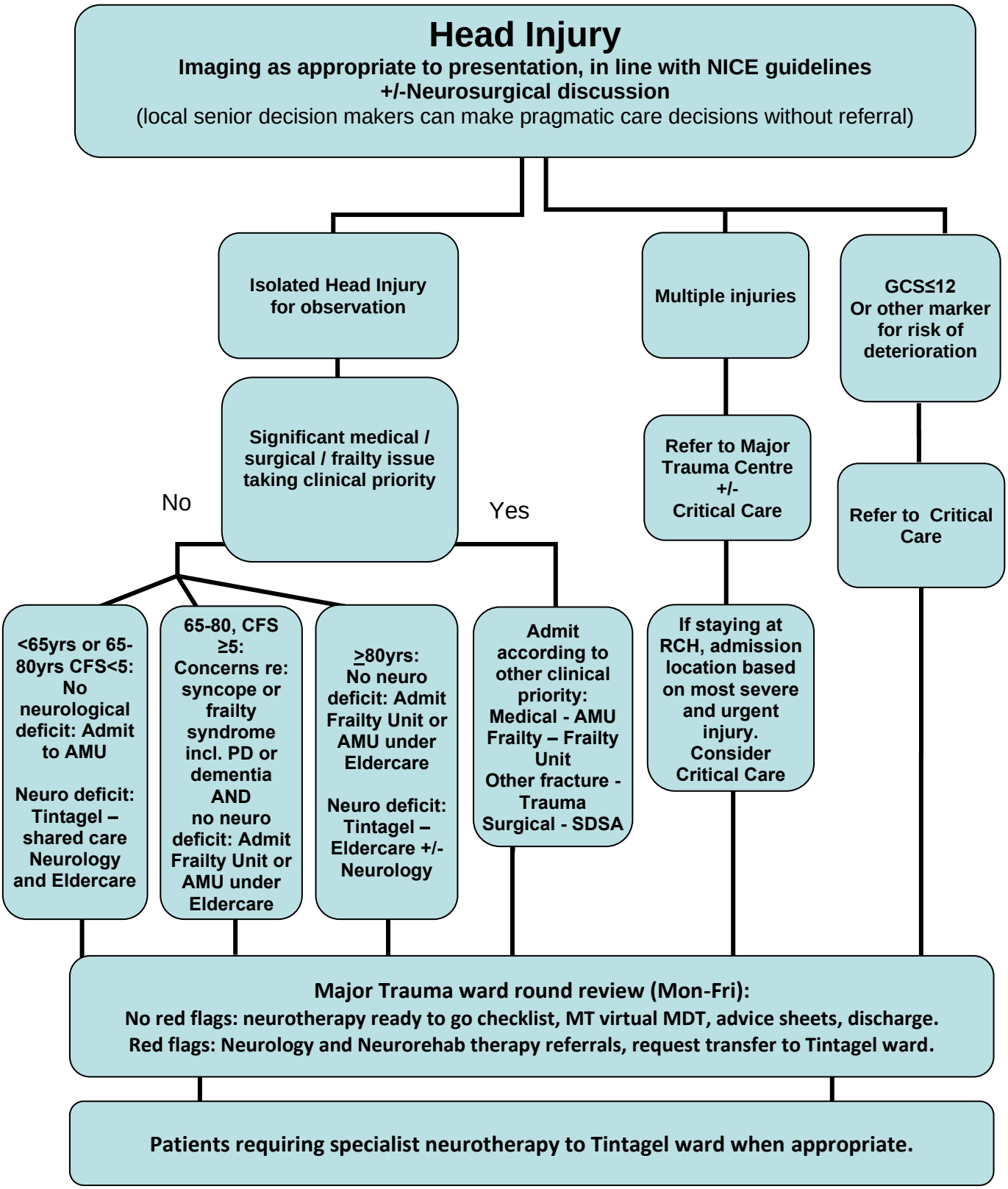
Royal Cornwall Hospitals
NHS Trust

Adult Head Injury Pathway

V4.0

November 2023

Summary of In-patient Admission Pathway



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1. Introduction

1.1. National Institute for Clinical Excellence (NICE) Clinical Guideline (CG) 176 states, “In the UK, patients with head injury have historically been observed on non-specialist wards by nurses and doctors not experienced in neurological observation. In 1999, The Royal College of Surgeons of England … advised that patients with head injury should not be observed in non-specialist wards, but it is unclear whether this has resulted in an increased proportion of patients with head injury being observed in appropriately staffed wards.”

1.2. This local guideline is designed to be pragmatic. It recognises that all patients with traumatic brain injury (TBI) should be managed by those with specialist expertise e.g. consultants in neurology, supported by specialist nurses and neuro-therapists. However, our current local resource does not allow for this, demand for neurological beds exceeds supply, additionally there is insufficient regional resource. It is not in the best interests of our patients to move all those with minor TBIs to a neurosciences centre for observation. Additionally, other injuries/conditions may warrant admission to a non-neurology ward. Therefore, patients with TBI are being managed by non-specialists for all or part of their admission.

1.3. This guideline aims to support staff in placing the patients who do not require transfer out, in the most appropriate clinical location at RCH by giving structure to the difficult decisions made daily in admitting and managing patients with acute TBI at RCH.

1.4. Audit of this pathway will use NICE guidance as the standard for best practice.

1.5. This version supersedes any previous versions of this document.

2. Purpose of this Policy/Procedure

2.1. To ensure that patients within Cornwall and Isles of Scilly sustaining head injury receive the appropriate assessment, correct care, and treatment in the correct timeframe.

2.2. To ensure that patients sustaining head injury in the community will be taken to the most appropriate hospital for their condition.

2.3. To support excellent pre-hospital communication that will ensure that patients requiring time-critical assessment will receive it.

2.4. To guide clinicians in assessing and treating all patients as per NICE Head Injury Guidelines CG232 https://www.nice.org.uk/guidance/ng232.

2.5. To ensure that patients requiring time-critical neurosurgery are identified rapidly and receive emergency transfer to Derriford Hospital.

2.6. To ensure that patients requiring admission receive neurological observations as per NICE CG232 in an area where staff are trained to observe patients with head injury.

2.7. To ensure that patients with multiple care needs are managed by the most appropriate specialty.

2.8. To ensure that where patients with TBI require more than 24 hours in hospital, they are assessed by rehabilitation teams with experience of TBI.

2.9. To facilitate emergency re-assessment by staff specifically trained in the assessment and management of TBI in the event of deterioration whilst in hospital.

2.10. To ensure that patients discharged home receive guidance on home management and follow-up care.

3. Scope

Clinical staff in the Emergency Department, Acute Admitting Specialties, Critical Care, Anaesthesia and Neurology.

4. Definitions / Glossary

4.1. For the purposes of this guideline, head injury is defined as any trauma to the head other than superficial injuries to the face (NICE CG232).

4.2. “Mild traumatic brain injury” is defined as GCS 13-15.

4.3. “Moderate traumatic brain injury” is defined as GCS 9-12.

4.4. “Severe traumatic brain injury” is defined as GCS less than or equal to 8.

5. Ownership and Responsibilities

5.1. **Lead professional:** Clinical Lead for Major Trauma.

5.2. **Specialist staff:** Medical and Nursing Staff in Emergency Medicine; Critical Care; Anaesthesia; Acute Medicine; Neurology And General Surgery.

5.3. Role of the Managers

Line managers are responsible for ensuring this guideline is disseminated to the appropriate staff and reviewed at the appropriate time.

