreement.
- **Transfusion**
  - 14 x O-ve, 10 x O+ve, 2 x A -ve
  - 16 x FFP, 4 x cryo
  - Prothrombin concentrates
  - No platelets
  - OOH lab staff – on call from home
- **Equipment**
- **Major incidents**
- **Paediatric cases**
- **Governance**
  - MD should be accountable.
  - Clinical cabinet setup but development needed
  - Medical Director has some concerns about governance re pre-hospital (speak to SAS and BASICS?)
- **Training & Education**
  - Friday lunchtime educational meetings
  - More acute/emergency teaching needed
  - Established pre-hospital/acute pathway training programme with SAS
  - Adult (Pam Hardy et al 18/02) and Paeds (Gillian Winters et al 18/04) training planned
  - No ETC currently
- **Rehab**
  - June Pembrock, OT Lead and Amanda Harrison, Physio Lead. Katherine Coutes, AHP Lead
  - Physiotherapists 13 wte with 1 on ward
  - Intermediate Care Team but no physios involved
  - 2 wte first contact practitioners
  - 2 OTs on wards and assistants, 8 part-time in the community
- **Repatriation**
  - Repatriation generally from ARI to ward, then home or residential/nursing home
  - Rehab staff not aware of rehab plans coming back with trauma patients. Generally, physio to physio without input from trauma coordinators.
  - Care Portal (for eRehab plan) not generally used currently. Trac and SciStore used instead
- **STAG**
  - STAG Local Area Co-ordinator in place and ED Specialty Doctor is lead STAG Clinician
- **Risks**
  - In the process of developing a Major Haemorrhage Protocol
  - No knowledge of Rehab Plans for trauma patients

- **Needs from the Network**

- It would be useful to have one SPOC number for all critically ill, adult and child. It would also be helpful if the SSD call handler could pass on details of the patient to EMRS/MTC without the referring clinician having to repeat themselves.
- It would be helpful if ARI neuro and cardiothoracic consultants had access to imaging at home so they could urgently advise OOH.
- Guidance on when to use SPOC and when to have specialty to specialty discussions
- Possible change of times of Network monthly education sessions from 12 to 2pm to avoid clashes with morning lists.
- Access to recordings of the Network monthly education sessions (being added to the Network Education Teams channel) needs co-ordination for junior doctors due to their rotations (speak to Wendy Cooper)
- More acute medical training would be useful for Network monthly education sessions.
- A Network rib fracture guidance would be helpful
- Links set up between MTC trauma co-ordinators and use of the rehab plan for patients repatriating.
- Make it easier for blood product authorisation and advice during major haemorrhage.

**Main review key points:**

- Network to consider having one telephone number to call for transfer of all critically ill, adult and child, including trauma, to reach the MTC SPOC and ScotSTAR retrieval services.
- Provision from the Network to provide a comprehensive trauma education programme which takes into account local requirements.
- Development of easily accessible Network wide clinical guidelines including:
    - rib fracture guidance
    - use of SPOC v specialty to specialty
- Development of stronger relationships between MTC Trauma Co-ordinators and use of the patient's Rehabilitation Plans.

