# **CRITICAL CARE**

National Competency Framework for Registered Nurses in Adult Critical Care

# TRAUMA

## **Specialty Competencies**



NATIONAL MAJOR TRAUMA NURSING GROUP (NMTNG)

National Competency Framework for Adult Critical Care Nurses: Trauma October 2017 Version 1

#### SPECIALTY STEP COMPETENCIES

### **CRITICAL CARE TRAUMA COMPETENCIES**

#### Foreword

These competencies are intended to be used in addition to the Critical Care Network's (CC3N) Step Competencies for nurses working in a critical care environment that cares for and manages trauma patients. The CC3N Step One Competencies should be completed first as a pre-requisite with the specialist Trauma Competencies following these either before or after CC3N Step Two and Step Three competencies according to unit requirements.

These Trauma Competencies are intended to be a complete package for this specialty. They include all of the topics and themes identified by Whiting and Cole (2016) in their work on developing a trauma care syllabus for intensive care nurses in the United Kingdom.

These competencies are intended for use by all critical care facilities that receive trauma patients whether from a Trauma Unit or Major Trauma Centre.

There will be variance between different critical care facilities managing trauma patients and therefore each individual facility should identify those competencies that are relevant (and thus potentially achievable) with those competencies identified as not relevant being marked 'Not Applicable'.

Reference:

Whiting. D, Cole E. Developing a trauma care syllabus for intensive care nurses in the United Kingdom: A Delphi study. Intensive and Critical Care Nursing. (2016), <u>http://dx.doi.org/10.1016/j.iccn.2016.03.006</u>

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#### Learning Contract

The following Learning Contract applies to the Individual Learner, Lead Assessor and Unit Manager and should be completed before embarking on this competency development programme. It will provide the foundations for:

- Individual commitment to learning
- Commitment to continuing supervision and support
- Provision of time and opportunities to learn

#### LEARNER RESPONSIBILITIES

As a Learner, I intend to:

- Take responsibility for my own development
- Successfully complete a period of induction/preceptorship as locally agreed
- Form a productive working relationship with mentors and assessors
- Listen to colleagues, mentors and assessor's advice and utilise coaching opportunities
- Use constructive criticism positively to inform my learning
- Meet with my Lead Assessor at least 3 monthly
- Adopt a number of learning strategies to assist in my development
- Put myself forward for learning opportunities as they arise
- Complete these competencies in the recommended 12 month time frame
- Use this competency development programme to inform my annual appraisal and development needs
- Report lack of supervision or support directly to unit manager at the first opportunity

Signature..... Date.....

#### LEAD ASSESSOR RESPONSIBILITIES

As a Lead Assessor, I intend to:

- Meet the standards of regulatory bodies (NMC 2008)
- Demonstrate ongoing professional development/competence within critical care
- Promote a positive learning environment
- Support the learner to expand their knowledge and understanding
- Highlight learning opportunities
- Set realistic and achievable action plans
- Complete assessments within the recommended timeframe
- Bring to the attention of the HEI, Education Lead and/or Manager concerns related to individual nurses learning and development
- Plan a series of learning experiences that will meet the individual's defined learning needs
- Prioritise work to accommodate support of learners within their practice roles
- Provide feedback about the effectiveness of learning and assessment in practice

Signature...... Date.....

#### CRITICAL CARE LEAD NURSE/MANAGER

As a critical care service provider, I intend to:

- Facilitate a minimum of 40% of learners' clinical practice hours with their mentor/assessor and/or Practice Educator or delegated appropriate other
- Provide and/or support clinical placements to facilitate the learner's development and achievement of the core/essential competency requirements
- Regulate and quality assure systems for mentorship and standardisation of assessment to ensure validity and transferability of the nurses' competence

Signature..... Date.....

