HSE National Patient Safety Alert (NPSA)
Date of issue 12 December 2024 ***Unique ID*** HSENPSA 003/2024

Access alert and resources online ⟶

Clinical Governance of Traumatic Brain Injury (TBI) in non Neuro-Surgical Centres (all acute hospitals)

WHO needs to take action?

This is a safety critical HSE National Patient Safety Alert (NPSA) to be implemented by all acute hospital sites (including paediatrics) and neuro-surgical centres (NSC). This alert is for action by those providing acute care to patients with a traumatic brain injury (TBI). A TBI is an alteration in brain function, or other evidence of brain pathology, caused by an external force (e.g. fall, accident, assault, injury). The Senior Accountable Officer supported by the Clinical Director and Leads of Surgery and Emergency Medicine should coordinate implementation of applicable actions.

WHAT is the safety issue?

This HSE NPSA underlines the immediate requirement for all hospitals to have:

1. Robust clinical governance arrangements in place for the continuous care and management of patients admitted to hospital with a TBI so that a named responsible Consultant keeps the patient under constant review at the admitting hospital with documented formal handover of care as required.
2. Up-to-date and evidence-based policies and procedures for managing a patient with TBI and recognising the deteriorating or unstable patient, including guidance on agreed escalation triggers to help identify the deteriorating patient at ward level and trigger referral to critical care/anaesthetics. This must include agreed local policy for escalation by family/carers.
3. Clear and accessible instruction on how and when to refer a patient to a Neuro-Surgical Centre, and how to coordinate management of patients not transferred to a Neuro-Surgical Centre but who require on-going in-patient care.
4. Caring for patients with a TBI requires effective and reliable clinical handover processes (including clear, complete and accessible documentation) in place to be used for; shift handover, including for out of hours care, inter-departmental handover and inter-hospital handover.

WHEN does action need to be completed?

Please circulate this HSE NPSA to relevant staff by **16 December 2024**
Actions 1-5 must be implemented **immediately**
Actions 6-11 must be completed **within 6 months (12 June 2025)**
Action 12 must be completed **within 12 months (12 December 2025)** and then **repeated annually at a minimum** depending on the finding of audits.

WHAT stakeholders were involved in issuing this HSE NPSA?

- Office of the Chief Clinical Officer
  - National Office for Trauma Services
  - The National Clinical Programme for Anaesthesia
  - The National Clinical Programme for Surgery
  - The National Clinical Programme for Critical Care
  - The National Emergency Medicine Programme
  - The National Acute Medicine Programme
  - National Quality & Patient Safety Directorate - Incident Management Team
  - HSE National Patient Safety Alerts Committee
- National Neurosurgery Centre (NNC) - Beaumont Hospital
- Neurosurgery Department - Cork University Hospital

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HOW to take action?

This alert is accompanied by the 'Trauma System Implementation Programme - Protocol for the management of acute traumatic brain injury in non-neurosurgical hospitals 2024' to support local implementation of required actions below.

1. **Identify** a senior clinician in your hospital to lead the response to this alert.
2. **Every patient with TBI must at all times have a named Consultant** who has and is aware of clearly defined responsibilities and accountabilities, including for locum cover, out-of-hours care, during handover and transfer.
3. **Put in place** clear and accessible instructions on how to contact and re-escalate a patient to the NSC, including:
   - Referral of all TBI patients to the NSC using the national (recorded) service 1800-TRAUMA / 1800-872-862
   - If a patient deteriorates or there are other concerning triggers re-contact with the NSC must be via 1800-TRAUMA / 1800-872-862
   - All referrals to a NSC are undertaken by senior clinical staff - Consultant or Registrar only. A Senior House Officer can refer via 1800-TRAUMA only following authorisation by a Consultant or Registrar who cannot undertake the referral due to serious clinical commitments such as surgery / emergency. The responsible Consultant MUST be aware of all such communication and of advice received.
4. **Use** a structured, standardised communication approach for clinical handover, communication of the acutely unwell or deteriorating patient with a TBI, incorporating specific communication tools such as ISBAR & ISBAR 3 (Introduction, Situation, Background, Assessment and Recommendation). Ensure and document that communication has been received, understood and advice given has been acted upon.
5. **Ensure** that on-going communication to a NSC is by a senior clinician (Registrar level or above) and that the responsible Consultant at the admitting hospital is aware of all such communication and consequent advice.
6. **Develop/update and implement** policies, procedures and training to ensure there are robust clinical governance arrangements for the management of patients with TBI from point of entry in the Emergency Department, to admission and to transfer or discharge.
7. **Develop/update and implement** policies, procedures and training which set out the requirements for monitoring the patient regularly. Clinical examination is key to identification of the deteriorating patient with an acute TBI, see **page 4,** referenced from the 'Protocol for the management of acute traumatic brain injury in non-neurosurgical hospitals 2024' regarding triggers for the escalation of care (when a patient with TBI shows signs of deterioration).
8. **Develop** clear local pathways for the patient's family/carer to inform staff of the patient's baseline/usual condition and to escalate their concerns regarding any deviation or deterioration from this. Incorporate in policies, procedures and training the requirement that such concerns must be acted on and investigated further.
9. **Incorporate** in policies, procedures and training that expressions of concern from nursing staff, health and social care professionals or staff in training are recognised as triggers for escalation of care. It is important that advice received is understood and acted upon.
10. **Neuro-Surgical Centres must include** in their processes: mechanisms for monitoring, escalating and managing increasing expressions of concern from acute hospitals regarding a patient including escalation to the relevant Neuro-Surgical Consultant.
11. **Ensure** that relevant guidance information is available and used by all, including new, locum and trainee staff by revising induction, local training, simulation training and audit.
12. **Audit** compliance with local policies, procedures and training requirements that have been developed, revised or updated locally on foot of this HSE NPSA and address any findings.