### 9.3.j Broadford Hospital, Skye (RGH)

**North of Scotland Trauma Network**
**Assurance Visits**
**2022-23**

Tim Hooper – Clinical Lead
Anne-Marie Pitt – Network Manager

**Broadford Hospital, Skye 02/12/22**

- **General – new hospital opened 2022**
  - No. of beds
    - 24 beds,19 in-patient, 4 renal. Single rooms and mixed specialty
    - Portree Hospital still open with additional 6 beds.
    - 10,000 pts/yr. ~60% trauma
    - ~ Major trauma per year
    - ~1 RSI/mth
  - Facilities
    - Non-bypass ED hospital
    - Midwife led maternity
    - Renal Dialysis
    - Chemotherapy & Infusions
    - Outpatient clinics by visiting specialists
    - X-Ray
    - No general surgery, but fracture clinics and minor surgery clinics by REPs
  - Staffing
    - Hospital medical cover is provided by Medical Rural Emergency Physicians (REPs) including ED.
    - Weekdays – 2 REPs (1 ED, 1 ward), 1 ANP or 1 APP (advanced paramedic practitioner), 1 Band 5 ED nurse, plus ward nursing and auxiliary staff
    - OOH– 1 REP & 1 band 5 ED nurse, plus ward staff, for entire hospital & OOH provision for whole of Skye and Lochalsh.
    - ED supported by Rural Support Team made up of ANPs and APPs (who also cover minor illness and injury service and weekend daytime OOH GP service at Portree MIU)
  - Catchment area
    - Skye, Lochalsh and west coast
- **ED**
  - 2 resuscitation rooms, TVs in both for connection to Raigmore
  - 1 plaster room
  - Additional nursing capacity can be provided from the ward in exceptional circumstances
- **Critical care/stabilisation**
  - RSI capability
  - A line and central venous access
  - Blood - 4 O-ve
  - No lab, only near patient testing facilities: iSTAT, CRP, D-dimer, INR
- **Pre-alert**
  - Generally by phone in ED office
- **Transfer**
  - By what means?
    - The secondary transfer of severely injured patients is carried out by EMRS West based at Glasgow airport. Helicopter used but no helipad at the

hospital. Patients are usually taken by road to the small airstrip at Ashaig nearby.
  - Where?
    - Usually taken to West MTC
- **SPOC utilisation**
  - Retrieval number in ED for adults is 03333 990 222 (ScotSTAR generic retrieval number) and paediatrics is 03333 990 249 (also NoS Trauma Transfer Line number). No connection to SPOC (ED Trauma Team Lead) at ARI or Queen Elizabeth is usually requested. Deal directly with EMRS or Paediatric Retrieval Team.
- **Radiology**
  - Plain films
  - POCUS
- **Transfusion**
  - 4 O -ve held in ED blood fridge
- **Equipment**
- **Major incidents**
- **Paediatric cases**
  - Utilise SCRAM bags or paeds resus trolley
- **Training & Education**
  - Local training facility in Portree is Skye Labs, National Centre of Excellence, linked to NES via Emma Watson. Also have Jan's Vans conference centre.
  - REPs have 4 wks/yr for CPD, 2 weeks of which are mandatory anaesthetics, often connecting with ED/ICU/theatres in Raigmore and Glasgow. This in addition to the standard 10 days/year study leave.
  - In-house sim training sessions and visiting teams from Raigmore (SCRAMBAG) and Aberdeen (Paeds trauma training) to provide resus skills training.
  - All REPs are supposed to have valid certificates in ALS, APLS/EPLS, ATLS & SCOTTIE/ALSO.
- **Rehab**
  - The in-patient ward is used for repatriate patients who require ongoing rehabilitation. However, the number of residential homes has reduced drastically on the island and moving patients out of the ward has been difficult.
- **OT/Physio**
  - Trauma patients are seen by non-specialist AHPs.
  - 3 Physio & 1 OT
- **Repatriation**
  - See above
- **STAG**
  - Not currently inputting into e-STAG as not recognised as a Local Emergency Hospital. No STAG Local Audit Coordinator funding available (usually 0.1 wte band 5). Trauma numbers estimated to be similar to the total of Belford and Caithness Hospitals divided by 2 = 6.5 major and 21 moderate per year.
- **Risks**
- **Governance**
  - Monthly M&M meetings cover deaths and transfers.
- **Needs from the Network**
  - Support for case of hospital to have a CT scanner.
  - Support for the provision of education and training
    - Local sim training for whole team
    - ETC
    - Mobile skills centre
    - Consideration of development of Network-wide damage control course (similar to MOST)
    - Facilitate CPD opportunities

- Support on site helipad
- Advise on enhanced blood product capability ? Lyoplas
- Facilitate STAG data capture

**Actions:**

1. Need to understand trauma data to add to the case for obtaining a CT scanner. Currently all ED data is on Adastra. Wil to consider data trawl on Adastra for fractures and lacerations to estimate major/moderate trauma for a year - not feasible time wise. Requested alternative data capture solutions to help facilitate CT scanner business case and LEH designation.