T1. Patient Assessment		
You must be able to demonstrate through discussion essential knowledge of (and its application to your supervised practice):	Achieved Date/Sign	Agreed Action Plan Date/Sign
<ul> <li>Rationale for a systems based approach to patient assessment: e.g. <c>ABCDE</c></li> <li>Primary, Secondary and Tertiary Surveys</li> <li>The relevance of the Mechanism of Injury (Mol) when assessing patients e.g. Gun Shot Wounds (GSW), blast, stabbing, Road Traffic Collision (RTC).</li> <li>The relevance of patient diversity and demographics for those who have been injured, e.g. the older patient, obese patient, pregnant patient, the patient with learning disabilities, and those with comorbidities</li> <li>The concept of Missed Injuries and identify the most commonly missed injuries</li> <li>Injury Scoring Tools e.g. Abbreviated Injury Scale (AIS) &amp; Injury Severity Score (ISS)</li> </ul>		
You must be able to undertake in a safe and professional manner:		
<ul> <li>Assist with Primary, Secondary and Tertiary surveys demonstrating a systematic and thorough approach and ensuring documentation is contemporaneous and complete</li> </ul>		

T2. Chest Injury (Respiratory System)		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>The anatomy and physiology of the respiratory system as related to chest trauma</li> </ul>		
• Potentially life threatening thoracic injuries; how each would present and the principle concepts in their management:		
A) Airway obstruction		
B) Massive haemothorax		
C) Open chest wound		
D) Flail chest		
E) Tension pneumothorax		
The concept of Blast Lung		
<ul> <li>Facial fractures and the challenges these present when managing respiratory support</li> </ul>		
Airway management, potential for aspiration and increased risk of		
Ventilator Acquired Pneumonia (VAP) in trauma patients		
You must be able to undertake in a safe and professional manner:	•	
Care and management of the patient with lung contusions, optimising		
lung protective strategies		
Care and management of a patient with rib fractures including the		
challenges of pain management		

T3. Cardiothoracic Trauma (Cardiovascular System)		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>The anatomy and physiology of the cardiovascular system as related to cardiovascular trauma</li> </ul>		
<ul> <li>Potentially life threatening cardiac injuries; how each would present and the principle concepts in their management:</li> </ul>		
A) Cardiac tamponade B) Myocardial contusions		
C) Aortic dissection		
You must be able to undertake in a safe and professional manner:		
<ul> <li>Care and management of the patient following clamshell thoracotomy/thoracostomies</li> </ul>		
<ul> <li>Care and management of the patient following surgery for vascular trauma including checking pulses and using the Doppler</li> </ul>		
<ul> <li>Care and management of the patient who is bleeding e.g. tourniquets, 'femstop', haemostatic dressings</li> </ul>		

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T4. Traumatic Brain Injury (Neurological System)		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
and its application to your supervised practice):	Date/Sign	Date/Sign
• The anatomy and physiology of the brain as related to Traumatic Brain		
Injury (TBI). To include:		
A) Extradural haematoma		
B) Subdural haematoma		
C) Traumatic subarachnoid haemorrhage		
D) Intracerebral haematoma		
E) Cerebral contusions		
F) Diffuse brain injury		
G) Diffuse axonal injury		
H) Concussion		
I) Cerebral herniation		
J) Brain stem death		
<ul> <li>The anatomy and physiology of the brain as related to Primary and</li> </ul>		
Secondary brain injury		
Monroe Kellie Hypothesis		
<ul> <li>The concept of Intracranial Hypertension and its management in</li> </ul>		
conjunction with the Brain Trauma Foundation concepts and principles		
• Rationale and evidence base for pharmacological choices for the TBI		
patient regarding: analgesia, sedation, muscle relaxants, anti-epileptics		
and hyperosmolar solutions		
<ul> <li>Rationale for neurological assessment for: the awake patient, the</li> </ul>		
sedated patient, and the sedated and paralysed patient		
ou must be able to undertake in a safe and professional manner:	-	I
<ul> <li>Care and management of the patient with Intra Cranial Pressure (ICP)</li> </ul>		
monitoring and be able to demonstrate sound rationale for		
troubleshooting potential clinical scenarios		
Care and management of the patient with an Extra Ventricular Drain		
(EVD) and be able to demonstrate sound rationale for troubleshooting		
potential clinical scenarios		
<ul> <li>Care and management of the patient with TBI including:</li> </ul>		
A) Carbon Dioxide (pCO <sub>2</sub> )		
B) Oxygen (pO <sub>2</sub> )		
C) Glucose control		
D) Endotracheal Tube Ties (ETT)		
E) Clustering care		
F) Mean Arterial Pressure (MAP)		
G) Temperature		
H) Sodium (Na⁺) targets		