5.4. Role of the Major Trauma Review Group

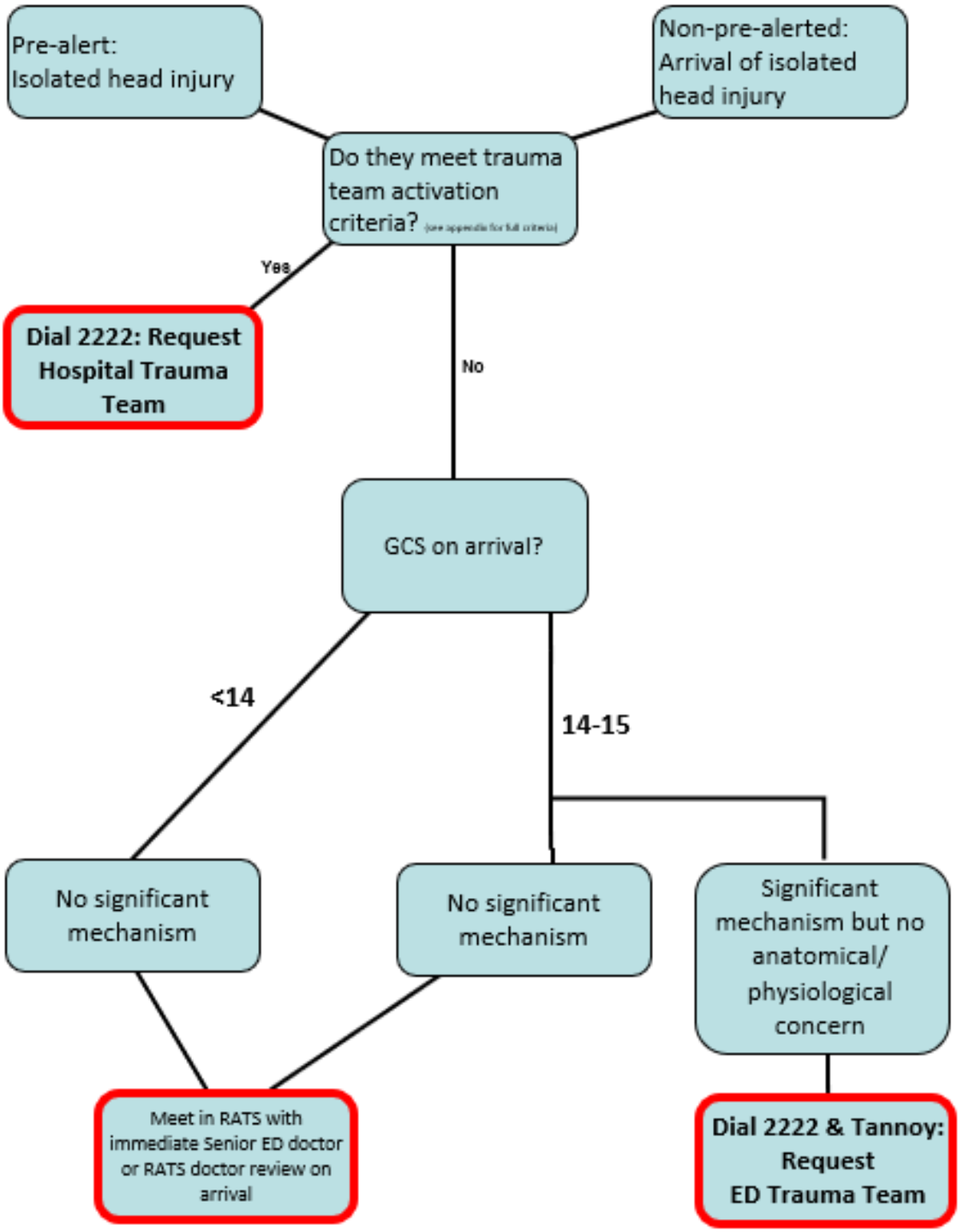
The Major Trauma Review Group is responsible for reviewing this guideline and monitoring its’ implementation.

5.5. Role of Individual Staff

All staff members are responsible for ensuring they have read this guideline and refer to it when managing patients with head injury.

6. Standards and Practice

6.1. Emergency Department (ED) Arrival



6.2. **Initial Assessment and Imaging**

6.2.1. Patients will be assessed using NICE guidance as per the Adult Head Injury Proforma (Appendix 4).

6.2.2. The algorithm in Appendix 3 (reproduced from NICE guidance) should be followed to ensure prompt decision-making regarding CT following head injury.

6.2.3. All patients with head injury should be considered for C-spine imaging at the time of CT head. The algorithm in Appendix 3 (reproduced from NICE guidance) should be used to determine whether the patient requires both CT head and C-spine. Caution is required in >65s. Unless able to clinically clear C-spine on initial assessment consider C-spine at the same time as head. If unsure about this decision it must be discussed with a senior ED clinician.

6.2.4. For patients who are anticoagulated (warfarin/DOAC/heparin/LMWH) or on an antiplatelet agent other than aspirin at the time of head injury, who have no other indications for scan, a senior decision-maker or senior ED clinician should be consulted (consider ED advice line x6341) to determine the requirement for a CT scan within 8 hours.

6.2.5. Patients on aspirin monotherapy, who have no other indication for CT following head injury, do not require CT head.

6.2.6. Patients on dual antiplatelet agents (DAPT), who have no other indication for CT following head injury, should be discussed with a senior decision-maker or senior ED clinician.

6.2.7. If patient is frail (Clinical Frailty Score >5) and on antiplatelets or anticoagulants with no other indication for CT following head injury, monitoring alone (particularly in acute and community hospitals/care homes) maybe appropriate if neurosurgery would not be appropriate for that patient and/or the patient does not wish to be transferred for imaging. Senior decision makers can consider and decide on value added by CT head scan. Between 8am and 8pm individual cases can be discussed with the frailty phone if indicated (01872 252161).

6.2.8. If deciding to delay or not to perform a CT head scan following significant head injury, consider stopping anticoagulation and antiplatelet medication (except aspirin) for a period of 4-10 days. Also consider reversal of anticoagulation – see ‘Bleeding Related to Antithrombotic Medications Clinical Guideline, V1.0, March 2023‘. This must be balanced against the benefit of the anticoagulant / antiplatelet agents during that time: a patient with active occlusive thrombovascular disease will have greater benefit from continuing the drug therapy early after traumatic brain injury. When such drug therapy is considered essential, this may increase the benefit from a head CT scan by allowing for a better-informed decision.

6.2.9. Recommencing anticoagulants following significant traumatic brain injury is a balancing act: most secondary haemorrhagic events occur within 72h and reductions in all-cause mortality has been shown when anticoagulants are recommenced within 1-2 weeks of TBI. Senior clinician advice +/- neurosurgical input should be sought for these decisions.

6.2.10. Manage pain effectively to mitigate its negative effects on intracranial pressure.

6.2.11. In-patients who sustain a new head injury during their stay (e.g. due to a fall) should be assessed thoroughly for any new injuries. Appendix 7 'Doctors Inpatient CR Head Injury Review Form' should be completed and used to determine the need for, and urgency, of a CT head.

6.3. **Tranexamic Acid**

6.3.1. If not given pre-hospital, tranexamic acid should be considered during initial assessment.

6.3.2. For patients with traumatic head injury, with GCS 12 or less, not thought to have active extracranial bleeding, consider a bolus of intravenous tranexamic acid as soon as possible within 2 hours of injury. Dose according to age: adult (16 and over) 2g as per NICE CG232.

6.4. Transfer of Patients for CT scan

6.4.1 The Safe Transfer of Patients Policy should be adhered to (Safe Transfer of Patients Between Care Areas or Hospitals Policy), including transfer checklist completion, minimum monitoring standards and appropriately trained staff for patient condition.

6.4.2 Patient with GCS less than 9 (severe head injury) require airway protection and must be accompanied by a suitably qualified clinician at all times.

6.4.3 Combative patients who may require sedation to facilitate scan should be discussed with senior clinicians with consideration for involvement of critical care. The team must remain prepared to rescue the airway from vomiting/regurgitation whilst maintaining cervical spine protection if required at any time around/during transfer.