2. Clarify with Wil how clinical governance learning from network meetings would feed back into Broadford governance structures - Monthly M&M meetings held.

**Main review key points:**

- Hospital requirement to understand trauma numbers. This would help facilitate a business case for a CT scanner and onsite helipad.
- Provision from the Network to provide a comprehensive trauma education programme that can be provided locally and also allow for CDP opportunities at the MTC (both adult and paediatric).
- The Network would enable a clear learning feedback loop to hospitals from Network governance processes.
- The Network to provide advice on enhanced blood product capability.
- Network to consider having one telephone number to call for all critically ill, adult and child, including trauma, to reach the MTC SPOC and ScotSTAR retrieval services.

## 9.4 Scottish Trauma Network minimum requirements

The tables reflect the STN minimum requirements for the Network and hospitals within it.

| **Minimum Requirement for Regional Networks (Adult & Paediatric) & Local Emergency Hospitals** | |
|---|---|
| All hospitals and NHS Boards participating in the regional networks are required to: | 1. Commit to being part of a trauma network with designated representation at network meetings<br>2. Participate fully in STAG reporting<br>3. Have robust clinical governance and performance programmes in place to ensure quality assurance and improvement<br>4. Play an active role in relevant research, education and injury prevention programmes that support trauma care across the region<br>5. Engage patients, carers and families in developing services to meet patient need<br>6. Participate in major incident planning locally, regionally and nationally<br>7. Have robust whole hospital business continuity arrangements |

| **Local Emergency Hospitals (LEHs)** | |
|---|---|
| Facilities: | 1. Emergency Department;<br>2. Access to Blood Bank and haemorrhage control medication;<br>3. A major haemorrhage protocol;<br>4. The ability to provide Level 2 care for a limited period of time;<br>5. The ability to provide Level 3 care prior to retrieval;<br>6. The ability to provide in-hospital rehabilitation;<br>7. Access to 24/7 CT imaging and timely reporting;<br>8. Access to 24/7 Plain film radiology imaging and timely reporting;<br>9. Contingency plan for local based transfer where retrieval is not possible;<br>10. Consistent and robust submission to STAG; and<br>11. Commit to being part of a trauma network with designated representation at network meetings. |
| Skills: | 1. Skills necessary for resuscitation are accessible 24/7:<br>• initial assessment/emergency care skills;<br>• anaesthetic skills;<br>• non-operative haemorrhage control skills; and transfusion capability.<br>2. Have the capability and readiness to provide initial life saving care/ resuscitation of MT patient before transferring to MTC/TU.<br>3. Have skills to provide in-hospital rehabilitation, with access to support from specialist rehabilitation professionals when and as required. |