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Why is this action required?

This HSE NPSA shares critical learning to support the effective management of patients with TBI following; a serious patient safety incident, recommendations from system analysis (SA) reviews and evidence of inconsistent clinical governance arrangements.

Key areas to consider include:

1. Clinical Governance Arrangements
2. Effectively Managing the Deteriorating Patient
3. Written and Verbal Communication
4. Effective Clinical Handover

1. Clinical Governance Arrangements

- Need to be explicit and reliably practised with a named Consultant assigned to each patient.
- Hospitals must have clear and accessible guidance on the roles and responsibilities for both primary and on-call / locum Consultants when a patient is in their care.
- Hospitals must ensure continuous, unbroken and agreed clinical responsibility is in place that is clear and workable for all staff.

2. Effectively Managing the Deteriorating Patient

Recognising and effectively managing deteriorating and/or unstable TBI leads to improved outcomes. Each one of the elements below is an essential component when monitoring the patient with TBI:

- Continuous monitoring of clinical and neurological status with radiological and laboratory results (i.e. electrolyte levels) as per the care escalation triggers described on page 4.
- Promptly identifying and addressing the concerns of the patient and/or family.
- Maintaining a high index of suspicion for clinical deterioration.
- Any clinical concern should be discussed with the relevant Neuro-Surgical Centre. Appendix 1 from the Central Trauma Network outlines the clinical status of cases accepted by the NSCs.

3. Written and Verbal Communication

- Robust written and verbal communication with Neuro-Surgical Centres is essential in co-ordinating and delivering safe and effective care.
- Clear, prompt and early communication is essential and a low threshold for referral is key and safe.
- It is imperative to document and follow the advice received from each interaction with the Neuro-Surgical Centre regarding treatment, transfer and need for imaging.

4. Effective Clinical Handover

Effective clinical handover for reducing risk and enhancing patient safety for patients with TBI has been identified in a number of SA reviews. The point at which responsibility is transferred and accepted needs to be agreed between both departments / parties, be explicit and be formally documented.

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Recognition and escalation of clinical deterioration in patients with acute TBI in non-neurosurgical hospitals

Pg. 8 - Protocol for the management of acute traumatic brain injury in non-neurosurgical hospitals

It must be recognised that while not all patients with a TBI will require transfer to a neurosurgical centre, their clinical condition may change during the course of their inpatient stay. Medical and nursing staff caring for these patients must be aware of the clinical signs of deterioration in patients with an acute TBI and must take appropriate action when these signs are recognised.

Clinical examination is key to identification of the deteriorating patient with an acute TBI.

The following should also trigger an escalation of care for patients with an acute TBI who are admitted in hospitals without a neurosurgical service:

1. Any deterioration in the patient's neurological assessment, in particular any;
    a. Deterioration in the motor aspect of the patient's Glasgow Coma Scale (GCS);
    b. New focal motor deficit;
    c. New pupillary asymmetry;
    d. New decrease/loss of pupillary reactivity;
    e. Increasing disorientation, confusion, nausea, vomiting;
    f. Any change in condition that requires repeat CT scanning.
2. Concern expressed by nursing staff;
3. Concern expressed by the patient or their family/next of kin;
4. A deterioration in their National Early Warning Score (NEWS);
5. Abnormal investigations pertinent to the TBI;
    a. Radiological investigations i.e. repeat CT scans at the advice of the neurosurgery team or following a clinical deterioration;
    b. Laboratory investigations, with particular reference to serum electrolytes given the risk of hyponatremia in patients with an acute TBI and the potential for significant harm if untreated.

Where a trigger for escalation is noted, this change must be reported to the responsible local consultant, the relevant neurosurgical service and the local intensive care service without delay.