6.4.4 Continuation of neuroprotective measures to reduce risk of secondary brain injury should be maintained throughout transfer for imaging.

6.4.5 C-spine immobilization must be maintained throughout transfer and imaging if in place.

6.5. Discussion with Neurosurgery and Major Trauma Centre (MTC)

6.5.1. Patients meeting any of the following automatic acceptance criteria, regardless of the mechanism of injury, are automatically accepted by Derriford as the MTC (see Appendix 8 for hyperlinks to the latest Network guidelines):

- Definite penetrating cranial trauma.
- Intubated head injury patient.

6.5.2. National guidance indicates that patients within a trauma network requiring craniotomy for isolated brain injury should have this undertaken within 4 hours of injury.

6.5.3. Patients meeting automatic acceptance criteria require time critical transfer to Derriford Emergency Department. Telephone the Major Trauma Centre Trauma Team Leader (TTL) 24/7 on 01752 245066. The TTL will inform the neurosurgical team and neuro-intensive care. A telephone update upon leaving RCHT with an expected time of arrival and further call 10 minutes from arrival is required. If, for any reason, the MTC TTL cannot be reached this should not delay time critical transfers and subsequent efforts to communicate the patient's intended arrival should be made.

6.5.4. Patients who do not meet automatic acceptance criteria but have any of the following:

- New or significant injury on CT scan.
- Diagnosis of TBI following CT scan.
- Unexplained confusion for >4 hours.
- Deterioration in GCS following admission.
- Progressive focal neurological signs.
- Seizures.
- Suspected or confirmed CSF leak.

Should be discussed with the neurosurgical SpR 24/7. If immediate advice is required contact the neurosurgical SpR (bleep 1009) via Derriford switchboard (01752 202082). Otherwise refer via Refer-a-patient online.

6.5.5. The neurosurgical team should reach a decision and communicate this within 30 minutes. If this does not occur, escalate to the Consultant neurosurgeon on call via Derriford switchboard (01752 202082), and cascade to the MTC TTL if required.

6.5.6. Patients who are not suitable for transfer, e.g., due to un-survivable injuries, need not be discussed with the Neurosurgical team unless the treating clinician requires expert opinion.

6.6. Prophylactic Anticonvulsants

6.6.1. Anticonvulsant medication may be indicated in the presence of acute traumatic intracranial haemorrhage and/or acute traumatic brain injury as prophylaxis against seizures and secondary brain injury.

6.6.2. Cases should be discussed with neurosurgery as routine. They will advise as to the appropriate loading, dosing, and duration of therapy. Typically, levetiracetam (Keppra ®) 500mg bd for 7 days is used. However, this should be a neurosurgical decision.

6.6.3. If there has been a witnessed seizure post head injury, a short course of anticonvulsant administration is standard management. An initial dose of levetiracetam (Keppra ®) 0.5-1g is indicated during the acute phase. Advice should be sought from neurosurgery initially and subsequently neurology, as to the optimal ongoing dose/course length.

6.7. Anticoagulation and Venous Thromboembolism (VTE) Prophylaxis

6.7.1. Anticoagulants should be stopped in line with guidance for management of intracerebral haemorrhage ('Bleeding Related to Antithrombotic Medications Clinical Guideline, V1.0, March 2023').

6.7.2. Prothrombin complex concentrate (e.g., Beriplex ®*)* should be considered for emergency reversal of Warfarin anticoagulation in patients with head injury and suspected intracerebral haemorrhage. Reversal of DOACs or therapeutic dose heparins should follow the Trust anticoagulation guideline.

6.7.3. Do not prescribe chemical VTE prophylaxis for patients immediately following head injury. Prescribe mechanical methods if there are no contraindications. The VTE prophylaxis should be reviewed daily, and chemical prophylaxis only restarted following senior clinician decision +/- discussion with neurosurgical centre.

6.8. Transfer of Patients to Derriford Hospital

6.8.1. The Safe Transfer of Patients policy should be adhered to: Safe Transfer of Patients Between Care Areas or Hospitals Policy

6.8.2. National guidance regarding safe transfer of brain injured patients should be followed: http://anaesthetists.org

6.8.3. The urgency of escalation transfers to specialist hospitals is nationally defined.

6.8.3.1. Patient transfers are defined as time-critical when they are going for immediate (within 60 minutes) intervention on arrival, to save life, limb, or sight e.g., evacuation of extradural haematoma, insertion of intraventricular drain.

6.8.3.2. Patients are defined as time-urgent when they require specialist intervention, but not immediately upon arrival, or other specialist care or observation e.g., neurocritical care including insertion of non-therapeutic intracranial pressure monitoring devices.

6.8.4. Transfer of patients with moderate and severe traumatic brain injury requires an airway trained escort. All requests for transfer should be referred to Retrieve via 0300 030 2222, 24 hours a day. If Retrieve are offline or unable to provide a medical escort, the Trauma and Transfer Consultant (TTC) is the default medical escort and, if not already part of the trauma response, should be contacted. If unavailable, support from critical care or anaesthetics will be required to safely undertake the transfer. Where patients are deemed highly likely to require transfer at the point of arrival, during the hours of Retrieve's clinical team (0900-2100), a pre-emptive alert to the team, even prior to CT or MTC acceptance, is encouraged; the team can be stood down if the transfer is subsequently not required.

6.8.5. A decision regarding airway protection prior to transfer must be made by a senior airway trained clinician e.g. Anaesthetics/ICU/TTC. The following is a list of strong indications for intubation:

- GCS ≤8 or deteriorating (fall of ≥2 points or fall of ≥1 point on motor score.
- Loss of protective airway reflexes.
- Bleeding into mouth or airway e.g., from skull base fracture.
- Hypoxia (PaO_2 <13kPa).
- Hypercarbia ($PaCO_2$ >6kPa).
- Spontaneous hyperventilation ($PaCO_2$ <4kPa).
- Unstable facial fractures, including bilateral fractured mandible.
- Seizures.

6.8.6. Ketamine is suggested as an induction agent of choice for trauma patients, alongside an opioid to obtund sympathetic response to intubation. Intubation should not be undertaken using neuromuscular blockade alone.

6.8.7. A target-controlled infusion (TCI) should be considered for induction and or maintenance as a means of ensuring adequate depth of anaesthesia.

6.8.8. A vasoconstrictor should be immediately available to manage hypotension associated with induction. Co-administration of these agents is encouraged where cardiovascular compromise as a direct consequence of induction of anaesthesia is a particular concern.

6.8.9. Attachment of neuromuscular monitoring prior to induction should be considered (as per national guidance) to ensure full neuromuscular block prior to intubation.

6.8.10. Arterial line insertion prior to intubation is optimal if time allows, however, should not unduly delay airway protection. In the absence of arterial line, NIBP on 1 minute cycle is advised.

6.8.11. Patients requiring time-critical or urgent transfer from a ward (except the Critical Care Unit) should be taken to emergency theatres, Critical Care or ED with the advance agreement of the destination unit. These areas are set up to facilitate time critical transfers.

6.8.12. During transfer the same standard of monitoring received in the referring unit should be maintained.

6.8.13. During transfer, neuroprotective measures (and C-spine protection if required) should be maintained, aiming to maintain oxygenation, adequate blood pressure and minimise rises in ICP, specifically including:

- Head up bed tilt 20-30˚, ET tube secured with tape.
- PaO2 >13kPa.
- PaCO2 4.5-5.0 kPa (if concern about impending herniation reduce to 4.0-4.5kPa). The ETCO2 should be noted at the point of PaCO2 measurement so that the arterial-alveolar gradient is known for that patient to allow continuous CO2 management.
- MAP to optimise cerebral perfusion pressure: 90mmHg * with pressors/fluids as indicated.
- Systolic BP: 110-150mmHg *
- Blood glucose 6-10mmol/L.
- Temperature 36-37℃ with core temperature monitoring.