<table>
<tr><th colspan="2">Minimum Requirement for Adult MTC plus rehabilitation requirements</th></tr>
<tr><td colspan="2">Requirements:<ul><li>A dedicated major trauma service.</li><li>A role in providing clinical leadership and support throughout the patient pathway to ensure patients receive co-ordinated, appropriate and definitive care quickly.</li><li>All surgical & support services (emergency medicine, general surgery, orthopaedic surgery, haemorrhage control surgery and imaging, along with services such as critical care and anaesthesia) provide consultant led care.</li><li>Early access to specialist rehabilitation assessment and treatment services.</li><li>A role in supporting other hospitals in the Scottish network in optimising the major trauma patient pathway.</li><li>Robust clinical governance and performance programmes in place to ensure quality assurance and improvement.</li><li>Active role in relevant research, education and injury prevention programmes that support trauma care across the region.</li><li>Commit to being part of a trauma network with designated representation at network meetings</li><li>Participate in regional and national network major incident planning and be prepared to take patients from out with the local catchment area at times of strain on the system.</li></ul></td></tr>
<tr><td>1. A consultant led multi-speciality trauma team 24/7</td><td>Consultant led model delivered by having a dedicated Emergency Medicine (EM) Consultant in the role of Trauma Team Leader (TTL) 24/7/365 for both adults and children.<ul><li>There is a tiered approach to the reception and assessment of all trauma patients (adults and children)</li><li>A Trauma Call System activates a multi-disciplinary Trauma Team to attend the Emergency Department (ED) immediately.</li><li>Specialty Consultant attendance is required for the most seriously injured patients at all times (supported by trainees).</li><li>The Trauma Call System is linked to Scottish Ambulance Service (SAS) procedures for triaging and pre-alerting trauma patients.</li><li>Accurate and timely pre-alert of trauma patients to the ED by the SAS is essential to ensure the appropriate Trauma Team response is activated.</li></ul></td></tr>
<tr><td rowspan="3">2. Immediate on-site access to:</td><td>a. Emergency Medicine Consultants<ul><li>Dedicated EM Consultant in the role of Trauma Team Leader resident 24/7/365</li></ul></td></tr>
<tr><td>b. Anaesthetics/Critical Care Consultant (at senior trainee level)<ul><li>Consultant Anaesthetist attends trauma calls in-hours</li><li>Anaesthetic senior trainee (ST4 and above) are resident out of hours and respond to trauma calls with Consultant Anaesthetist providing virtual support until they arrive in< 30 minutes</li></ul></td></tr>
<tr><td>c. Haemorrhage Control Surgery (at senior trainee level)<ul><li>Consultant attends trauma call in-hours</li><li>Senior trainee (ST4 & above) are resident OOH and respond to trauma calls with Consultant providing virtual support until they arrive in <30 minutes</li></ul></td></tr>
</table>

| | | |
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| | d. General /Orthopaedic Surgery (at senior trainee level)<br>• Consultant attends trauma call in-hours<br>• Senior trainee (ST4 & above) are resident Out of Hours and respond to trauma calls with Consultant providing virtual support until they arrive in <30 minutes | |
| | e. Imaging services<br>• Consultant Radiologist attends trauma call in and out of hours<br>• Radiology team available with on-call Out of Hours team<br>• Emergency imaging services available in / Out of Hours with exception to MRI | |
| 3. Ability to perform resuscitative thoracotomy immediately | | |
| 4. An operational Major Haemorrhage Protocol (MHP) | | |
| 5. Dedicated emergency operating theatre immediately accessible | | |
| 6. Access to appropriate consultants within 30 minutes | a. Cardiothoracic Surgery *<br>b. ENT *<br>c. General Surgery *<br>d. Intensive Care *<br>e. Interventional Radiology *<br>f. Maxillofacial Surgery *<br>g. Medicine of Elderly *<br>h. Neonatal Medicine *<br>i. Neurosurgery * | j. Obstetrics *<br>k. Ophthalmology *<br>l. Orthopaedic Surgery *<br>m. Paediatric Medicine *<br>n. Paediatric Surgery *<br>o. Plastic Surgery *<br>p. Psychiatry *<br>q. Spinal Surgery *<br>r. Vascular Surgery * |
| 7. Immediate access to CT and CT reporting - access to MRI<br><br>Access to IR within 30 minutes of decision | | |
| 8. A specialist multi-disciplinary major trauma inpatient team/service which includes: | a. A Major Trauma Consultant and a Major Trauma Co-ordinator<br>b. Rehabilitation specialists that are tailored to meet the individual patient's needs (views sought from National Rehab group) | |
| 9. Major trauma ward | | |
| 10. Consistent and robust participation in STAG audit | | |