T5. Abdominal Injury		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>The anatomy and physiology of the abdomen as related to abdominal trauma.</li> </ul>		
<ul> <li>Potentially life threatening abdominal injuries; how each would present and the principle concepts in their management: ruptured/torn spleen, ruptured/torn liver, diaphragmatic rupture, and 'Blast Abdomen'</li> <li>The impact of blunt and penetrating force to the abdominal organs</li> <li>The concepts involved in Intra-abdominal hypertension and abdominal</li> </ul>		
<ul><li>compartment syndrome and the potential complications</li><li>The different mechanisms for abdominal wall closure following</li></ul>		
<ul> <li>abdominal decompression</li> <li>The escalation process and point of contact if complications</li> </ul>		
You must be able to undertake in a safe and professional manner:		
Accurately measure Intra-abdominal pressures		
Care and management of the patient following abdominal trauma		

Achieved	Agreed Action Plan
Date/Sign	Date/Sign
	Achieved Date/Sign

T6b. Spinal Injuries		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>Anatomy and physiology of the spine in relation to trauma</li> </ul>		
<ul> <li>Spinal and neurogenic shock and identify potential complications</li> </ul>		
The concepts involved in the American Spinal Injury Association (ASIA)		
score		
<ul> <li>Potential complications of spinal injury and immobility</li> </ul>		
<ul> <li>Local spinal cord management guidelines and how to access specialist</li> </ul>		
spinal nurse support		
Spinal centre referral process		
You must be able to undertake in a safe and professional manner:	1	
<ul> <li>Awareness of assessment, selection, sizing and placing/fitting of neck</li> </ul>		
collars (demonstrate this in practice if supported by local policy)		
<ul> <li>Care and management of the patient with a collar and neck/spinal</li> </ul>		
immobilisation including awareness of safety issues e.g. not securing this		
to a trolley or bed, and skin care		
<ul> <li>Assisted movement (log rolling) of a patient with a suspected or actual</li> </ul>		
spinal injury		
Management of a patient with a suspected or actual spinal injury in		
regard to bowel management in accordance with neurogenic bowel		
management guidelines		
<ul> <li>Observation for complications such as autonomic dysreflexia, and take</li> </ul>		
appropriate steps to avoid this		
<ul> <li>Timely spinal clearance (as per Trust Policy) and act as patient advocate in proventing delayed spinal clearance.</li> </ul>		
in preventing delayed spinal clearance		
<ul> <li>Accurately complete documentation regarding spinal clearance</li> </ul>		

T7. Burns and Smoke Inhalation		
You must be able to demonstrate through discussion essential knowledge of (and its application to your supervised practice):	Achieved Date/Sign	Agreed Action Plan Date/Sign
<ul> <li>Anatomy and physiology as related to burns (e.g. depth of burns)</li> <li>Anatomy and physiology as related to smoke inhalation</li> <li>Different types of burns/mechanism of injury</li> <li>Potential complications associated with burns</li> <li>Principles involved in fluid administration for the patient with burns e.g. Parkland Formula</li> <li>Mechanisms involved in smoke inhalation and carbon monoxide poisoning; their potential complications and management</li> </ul>		
You must be able to undertake in a safe and professional manner:	•	
<ul> <li>Accurate assessment and calculation of percentage of burns and document these on relevant charts</li> <li>Care and management of complex wounds caused by burns including the management of blisters, debridement strategies and burns/plastics network referrals</li> </ul>		