6.9. Admission of Patients for Neurological Observation

6.9.1. Admit all patients with one or more of the following:

- Awaiting CT e.g., not able to complete within recommended timeframe.
- New clinically significant abnormality on CT.
- GCS <15 or conscious level not normal for patient, regardless of imaging result.
- Clinical concerns e.g., vomiting, severe pain, suspected NAI, CSF leak, meningism, other injuries, intoxication.

6.9.2. On admission patients should ideally be cared for by teams specifically trained in the care of TBI. Nursing staff must be competent in monitoring neurological observations as a minimum as any patient may fall and sustain a head injury during their inpatient stay. It is important that all acute areas maintain nursing competency in neurological observations.

6.9.3. A patient with a minor head injury may have another more significant injury or clinical problem necessitating admission to an alternative area. In this situation neurological observations as per protocol must still be carried out.

6.9.4. Where there is confirmation of TBI on CT the Major Trauma Service will aim to review the patient within 72 hours of admission, regardless of destination ward.

6.9.5. Patients admitted with TBI will be highlighted to the major trauma team on NerveCentre and will be reviewed during the ward round on weekdays. For advice, the major trauma nursing team can be contacted through switchboard in hours and out of hours there is a consultant on call also available via switch for advice.

6.9.6. For any patient who has had referral/discussion with the neurosurgical team, the referral key should be recorded on NerveCentre and in the patient notes so that all clinicians can access this information when needed.

6.9.7. In-patients with TBI and clinical concerns regarding ongoing neurocognitive deficit should be screened using a validated tool by appropriately trained ward staff or the Major Trauma co-ordination service. If screening highlights significant abnormalities, a formal referral should be addressed to the neuropsychology service. Post-traumatic amnesia is a particularly important symptom to identify. Such patients should be considered a priority for a bed on Tintagel. The Major Trauma service should consider referring more severe cases of neurocognitive deficit to Rehabilitation Medicine via BadgerNet for input.

6.10. Critical Care

6.10.1. Multiple serious injuries (e.g., significant head injury and long bone fracture or chest injury) may require critical care admission and should be discussed with the ICU SpR on-call with this in mind. The physiological instability of these patients places them at high risk of deterioration. For such more complex patients, close communication should occur between the RCHT team and the duty Derriford TTL or MTCC.

6.10.2. Patients with GCS less than 13, particularly with a motor score less than 6 (i.e., unable to obey commands) should be considered for admission to the Critical Care Unit. These patients require frequent observation and are at high risk of missed deterioration.

6.10.3. Patients with traumatic brain injury who have been accepted for treatment or observation in a neuroscience centre, but where transfer has been prevented for any reason, must be referred for admission to the Critical Care Unit.

6.11. Multiple Injuries

6.11.1. Patients with multiple serious injuries are best cared for initially in the Critical Care Unit, followed by discharge to the team trained to deal with their most severe or complex injury.

6.11.2. Patients with significant post-head injury symptoms will require inpatient neurotherapy assessment - an inpatient referral should be completed on MAXIMS outlining the initial cognitive impairment.

6.11.3. There is currently no outreaching neuro-physiotherapy service, therefore patients should be referred to their ward physiotherapist and occupational therapists with onward referral to specialist neurotherapy for advice/input as deemed necessary.

6.12. Frailty Pathways

6.12.1. Head injury patients aged between 65-80 years of age with a Rockwood frailty score of ≥5 or concerns about a non-accidental fall (e.g. recurrent falls, syncope, dementia, complex polypharmacy, postural symptoms, Parkinson's) requiring admission should be admitted to the Frailty Unit (SDEC) or Acute Medical Unit under the Care of the Elderly team.

Head injury patients ≥80yrs without new neurological deficit requiring inpatient admission should be admitted to the Frailty Unit (SDEC) or Acute Medical Unit under the Care of the Elderly team. Those with new neurological deficit should be admitted to Tintagel under the shared care of Neurology and Care of the Elderly.

6.12.2. Consider referral to frailty nurse specialists and ACE team in the Emergency Department.

6.12.3. A Comprehensive Geriatric Assessment should be considered for all patients on a frailty pathway. Consideration should be given to falls prevention, including e.g., minimum SBP target, medication review, bone health.

6.12.4. Patients under eldercare should be prioritised for Tintagel Ward when feasible.

6.12.5. Patients with significant post-head injury symptoms will require inpatient neurotherapy assessment. An inpatient referral should be completed on MAXIMS outlining the initial cognitive impairment.

6.13. Medical or Surgical Specialty

6.13.1. Younger patients with a minor head injury who require specialist admission for another more significant injury or illness should follow the standard admission process to that specialty. Routine neurological observations may still be required.

6.13.2. Head injured patients aged <80yrs without other more significant injuries, nor new neurological deficits, nor any frailty/predisposition to falls (see 6.12.1) who require admission should be admitted to the Acute Medical Unit. Those with new neurological deficit should be admitted to Tintagel under the shared care of Neurology and Care of the Elderly.

6.13.3. Patients with significant post-head injury symptoms will require inpatient neurotherapy assessment - an inpatient referral should be completed on MAXIMS outlining the initial cognitive impairment.

6.13.4. There is currently no outreaching neuro-physiotherapy service, therefore patients should be referred to their ward physiotherapist and occupational therapists with onward referral to specialist neurotherapy for advice/input as deemed necessary.

6.14. Neurology Referral and Neurology Care Beyond the First 24 Hours

6.14.1. Patients requiring neurological observation or rehabilitation beyond 24 hours, should be referred to neurology. There is always a neurology consultant contactable via switchboard during working hours Monday-Friday, this should be the first port of call for urgent questions. For formal review and ongoing management referrals should be done via MAXIMS.

6.14.2. The need for neurology review should be identified as early as possible, ideally within 24 hours of admission by the post-take ward round +/- major trauma ward round.

6.14.3. Any patient remaining as an inpatient with ongoing neurotherapy needs beyond 72 hours of admission should be prioritised for a Tintagel bed where appropriate consultant medical and support services are available. If a neurology bed is not available on Tintagel ward, the site coordinator should be contacted to expedite this.

6.14.4. Patients on Tintagel or those awaiting admission should be referred for review by the Rehabilitation Consultant who has weekly in-reach to Tintagel ward.

6.14.5. Patients admitted to Tintagel from Friday evening to Sunday morning will have routine medical care under the Eldercare team. Acute medicine or Eldercare teams will provide senior assessments on Frailty Unit or AMU before the patient goes to Tintagel ward.

6.14.6. Nursing staff should refer to the ward occupational and physiotherapists for initial screening with a view to referring for specialist neuro-occupational and physiotherapy therapy input where required.

6.15. Observation

6.15.1. Neurological observations will be performed as per NICE guidance CG232: As a minimum this includes GCS, pupil size and reactivity, limb movements, respiratory rate, heart rate, blood pressure, temperature, and blood oxygen saturation.

6.15.2. The appropriate frequency for neurological observation is:

- Half hourly until GCS is 15, then,
- Half hourly for 2 hours.
- Hourly for 4 hours.
- Two hourly thereafter.

6.15.3. Nursing and medical staff caring for patients with head injury should be competent performing the above observations. This requires dedicated training which should be available to all staff to allow them to acquire and maintain these skills.

6.15.4. If a deterioration in neuro-observations is noted at any time, a medical review should be sought, and the frequency of observations will revert to half-hourly and follow the same pattern.

6.15.5. Any of the following prompts an urgent review by a senior doctor:

- Development of agitation or abnormal behaviour.
- A sustained (at least 30mins) drop in GCS by 1 or more points.
- A drop of 2 or more points on GCS motor score, or a total of 3 or more points across verbal and eye-opening scores.
- Development of severe headache or persistent vomiting.
- New/evolving neurological symptoms/signs e.g. pupil inequality, asymmetrical limb, or facial movement.