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| 11. Robust clinical governance and quality improvement programmes. These should include: | a. Regular multi-disciplinary case reviews (Trauma M&Ms, regionally / locally)<br>• Monthly MTC M&M meetings led by MTC Governance lead<br>• Regular/Bi-monthly Network M&M meetings led by NoS Clinical Lead for Trauma<br>b. Local review of performance (KPIS / Exception reporting)<br>• Monthly MTC Governance meetings led by MTC Governance lead which will feed into Network Governance structures<br>c. Quality Improvement Programme<br>• Quality Improvement Programme for MTC (linked to NoS & national networks) which supports delivery of KPI's and any other key measures which highlight key areas for improvement<br>d. Annual Formal Review Meetings to discuss performance against the Scottish Trauma Network KPIs<br>• MTC to comply with requirements for annual formal review meeting<br>• Further clarity required from STN re this<br>• Agreed national governance process for management of hospital whose trauma mortality is statistically higher than the Scottish mean (using Tarn Ps and W Statistic methodology)<br>• National governance process to be confirmed and any outlier MTCs to follow agreed process<br>e. Benchmarking of standard for a MTC, TU and LEH and other aspects for the Scottish Trauma Network regionally and nationally<br>• Benchmarking of standards for MTC<br>• STN will guide and support benchmarking of MTCs within Scotland and wider as appropriate |
| 12. Single point of contact to clinical expertise for, and support to, the MT Network to ensure patients receive the highest standards of care | |
| 13. Collaborative programme of multi- disciplinary education and research within MTC and across the national/ regional trauma network. | |
| 14. A defined service for early specialist intensive multi-disciplinary rehabilitation (led by rehab consultant/suitable specialist). | a. Defined early acute rehab services is part of inpatient specialist team who provide assessment and written rehab plan within 72 hours<br>b. Provision of treatment services 7 days a week based on individual needs<br>c. Co-ordinator in place to support minimum requirements<br>d. Psychiatry<br>e. Twenty-four hour access to respiratory physiotherapy |

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| Access to specialist rehabilitation assessment and treatment services 7 days a week which included active coordination function which oversees rehabilitation care and support network colleagues in the provision of ongoing rehabilitation for repatriated patients | f. Orthotics, surgical appliances, from Orthotists and Prosthetists, assistive technology, communication aids, and seating and wheelchair services<br>g. Other services which may be required for the rehabilitation and care of patients who have suffered major trauma are specialist nursing teams (for the management of issues such as external fixators, stoma care), pharmacy, pain management, audiology, optometry and podiatry<br>h. MTC specialist rehabilitation staff should be able to offer advice local clinicians who are supporting major trauma patients across the pathway when required<br>i. Vocational rehabilitation |

| **Minimum Requirement for Paediatric MTC plus rehabilitation requirements** | |
|---|---|
| Requirements:<br>• A dedicated major trauma service.<br>• A role in providing clinical leadership and support throughout the patient pathway to ensure patients receive co-ordinated, appropriate and definitive care quickly.<br>• All surgical & support services (emergency medicine, general surgery, orthopaedic surgery, haemorrhage control surgery and imaging, along with services such as critical care and anaesthesia) provide consultant led care.<br>• Early access to specialist rehabilitation assessment and treatment services.<br>• A role in supporting other hospitals in the Scottish network in optimising the major trauma patient pathway.<br>• Robust clinical governance and performance programmes in place to ensure quality assurance and improvement.<br>• Active role in relevant research, education and injury prevention programmes that support trauma care across the region.<br>• Commit to being part of a trauma network with designated representation at network meetings<br>• Participate in regional and national network major incident planning and be prepared to take patients from out with the local catchment area at times of strain on the system. | |
| 1. A Paediatric trained consultant led multi-specialty trauma team available 24/7 | |
| 2. Consultant Trauma Team Leader available immediately between 08:00 and 24:00 | |
| 3. Immediate in-hours access, and out-of-hours access, to following Paediatric trained Consultants available within 30 minutes of the initiation of the Pre-alert by the Scottish Ambulance Service or pre-hospital team: | • Emergency Medicine<br>• Anaesthetics/Critical Care (at senior trainee level where appropriate)<br>• Haemorrhage Control Surgery (at senior trainee level where appropriate)<br>• General/Orthopaedic Surgery (at senior trainee level where appropriate)<br>• Imaging services including CT and CT reporting |
| 4. The ability to perform a resuscitative thoracotomy immediately 24/7. | |
| 5. A Major Haemorrhage protocol for trauma patients | |
| 6. Dedicated emergency operating theatre immediately accessible | |