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Future Developments

To help further reduce potential risks associated with the referral of patients to Major Trauma Centres (MTCs) including neuro-surgical referrals, the HSE National Office for Trauma Services (NOTS) are exploring how to further streamline and improve the referral process. The NOTS are currently developing a standardised national referral process including the introduction of a National Standard Trauma Clinical Referral Form. This form is available to download from NOTS for use in the referral of trauma patients. Options for an on-line standard Clinical Referral Form that will facilitate communication with multiple clinical stakeholders and provide feedback and alerts are currently being explored.

Appendix 1: – Conditions for Inter Hospital referral to Beaumont Hospital and Cork University Hospital from the Central Trauma Network

1800-TRAUMA: Conditions for Inter Hospital referral to Beaumont Hospital from the Central Trauma Network

Agreed operational and injury conditions for trauma patient referral from hospitals across the Central Trauma Network (CTN) to the National Neurosurgical Centre at Beaumont Hospital.

BEAUMONT HOSPITAL

Updated as of Q1 2024.

Operational Inclusions	Injury Inclusions & Exclusions (following discussion)
• **All patients with TBI and an abnormal CT scan must be discussed with neurosurgery** • NCHD to NCHD referral initially • Online proforma completed • Transfers will take place when clinically indicated. • Some transfers may be safely delayed until next day or according to bed availability.	**Patients with GCS 13-15 with:** • Extradural haematoma (EDH) > 5 mm in thickness • Subdural haematoma (SDH) > 5 mm in thickness • Contusion > 4 cm (30 cc); midline shift > 5 mm • Open skull fracture with torn dura / exposed brain. • Other patients on a case by case basis. **All patients with GCS 9-12:** except those with a completely normal CT scan **All patients with GCS 3-8:** Exceptions: The following situations require case by case discussion between referrer and neurosurgeon and may not be appropriate for transfer: • Completely normal CT scan and high alcohol or drug levels on toxicology who qualify for wake & assess. • Bilaterally dilated and unreactive pupils where any intervention is deemed futile. • Age > 75 years – the prognosis in this age group with severe TBI (GCS 3-8) is extremely poor and decisions will be made case by case.

HSE Trauma Care Ireland 2

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Appendix 2: - Where can I get more information?

- Guidance on communicating with and transferring suspected TBI injuries to MTCs and NSCs is available in:
  - The Trauma Inter-hospital Referral Process (1800-TRAUMA / 1800-872-862)
    https://cuhemergencymedicine.ie/1800-trauma/#:~:text=The%20Trauma%20Inter%2Dhospital%20Referral,of%20the%20National%20Ambulance%20Service
  - Trauma System Implementation Programme – Policy on Transfer of Care and Egress of Trauma Patients from Acute Hospitals (2023)
    https://www.hse.ie/eng/about/who/acute-hospitals-division/trauma-services/resources/policy-on-transfer-of-care-and-egress-of-trauma-patients-from-acute-hospitals.pdf
- The individual NSCs require additional referral documentation to be completed along with 1800-TRAUMA
  - The NNC at Beaumont Hospital uses an electronic Clinical Referral Form, available on their website for clinician use only
  - Cork University Hospital requires the completion of a referral form, available at:
    https://cuhemergencymedicine.ie/south-trauma-network-major-trauma-clinical-referral-form/
- Guidance on clinical handover is available in:
  - Communication (Clinical Handover) in Acute and Children's Hospital Services National Clinical Guideline no 11
    chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://assets.gov.ie/11588/48b91100bd2f483bbe4b88e1a3ae7b0b.pdf
  - Medical Council Guide to Professional Conduct and Ethics (2024)
    https://www.medicalcouncil.ie/news-and-publications/publications/guide-to-professional-conduct-and-ethics-for-registered-medical-practitioners-2024.pdf
- Guidance on the management of acute TBI in non-neurosurgical hospitals is available in:
  - Trauma System Implementation Programme - Protocol for the management of acute traumatic brain injury in non-neurosurgical hospitals (2024) (accompanying this alert)
- Guidance on recognising, responding to and escalation of the deteriorating patient is available in:
  - Irish National Early Warning System – Version 2
    https://www.hse.ie/eng/about/who/nqpsd/qps-improvement/irish-national-early-warning-system-inews-.html
  - Paediatric Early Warning Score
    https://www.hse.ie/eng/about/who/cspd/ncps/paediatrics-neonatology/paediatric-early-warning-score/
- HSeLand courses: (https://www.hseland.ie/) including The National Trauma Triage Tool / Effective Team Communication / ISBAR - Communication in Context of Clinical Handover
- Resource Manual & Facilitator Guide For Clinical Handover: An Inter-disciplinary Education Programme (2017)
  https://healthservice.hse.ie/filelibrary/onmsd/resource-manual-facilitator-guide-for-clinical-handover-an-inter-disciplinary-education-programme.pdf

For queries on this alert or other HSE National Patient Safety Alerts please visit www.hse.ie/pst or email patientsafetytogether@hse.ie