6.15.6. Best practice is for nursing staff to gain a second nursing opinion to confirm a drop in GCS prior to calling the doctor, however, this must never be allowed to delay the medical review.

6.15.7. A patient with significant deterioration will be referred for an urgent repeat CT head scan. The scan should be performed within 1 hour of the deterioration being recorded with an urgent report.

6.15.8. It is recognised that eventually 2 hourly observations are no longer appropriate and 4-hourly observations are resumed as with all acute inpatients. NICE CG232 does not state when this point is reached. Individual clinical decisions should be made but it would seem reasonable that the fully alert and orientated, asymptomatic patient over 24 hours into a period of observation should move to 4 hourly observations.

6.15.9. In head injured patients who subsequently develop hypotension (N.B. also consider undiagnosed traumatic injuries) and/or hyponatraemia consideration should be given to the risk of early hypopituitarism. Senior clinician review and measurement of serum cortisol levels should be performed.

6.16. Discharge

6.16.1. Patients can be discharged when:

- They are GCS15, or their usual conscious level.

  AND

- They have responsible adult supervision for 24hours post-injury

  OR

- They have a negligible risk of further complications (e.g. normal head CT with no coagulopathy),

  AND

- They have no significant post-head injury symptoms,

  OR

- They have received neuro-rehabilitation review and are being discharged with appropriate support.

6.16.2. Post-head injury symptoms are any of:

- Headache.
- Nausea.
- Confusion/delirium/disorientation/memory loss/repetitive speech.
- Blurred vision/difficulty in focussing.
- Vertigo or non-specific dizziness.
- Specific neurological deficits e.g., weakness, sensory change, ataxia, diplopia, dysphasia.

6.16.3. All patients should be given the leaflet: ‘Discharge Advice Following a Head Injury’ (Appendix 10 prior to discharge and signposted to Headway’s online resources / helpline. For more complex patients, especially those with ongoing neurological impairments, consider providing a copy of the ‘Neurology Care Advice Service’ leaflet (Appendix 11) on discharge.

6.16.4. For patients with sporting related concussion injuries, the patient information sheet: ‘Return to sport after concussion’ (Appendix 12) should also be given prior to discharge.

6.16.5. DVLA advice appropriate to specific type of head injury should be given to all patients on discharge on discharge.

6.16.6. Patients who have received a head CT scan (with no new findings of concern or requiring specialist follow up) or have had inpatient admission for post-head injury symptoms should be advised to discuss their recovery progress and whether there is any further need for neuro-rehabilitation input with their GP in the week following discharge.

6.16.7. Patients with continuing neurocognitive and/or physical needs with ongoing rehabilitation should receive a rehabilitation prescription on discharge. This sets out their functional status and expectations for support and ongoing rehabilitation in clear language and may include referral to community rehabilitation if required.

7. Dissemination and Implementation

These guidelines will be published on the Document Library and also be available via a hyperlink in the ED handbook.

8. Monitoring Compliance and Effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	• Compliance with NICE CG232 imaging guidance. • Compliance with NICE CG232 neurological observation standards. • The wards on which adult patients with head injury are cared for. • Length of stay for adult patients with head injury. • Morbidity and mortality from adult head injury including DATIX incidents.
Lead	ED Audit Lead. Radiology Audit Lead. Major Trauma Lead.
Tool	Periodic audits of these elements.
Frequency	Each element should be audited every 1-3 years.
Reporting arrangements	ED and Major Trauma governance meetings, Major Trauma Review Group, Peninsula Trauma Network.
Acting on recommendations and Lead(s)	As above.

Information Category	Detail of process and methodology for monitoring compliance
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned following audit. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders.

9. Updating and Review

This guideline will be reviewed and updated as appropriate after audit, changes in national guidance no less than every three years.

10. Equality and Diversity

10.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the Equality Diversity And Inclusion Policy or the Equality and Diversity website.

10.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Adult Head Injury Pathway V4.0
This document replaces (exact title of previous version):	Adult Head Injury Pathway V3.0
Date Issued / Approved:	27 July 2023
Date Valid From:	November 2023
Date Valid To:	November 2026
Author / Owner:	Dr Rebecca Sands, Anaesthetics and Major Trauma Consultant
Contact details:	rcht.majortrauma@nhs.net
Brief summary of contents:	Pathway for care of adults following head injury
Suggested Keywords:	Head injury, traumatic brain injury, trauma, major trauma, neurology, neurological, neurosurgery, neurosurgical, rehabilitation.
Target Audience:	**RCHT:** Yes **CFT:** No **CIOS ICB:** No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Multi-disciplinary group from ED, Major Trauma, Surgery, Acute Medicine, Neurology, Stroke, Rehabilitation, Critical Care, Care of the Elderly, (via Major Trauma Review Group).
Manager confirming approval processes:	Nigel D'Arcy, Interim General Manager
Name of Governance Lead confirming consultation and ratification:	Paul Evangelista

Information Category	Detailed Information
Links to key external standards:	NICE CG232 https://www.nice.org.uk/guidance/ng232 AAGBI Guidelines for the Safe Transfer of the Brain Injured Patient https://anaesthetists.org/Home/Resources-publications/Guidelines/Safe-transfer-of-the-brain-injured-patient-trauma-and-stroke-2019
Related Documents:	RCHT Safe Transfer of Patients Policy https://doclibrary-rcht.cornwall.nhs.uk/GET/d10330878
Training Need Identified:	Yes. Ongoing nursing competencies in neurological observations for ward patients.
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Major Trauma

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
21 Dec 14	Pre-pub	Added “limitations”.	Mark Jadav, ED Consultant
6 Jan 16	V1.0	Changed neurology ward from Phoenix to Tintagel.	Mark Jadav, ED Consultant
12 Dec 16	V2.0	Added “care needs”.	Mark Jadav, ED Consultant
10 Jan 20	V3.0	Added Major Trauma Coordinator referral.	Mark Jadav, ED Consultant
27 July 23	V4.0	Full update in accordance with NICE guideline (NG232), published 18 May 2023.	Rebecca Sands, Anaesthetics/ Major Trauma Consultant

All or part of this document can be released under the Freedom of Information Act 2000

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust The Policy on Policies (Development and Management of Knowledge Procedural and Web Documents Policy). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Adult Head Injury Pathway V4.0
Department and Service Area:	Major Trauma, Urgent, Emergency and Eldercare Care Group
Is this a new or existing document?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Dr Rebecca Sands, Anaesthetics and Major Trauma Consultant
Contact details:	rcht.majortrauma@nhs.net

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	To ensure that patients within Cornwall and Isles of Scilly sustaining a head injury receive the correct care in the correct timeframe. Staff caring for adult patients with head injury.
2. Policy Objectives	Patients sustaining head injury in the community will be taken to the most appropriate hospital for their condition. Excellent pre-hospital to hospital communication will ensure that patients requiring time critical assessment will receive it. All patients will be assessed and treated as per NICE Head Injury Guidelines CG176 (http://guidance.nice.org.uk/CG165) . However, patients enter the Royal Cornwall Hospital, whether via the ED or via direct attendance to an admitting ward, or sustaining a head injury whilst within the hospital,

Information Category	Detailed Information
3. Policy Intended Outcomes	Compliance with NICE CG232 imaging guidance. Compliance with NICE CG232 neurological observation standards. Adult patients with head injury are cared for on appropriate wards. Reduced length of stay for adult patients with head injury. Reduced morbidity and mortality from adult head injury including DATIX incidents.
4. How will you measure each outcome?	Audit.
5. Who is intended to benefit from the policy?	Adult patients with head injury.
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Yes • Patients/ visitors: No • Local groups/ system partners: Yes • External organisations: No • Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:** Multi-disciplinary group from ED, Major Trauma, Surgery, Acute Medicine, Neurology, Stroke, Rehabilitation, Critical Care, Care of the Elderly.
6c. What was the outcome of the consultation?	This updated pathway.
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:** No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	
Sex (male or female)	No	