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| 7. Access to the following paediatric trained consultants within 30 minutes of initiation of the Pre-alert by the Scottish Ambulance Service or pre-hospital team: | a. Cardiothoracic Surgery<br>b. ENT<br>c. General Surgery<br>d. Intensive Care<br>e. Interventional Radiology<br>f. Maxillofacial Surgery<br>g. Neonatal Medicine<br>h. Neurosurgery<br>i. Obstetrics<br>j. Ophthalmology<br>k. Orthopaedic Surgery<br>l. Paediatric Medicine<br>m. Plastic Surgery<br>n. Psychiatry<br>o. Spinal Surgery<br>p. Vascular surgery<br>q. On site access to MRI 7 days per week. |
| 8. A Major Trauma inpatient service based around a multi-disciplinary team which will include rehabilitation specialists that are tailored to meet the individual patients' needs. | |
| 9. All categorised Major Trauma patients are cohorted within one clinical area. | |
| 10. Consistent and robust participation in the STAG audit | |
| 11. Robust clinical governance and quality improvement programmes. These should include: | a. Regular multi-disciplinary case reviews (at trauma/appropriate M&M meetings, locally/regionally/nationally).<br>b. Local review of performance (KPIs/ exception reporting).<br>c. Quality improvement programmes (related to KPIs).<br>d. Annual Formal Review Meetings to discuss performance against the Scottish Trauma Network KPIs.<br>e. Agreed national governance process for the management of hospitals whose trauma mortality is statistically higher than the Scottish mean (using Tarn Ps and W Statistic methodology).<br>f. Benchmarking of paediatric standards for a MTC, TU and LEH and other aspects of the Scottish Trauma Network regionally and nationally. |
| 12. Single point of contact to clinical expertise for, and support to, the MT Network. | |
| 13. Collaborative programme of multi-disciplinary education and research within the MTC and across the national and regional Trauma Networks. | |
| 14. A defined service for early specialist intensive multi-disciplinary rehabilitation (led by rehab consultant/suitable | a. Provision of treatment services 7 days a week based on individual needs<br>b. Rehabilitation Co-ordinator, to facilitate rehabilitation planning and delivery, and the movement of patients from the MTC through the entire rehabilitation pathway |

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| specialist as defined by national standards such as BSRM). | c. Psychiatry/psychology/neuropsychology services<br>d. Twenty-four hour access to respiratory physiotherapy<br>e. Orthotics, surgical appliances, from Orthotists and Prosthetists, assistive technology, communication aids, and seating and wheelchair services<br>f. Other services which may be required for the rehabilitation and care of patients who have suffered major trauma are specialist nursing teams (for the management of issues such as external fixators, stoma care), pharmacy, pain management, audiology, optometry and podiatry<br>g. MTC specialist rehabilitation staff should be able to offer advice local clinicians who are supporting major trauma patients across the pathway when required<br>h. Vocational rehabilitation |