T8. Major Haemorrhage and Fluid Therapy		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>Physiology as related to haemorrhage, hypovolaemia, fluids and</li> </ul>		
electrolytes related to trauma		
<ul> <li>The concept of major haemorrhage</li> </ul>		
<ul> <li>The concepts involved in hypovolaemic shock due to haemorrhage</li> </ul>		
Rationale for the administration of blood, Fresh Frozen Plasma (FFP) and		
clotting products to the haemorrhaging patient		
<ul> <li>Potential complications associated with massive blood transfusion</li> </ul>		
<ul> <li>Impact of hypocalcaemia, hypothermia and acidosis on patient's ability</li> </ul>		
to clot		
<ul> <li>Strategies to prevent coagulopathies</li> </ul>		
<ul> <li>Targeted fluid therapy and rationale for avoidance of over-infusing</li> </ul>		
trauma patients		
<ul> <li>Choice of fluids for trauma patients</li> </ul>		
<ul> <li>Rationale for Intraosseous (IO) access and delivery of fluids</li> </ul>		
Rationale for Interventional Radiology (IR) for patients who are bleeding		
You must be able to undertake in a safe and professional manner:	-	
<ul> <li>Administration of blood and blood products in accordance with Trust</li> </ul>		
Policy		
<ul> <li>Administration of antifibrinolytic drugs in accordance with Trust Policy</li> </ul>		
<ul> <li>Monitoring of coagulopathic patients including laboratory and point of</li> </ul>		
care testing such as temperature, Calcium (Ca <sup>2+</sup> ) and blood pH		
<ul> <li>Use of viscoelastic monitoring to guide therapies e.g.</li> </ul>		
Thromboelastography (TEG)		
<ul> <li>Care and management for the patient with IO access (including removal)</li> </ul>		

T9. Damage Control Surgery		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>Definition and rationale for Damage Control Surgery (DCS)</li> </ul>		
• Complications of DCS i.e. the 'Lethal Triad' of coagulopathy, acidosis and		
hypothermia		
You must be able to undertake in a safe and professional manner:		
<ul> <li>Care and management for the patient following DCS</li> </ul>		

T10. Multi Organ Dysfunction Syndrome (MODS) in relation to Trauma		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>Anatomy and physiology as related to MODS in relation to trauma</li> </ul>		
<ul> <li>The concepts relating to hypovolaemic shock</li> </ul>		
The concepts relating to septic shock		
The concepts relating to spinal shock		
The concepts relating to neurogenic shock		
The concepts of cardiogenic shock in relation to the trauma patient		
• The concepts of Acute Respiratory Distress Syndrome (ARDS), Acute Lung		
Injury (ALI) and Transfusion Related Acute Lung Injury (TRALI) in relation		
to the polytrauma patient		
The concept of rhabdomyolysis and Acute Kidney Injury (AKI) in relation		
to the polytrauma patient		
<ul> <li>The concepts of coagulopathy and Disseminated Intravascular</li> </ul>		
Coagulopathy (DIC) in relation to the polytrauma patient		

T11. General Trauma Nursing Care and Management		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>Pain management strategies such as;</li> </ul>		
A) Regional nerve blocks		
B) Thoracic epidurals		
C) PCAs		
D) Entonox		
E) Topical analgesia		
Concepts relating to neuropathic pain		
<ul> <li>The link between inadequate pain management and Post Traumatic</li> </ul>		
Stress Disorder (PTSD)		
<ul> <li>Principles of trauma wound management including:</li> </ul>		
A) de -gloving injuries		
B) pin sites		
C) haematoma management		
D) muscle flaps		
<ul> <li>Nutritional assessment and challenges for the trauma patient –</li> </ul>		
minimising muscle wasting		
Principles of the psychological impact of trauma including possible near		
death experience, body image changes, PTSD on the patient		
<ul> <li>Principles of the psychological impact of trauma on families</li> </ul>		
<ul> <li>Resources available for family support following trauma</li> </ul>		
• Concepts relating to End of Life (EoL) for the trauma patient e.g.		
Advanced Directives, Brain Stem Death and Organ Donation		
You must be able to undertake in a safe and professional manner:		
• Systematic and appropriate pain assessment for the trauma patient e.g.		
using Critical Care Pain Observation Tool (CPOT) and accurate		
documentation of findings		
<ul> <li>Care and management of negative pressure wound management</li> </ul>		
systems		
<ul> <li>Assessment of nutritional requirements (in conjunction with a dietitian)</li> </ul>		
ensuring timely delivery of nutritional support		