Protected Characteristic	(Yes or No)	Rationale
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	
Religion or belief	No	
Marriage and civil partnership	No	
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

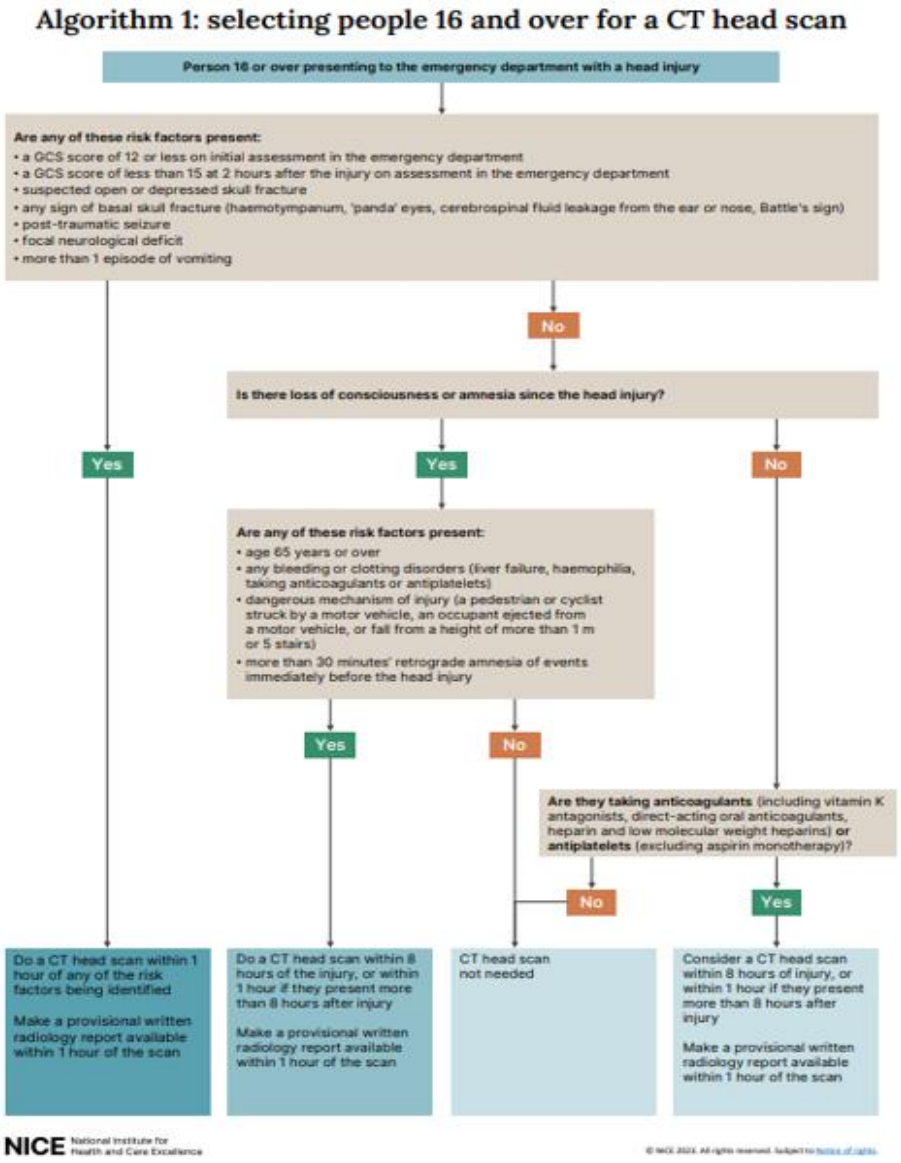
A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

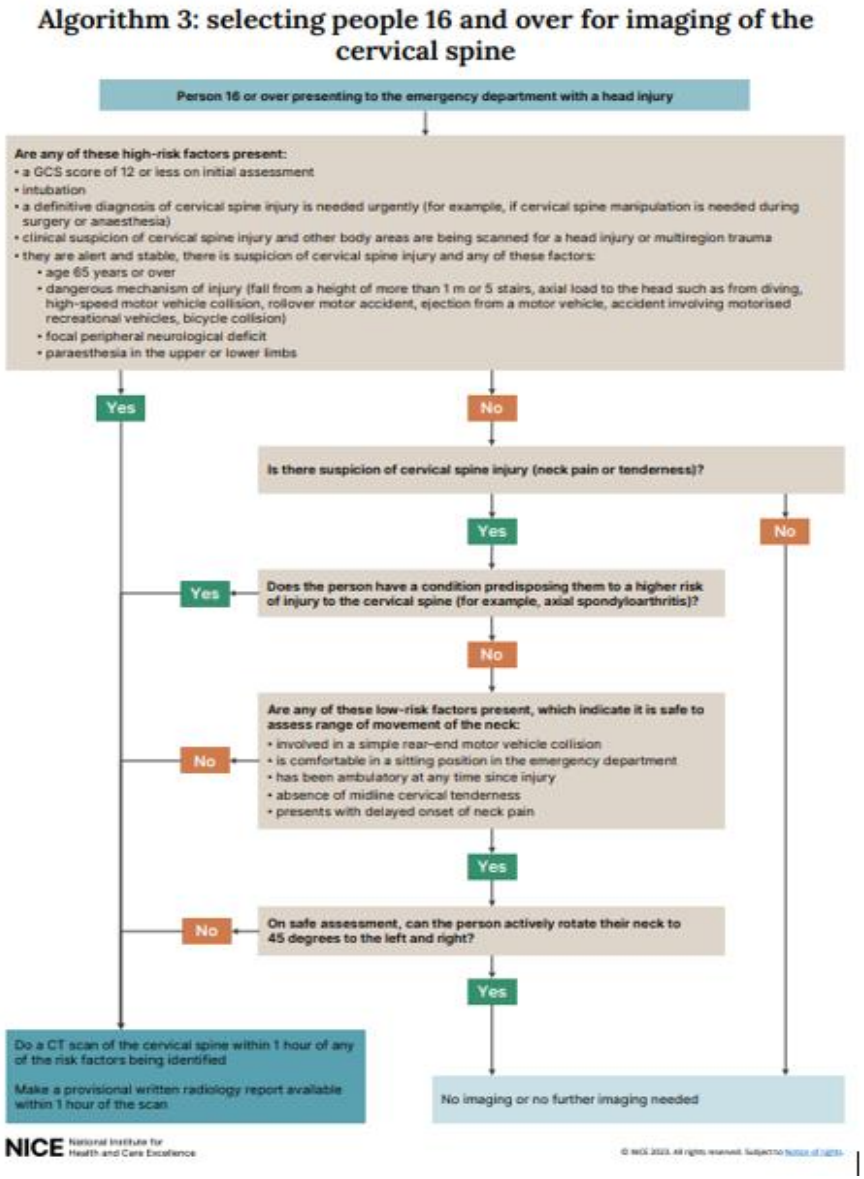
I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Dr Rebecca Sands, Anaesthetics and Major Trauma Consultant.

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis

Appendix 3. [NICE Guideline to Determine CT Head and/or Cervical Spine Imaging]





Appendix 4. Adult Head Injury Decision Tool- CHA3454

This form is available via Forms To Print.