| **Minimum Requirements for TU plus rehabilitation (all apply to Adults & Paediatrics unless specified)** | |
|---|---|
| a. Manage injured patients from its local catchment area (adults, young adults and children)<br>b. Provide initial care and resuscitation of MT patients<br>c. If skills and expertise are present in TU, care will be provided with input as required by MTC<br>d. (Adult) Have a system in place to identify and transfer under-triaged and self presenting patients to MTC, including availability of clinical escort where required<br>e. (Paediatric) Manage under-triaged and self-presenting paediatric major trauma patients by liaising with the Paediatric MTC and Specialist Services Desk to facilitate urgent retrieval/transfer which may include Modified Primaries by adult or paediatric ScotSTAR teams<br>f. (Paediatric) Accept repatriations from Paediatric MTC and provide acute rehabilitation and has access to specialist rehabilitation as part of a regional approach<br>g. Participate/lead upon research and education and participate in national injury prevention programmes<br>h. Have robust clinical governance and performance systems in place to ensure quality assurance and improvement as part of the network governance programme<br>i. Provide support to LEHs within their catchment area<br>j. Provide training and education to staff in the management of the trauma patient. This will be linked to the wider network programme where appropriate.<br>k. Participate in MDT M&M/governance meetings as per the MTC<br>l. Commit to being part of a trauma network with designated representation at network meetings<br>m. Consistent and robust participation in the STAG audit<br>n. Participate in the network's major incident planning and be prepared to take patients from out with the local catchment area at times of strain in the system | |
| 1. Accept and manage the following patients 24 hours a day, seven days a week | 1. Patients who did not fulfil the SAS criteria to transfer directly to an MTC.<br>2. Patients who fulfilled the criteria for MTC care but were further than 45 minutes away. |

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| | 3. Patients who fulfilled the criteria for MTC care but were not deemed safe for direct transfer due to SAS concerns. |
| 2. Patients assessed in the TU may either | 1. Require an automatic acceptance transfer directly from the TU Emergency Department to the MTC Emergency Department.<br>2. Require transfer to the MTC within 24 hours<br>3. (Paediatric) Time to secondary transfer to a MTC for patients who have suffered major trauma is minimised to:<br>• Referral to mobilisation of transfer team is<60 mins<br>• Referral to team arrival with patients <3 hours (road/mainland responses)<br>• Referral to team arrival with patients <4 hours (island/air response)<br>3. Be definitively managed in the TU. |
| 3. Major Haemorrhage protocol for trauma patients | |
| 4. (Paediatric) 24/7 access to physician with paediatric experience | |
| 5. Access to appropriate consultants within 30 minutes | a. ED Consultant (with paediatric experience for Paediatric TU)<br>b. Anaesthetic consultant (with paediatric experience for Paediatric TU)<br>c. General Surgery Consultant (with paediatric experience for Paediatric TU) |
| 6. Access to appropriate consultants within 60 minutes | a. Orthopaedic consultant (with paediatric experience for Paediatric TU) |
| 7. A specialist multi-disciplinary trauma team consisting of | a. Trauma team leader<br>b. Anaesthetist<br>c. General surgeon |
| 8. Access to CT and CT reporting 24 hours a day (within 60 minutes) | |
| 9. 24/7 access to emergency theatre | |
| 10. 24/7 access to critical care | |
| 11. There should be a multidisciplinary specialist rehabilitation service (as defined by national standards such as BSRM) (Adult & Paediatric) | |
| 12. Suitably skilled named lead for trauma rehabilitation (Adult & Paediatric) | |
| 13. There should be a named person to support coordination of rehabilitation, to facilitate rehabilitation planning and delivery, and the movement of patients from and to the TU and across the trauma network (Adult & Paediatric) | |
| 14. The Trauma Unit should accept patients being transferred from MTCs without delay where those patients have needs which do not exceed the capability of the Trauma Unit in accordance with the timeframe of standards to be set by the STN Rehabilitation and Repatriation Working Group (Adult & Paediatric) | |
| 15. Outreach sessions should be provided to Trauma Units by rehabilitation medical consultant staff from the linked Major Trauma Centre. These sessions should provide support and assist in the management of patients with complex rehabilitation needs. (Adult & Paediatric) | |

| **Minimum Requirement for Rehabilitation and Repatriation Service Adult & Paediatric** | |
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| 1-3. Suitably skilled named | 1. Trauma Network Rehabilitation Lead |