T12. Organisational and Managerial Concepts		
You must be able to demonstrate through discussion essential knowledge of	Achieved	Agreed Action Plan
(and its application to your supervised practice):	Date/Sign	Date/Sign
<ul> <li>Impact of land transport on trauma patients</li> </ul>		
<ul> <li>Impact of air transport on trauma patients</li> </ul>		
<ul> <li>Concepts involved in preparing the intensive care unit to receive patients involved in a Major Incident</li> </ul>		
<ul> <li>Potential impact of environmental hazards such as radioactive or chemical contamination on patient management</li> </ul>		
<ul> <li>Concepts involved in trauma rehabilitation – referral to MDTs, patient support groups etc</li> </ul>		
<ul> <li>Legal and forensic aspects to management of trauma patients e.g. Police, Safeguarding, Health &amp; Safety Executive Liaison</li> </ul>		
You must be able to undertake in a safe and professional manner:		
<ul> <li>Preparation of the trauma patient for transfer to CT Scan, MRI, Angiography, and the Operating Theatre</li> </ul>		
<ul> <li>Preparation of the trauma patient for inter-hospital transfer e.g. Trauma Unit to Major Trauma Centre</li> </ul>		
<ul> <li>Preparation of the trauma patient for repatriation</li> </ul>		
<ul> <li>Locate the Trust Major Incident Policy and identify the role of the local trust/hospital and ward/department in regard to this</li> </ul>		

## Assessment & Development Plan Records

Trauma Competencies Tracker Sheet

NAME: -

The following table allows the tracking of the Trauma Competencies and should be completed by Mentors, Lead Assessors or Practice Educators (or equivalent) as the individual achieves each competency statement.

TRAUMA COMPETENCIES	Date Achieved	Mentor/Assessor Signature
T1. Patient Assessment		
T2. Chest Injury		
T3. Cardiothoracic Trauma		
T4. Traumatic Brain Injury		
T5. Abdominal Surgery		
T6a. Musculoskeletal Injuries and Compartment Syndrome		
T6b. Spinal Injuries		
T7. Burns and Smoke Inhalation		
T8. Major Haemorrhage and Fluid Therapy		
T9. Damage Control Surgery		
T10. Multi Organ Dysfunction Syndrome (MODS) in relation to Trauma		
T11. General Trauma Nursing Care and Management		
T12. Organisational and Managerial Concepts		

N.B there will be variance between different Critical Care facilities managing Trauma patients and therefore each individual facility should identify those competencies that are relevant - those competencies that are identified as not relevant can be marked "Not applicable".

## Initial Assessment & Development Plan

Date:

This meeting between Learner and Lead Assessor should take place on commencement of these competencies. It is to identify the needs of the nurse and those competencies that should be attained within the first 3 months of commencing the competency development programme.

#### CURRENT CRITICAL CARE KNOWLEDGE, UNDERSTANDING AND SKILLS

COMPETENCIES TO BE ACHIEVED

SPECIFIC SUPPORTIVE STRATEGIES REQUIRED

Learners Signature: .....

Lead Assessors / Practice Educators Signature: .....

## Ongoing Assessment & Development Plan

Date:

This meeting between Learner and Lead Assessor is to identify the progress made by the nurse in achieving competence in practice against those competencies identified in the initial/previous meetings. It is here further objectives will be set. Ongoing assessments should take place at least every 3 months. If the learner requires additional support a further action plan can be completed

**REVIEW OF COMPETENCIES ACHIEVED** 

ON TARGET: YES / NO

IF NOT, WHICH COMPETENCIES HAVE YET TO BE MET

REASONS FOR NOT ACHIEVING

SPECIFIC OBJECTIVES TO ACHIEVE COMPETENCE

KEY AREAS & ADDITIONAL COMPETENCIES TO BE ACHIEVED BEFORE NEXT MEETING

Learners Signature: .....