File in section 1 / Scan in ED record

NHS number: _____
Name: _____
Address: _____
_____
Date of birth: _____
CR number: _____

Affix patient label

NHS
Royal Cornwall Hospitals
NHS Trust

Adult Head Injury Pro Forma
16yrs and over

Date of admission:	Time of admission:
Location of admission:	Admitting consultant:

Clinical details - Continue overleaf or on Cas Card

GCS on initial assessment:

GCS:	15	Complete Obs chart with Neuro obs every 30mins for 2hrs, then hourly for 4hrs, then 2hourly
	9 to 14	Complete Obs chart with Neuro obs every 30mins until GCS 15
	3 to 8	Seek senior advice

CT Imaging - Are any of the following present?	Yes	No	Notes
GCS < 12 when first assessed in ED			
GCS < 15 when assessed in ED 2 hours after the injury			
Suspicion of open or depressed skull fracture			
Suspicion of basal skull fracture (CSF leak, Battles sign, Panda eyes)			
Seizure post head injury			
Focal neurological deficit			
> 1 episode of vomiting			
Any amnesia or LOC with:-			
Age ≥65			
Any current clotting disorder, warfarin, DOAC or antiplatelet agent (except aspirin monotherapy)			
Dangerous mechanism of injury (high speed RTC, fall > 1m or 5 stairs)			
Amnesia of events > 30 minutes before impact			

Yes to any red	**No red + yes to any amber**	**All Green**
Immediate senior review and request of CT scan. CT required within 1 hour of request	Immediate request of CT scan. CT may be performed within 8 hours of injury	No imaging required now

One + all | we care

CHA3454 V2 Printed 10/2023 **Review due 2026**

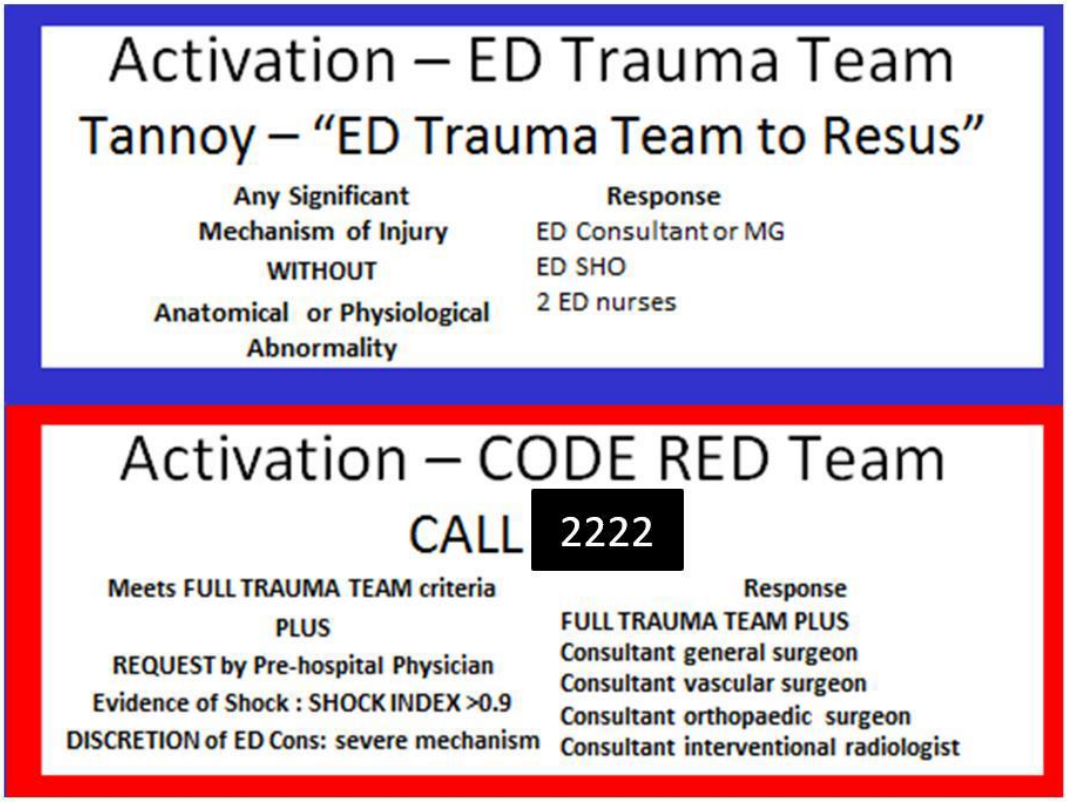
affix patient label

Neurosurgical referral - Are any of the following present?	Yes	No	Notes
Surgically significant abnormality on CT	☐	☐	
Persisting coma (GCS < 8 after resuscitation)	☐	☐	
Unexplained confusion persisting for > 4 hours	☐	☐	
Deterioration in GCS after admission (pay greater attention to motor response deterioration)	☐	☐	
Progressive focal neurological signs	☐	☐	
Seizure without full recovery	☐	☐	
Definite or suspected penetrating injury	☐	☐	
CSF leak	☐	☐	
Yes to any Refer to neurosurgeons	**No to all** Neurosurgical review not currently required		
Automatic Acceptance - GCS<9; Penetrating injury; <70yo and haematoma causing midline shift Refer to Traumatic Brain Injury Flowchart located in RCH ED resus			

Admission - Are any of the following present?	Yes	No	Notes
New clinically significant abnormality on CT	☐	☐	
GCS < 15 after imaging, regardless of result	☐	☐	
Fulfils criteria for CT but imaging cannot be done within appropriate time period	☐	☐	
Continuing worrying signs (eg. persistent vomiting, headache)	☐	☐	
Other source of concern (e.g. drug or alcohol intoxication, other injuries, suspected NAI, meningism)	☐	☐	
Yes to any Admit under appropriate team	**All green** Can safely discharge. Give head injury advice sheet		

Clinical details - Continuation			
Care Plan activated by	Sign Print Designation	Care Plan shared with patient	Sign Print Designation

Appendix 5. Trauma Team Activation Criteria



Appendix 6. Pragmatic Head Injury Guidelines for CATUs, Community Hospitals and Care Homes

See full guideline in Pragmatic Head Injury Management for CATU Community Hospitals and Care Homes Clinical Guideline (cornwall.nhs.uk)

Falls and head Injury in Community Hospital and Care Homes in Cornwall and Isles of Scilly

In the community hospitals and care homes, we predominantly look after a frail population of patients. These patients are at risk of frequent falls and recurrent head injuries as inpatients and residents.

NICE guidelines are focused on CT head scans to identify intracranial events so that early neurosurgical intervention can take place.

We know that nationally high numbers of CT heads are done in the emergency department on the frail elderly. For our frailer patients, neurosurgical intervention may not be appropriate. A CT head may not also alter the clinical management plan or patient outcome. Transfer to the Emergency Department can be detrimental to the patient by worsening delirium and deconditioning, also adds workload to the ambulance/paramedics and ED teams plus indirect consequences of overcrowding on other patients and the healthcare system.

This guideline aims to provide decision-making support when considering transferring a frailer patient to the Emergency Department for CT head scanning from the local community hospital wards and from care homes in Cornwall and Isles of Scilly.

Tips for all patients who have fallen:

1. Assess them in an A-E manner – looking for any sign of injury on exposure. Remembering to check a blood sugar level.
2. Establish events around fall – before, the falls and any injury including head injury.
3. Consider the cause of the fall – this may be multifactorial.
4. Aim to address any risk factors for further falls.
5. Communicate their fall to the MDT – all patients who have fallen need a MDT assessment.
6. Document the fall.
7. For patients with a head injury see the guidance below.

Remember: prevention is the key in patients at risk of falls.