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| | 2. Clinical Lead for Acute Trauma Rehabilitation Services in every MTC<br>3. Clinical Lead for Paediatric Acute Trauma Rehabilitation Services in every Paediatric MTC |
| 4. Rehabilitation coordinator roles throughout the network for adult and paediatric patients available 7 days a week | Patients should have an identified key worker to be a point of contact for them, their carers or GP, and to ensure delivery of their personal plan for rehabilitation. |
| 5-6. A rehabilitation plan should be developed by the multi-disciplinary team in conjunction with the patient and their family/carers. | 5. The plan should reflect the complexity of need to inform the most appropriate rehabilitation input and initiated within 3 days of the patient being admitted to the MTC or TU.<br>6. The rehabilitation plan must accompany the patient throughout the entire rehabilitation journey and be updated to reflect ongoing rehabilitation requirements. |
| 7. Patient and/or their families should be provided with appropriate written information about (Adult & Paediatric): | • The MTC facilities<br>• The care which is tailored to the individuals needs<br>• Rehabilitation services |
| 8. Directory of services and resources should be developed relating to rehabilitation and ongoing care to facilitate referral and access to these services. (Adult & Paediatric) | |
| 9. Integrated Joint Boards and H&SCPs must be integral partners in the planning and delivery of rehabilitation services across the network. (Adult & Paediatric) | |
| 10. The regional network should have in place an agreed policy and Standard Operating Procedure for the repatriation and discharge of patients (adults and paediatrics) developed in conjunction with the SAS. | |
| 11. The regional network should have in place agreed referral pathways for access to rehabilitation services (adults and paediatrics). | |
| 12. The regional network should have a collaborative programme in place of multi-disciplinary education and research within the MTC and across the regional trauma network (Adult & Paediatric) | |
| 13. Quality Improvement Programme | The regional network should have a quality improvement programme in place across the network which includes participation in the STAG audit, the implementation of rehabilitation outcome measures and subsequent learning and service improvement objectives. |
| 15b. Specialist Rehabilitation Service | i. There should be a multidisciplinary specialist rehabilitation team (as defined by national standards, such as BSRM)<br>ii. There should be clearly defined responsible clinician for each patient<br>iii. Specialist Rehabilitation Services should accept patients being transferred from Major Trauma Centres where those patients have needs which do not exceed the capability of the Specialist Rehabilitation Service in accordance with the timeframe of standards to be set by the STN Rehabilitation and Repatriation Working Group; |
| 15c. Local Emergency Hospitals | Where a LEH is routinely providing early step down care for patients, they should meet the requirements of a TU. |

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| | Where the LEH is a Rural General Hospital and receives patients on an ad hoc basis, rehabilitation will be supported by network specialist rehabilitation services. |
| i. There should be a key worker/lead professional for each patient when needed | |
| ii. There should be access to technology enabled care to enable support within community hospitals and patient's home according to their needs | |
| iii. The Rehabilitation Plan should be updated to reflect ongoing rehabilitation requirements | |
| 15d. Community Hospitals and Health &Social Care Partnerships (H&SCPs) | |
| i. H&SCPs should have in place strategic and commissioning plans for rehabilitation services for patients following major trauma which meet national standards | |
| ii. H&SCPs should have in place strategic and commissioning plans that address the social care needs of patients following major trauma i.e. supported accommodation, housing, personal care psychological support and out of area provision etc | |
| iii. There should be a key worker/lead professional for each patient when needed | |
| iv. There should be access to technology enabled care to enable support within community hospitals and patient's home according to their needs | |
| v. The Rehabilitation Plan should be updated to reflect ongoing rehabilitation requirements | |