Lead Assessors / Practice Educators Signature: .....

## Additional Action Planning

Date:

This document is to be completed as required to set SMART objectives for the learner who requires additional support to achieve certain competencies (these will have been identified during the 3 monthly On-going Assessment & Development Plan).

#### AREAS FOR FURTHER ACTION PLANNING

Learners Signature: .....

Lead Assessors / Practice Educator Signature: .....

NEXT AGREED MEETING DATE:

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## **Final Competency Assessment**

#### Date:

This meeting is to identify that all the competencies have been achieved and that the nurse is considered a safe, competent practitioner.

#### COMPETENCY STATEMENT

The nurse has been assessed against the competencies within this document and measured against the definition of competence below by critical care colleagues, mentors and assessors and is considered a competent, safe practitioner within the critical care environment:

## "The combination of skills, knowledge and attitudes, values and technical abilities that underpin safe and effective critical care nursing care and interventions".

As part of quality assurance, the nurse is expected to maintain a portfolio of practice as part of NMC regulations to support ongoing competence and declare any training development needs to their line manager.

Competency will be reviewed annually as part of staff personal development plans. Where necessary, objectives will be set to further develop any emerging competency required to work safely within the critical care environment.

#### LEAD ASSESSOR COMMENTS

#### LEARNER COMMENTS

Learners Signature: .....

Lead Assessors / Practice Educators Signature: .....

## Annual Competency Review

Date:

This record is a statement between the nurse who has completed their Trauma competencies successfully and their Assessor/Practice Educator and/or Appraiser. It should be used and reviewed alongside local appraisal systems annually to ensure that the nurse continues to demonstrate themselves as a safe, competent critical care practitioner.

OVERALL COMPETENCY MAINTAINED: YES/NO

IF NOT, WHAT COMPETENCIES REQUIRE FURTHER DEVELOPMENT

SPECIFIC OBJECTIVES TO ACHIEVE COMPETENCE

#### FURTHER COMMENTS

Learners Signature: .....

Lead Assessors / Practice Educators Signature: .....

## Abbreviations

AIS	Abbreviated Injury Scale
AKI	Acute Kidney Injury
ALI	Acute Lung Injury
ARDS	Acute Respiratory Distress Syndrome
ASIA	American Spinal Injury Association
ССРОТ	Critical Care Pain Observation Tool
DCS	Damage Control Surgery
DIC	Disseminated Intravascular Coagulopathy
EoL	End of Life
EVD	Extra Ventricular Drain
FFP	Fresh Frozen Plasma
ICP	Intracranial Pressure
10	Intraosseous
IR	Interventional Radiology
ISS	Injury Severity Score
MODS	Multi Organ Dysfunction Syndrome
Mol	Mechanism of Injury
PoP	Plaster of Paris
PTSD	Post Traumatic Stress Disorder
TBI	Traumatic Brain Injury
TEG	Thromboelastography
TRALI	Transfusion Related Acute Lung Injury
VAP	Ventilator Acquired Pneumonia

## Learning Resources

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## Websites

http://www.nmtng.co.uk - National Major Trauma Nursing Group, United Kingdom.

http://www.trauma.org – Global education, information and communication resource.

<u>https://braintrauma.org/guidelines/guidelines-for-the-management-of-severe-tbi-4th-ed#</u> - Brain Trauma Foundation, evidence based guidelines.

https://www.nice.org.uk/guidance/ng40

http://asia-spinalinjury.org/learning/ - Spinal Injuries education resource.

http://www.elearnsci.org/ - Spinal Injuries education resource.

## Acknowledgements

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Chair Critical Care Sub Group of The National Major Trauma Nursing Group:

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#### National Major Trauma Nursing Group (NMTNG) 2017

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