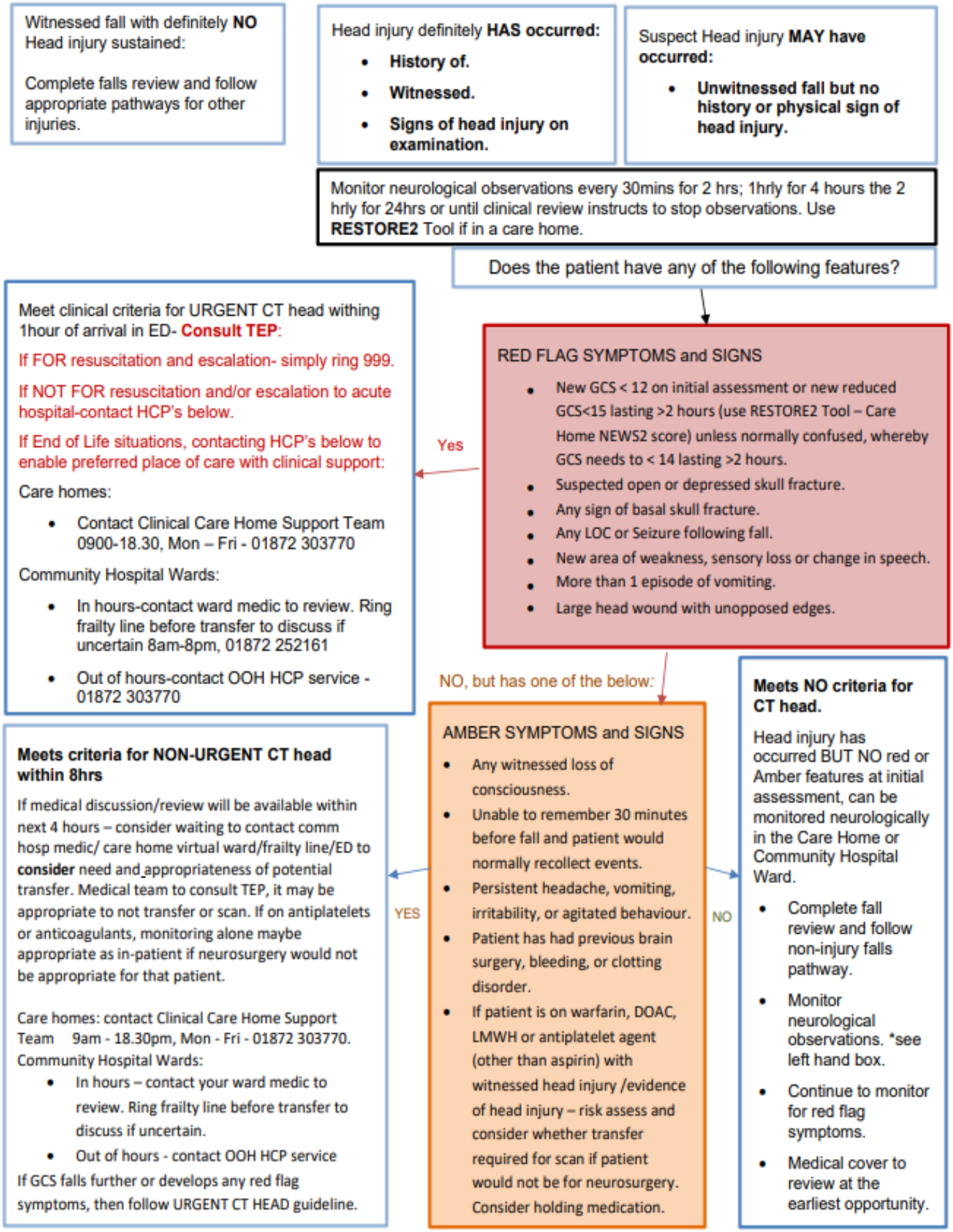
All patients over 65 or any patient judged to be at risk of inpatient falls – a multifactorial falls risk assessment should be done, and factors addressed.

Useful guidance:

1 Recommendations | Falls in older people: assessing risk and prevention | Guidance | NICE

https://www.nice.org.uk/guidance/ng232

Summary


Witnessed fall with definitely NO Head injury sustained:
Complete falls review and follow appropriate pathways for other injuries.
Head injury definitely HAS occurred:
History of.
Witnessed.
Signs of head injury on examination.
Suspect Head injury MAY have occurred:
Unwitnessed fall but no history or physical sign of head injury.
Monitor neurological observations every 30mins for 2 hrs; 1hrly for 4 hours the 2 hrly for 24hrs or until clinical review instructs to stop observations. Use RESTORE2 Tool if in a care home.
Does the patient have any of the following features?
RED FLAG SYMPTOMS and SIGNS
New GCS < 12 on initial assessment or new reduced GCS<15 lasting >2 hours (use RESTORE2 Tool – Care Home NEWS2 score) unless normally confused, whereby GCS needs to < 14 lasting >2 hours.
Suspected open or depressed skull fracture.
Any sign of basal skull fracture.
Any LOC or Seizure following fall.
New area of weakness, sensory loss or change in speech.
More than 1 episode of vomiting.
Large head wound with unopposed edges.
Yes
Meet clinical criteria for URGENT CT head withing 1hour of arrival in ED- Consult TEP:
If FOR resuscitation and escalation- simply ring 999.
If NOT FOR resuscitation and/or escalation to acute hospital-contact HCP's below.
If End of Life situations, contacting HCP's below to enable preferred place of care with clinical support:
Care homes:
Contact Clinical Care Home Support Team 0900-18.30, Mon – Fri - 01872 303770
Community Hospital Wards:
In hours-contact ward medic to review. Ring frailty line before transfer to discuss if uncertain 8am-8pm, 01872 252161
Out of hours-contact OOH HCP service - 01872 303770
NO, but has one of the below:
AMBER SYMPTOMS and SIGNS
Any witnessed loss of consciousness.
Unable to remember 30 minutes before fall and patient would normally recollect events.
Persistent headache, vomiting, irritability, or agitated behaviour.
Patient has had previous brain surgery, bleeding, or clotting disorder.
If patient is on warfarin, DOAC, LMWH or antiplatelet agent (other than aspirin) with witnessed head injury /evidence of head injury – risk assess and consider whether transfer required for scan if patient would not be for neurosurgery. Consider holding medication.
YES
Meets criteria for NON-URGENT CT head within 8hrs
If medical discussion/review will be available within next 4 hours – consider waiting to contact comm hosp medic/ care home virtual ward/frailty line/ED to consider need and appropriateness of potential transfer. Medical team to consult TEP, it may be appropriate to not transfer or scan. If on antiplatelets or anticoagulants, monitoring alone maybe appropriate as in-patient if neurosurgery would not be appropriate for that patient.
Care homes: contact Clinical Care Home Support Team 9am - 18.30pm, Mon - Fri - 01872 303770.
Community Hospital Wards:
In hours – contact your ward medic to review. Ring frailty line before transfer to discuss if uncertain.
Out of hours - contact OOH HCP service
If GCS falls further or develops any red flag symptoms, then follow URGENT CT HEAD guideline.
NO
Meets NO criteria for CT head.
Head injury has occurred BUT NO red or Amber features at initial assessment, can be monitored neurologically in the Care Home or Community Hospital Ward.
Complete fall review and follow non-injury falls pathway.
Monitor neurological observations. *see left hand box.
Continue to monitor for red flag symptoms.
Medical cover to review at the earliest opportunity.

Appendix 7. Doctors Inpatient CT Head Injury Review Form -- CHA4648.

This form is available on Oceano.

Place patient sticker **within** this box

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NHS Trust

Doctors Inpatient CT Head Injury Review Form

Following an in-patient fall with head injury - does the patient need a Head CT?
No need to complete if fall witnessed and definitely no head injury.

Many in-patient falls incur definite or possible head injuries. Not all patients require Head CT urgently.
Please fill in as appropriate below to guide actions and urgency of scan.

Urgent Head CT Criteria	Yes	No	Guidance Notes
GCS <13 at any point since injury			
GCS <15 at two hours after injury			Exception if patient is normally confused (GCS 14/15) and shows no sign of change in baseline behaviour
Suspected open or depressed skull fracture			
Any sign of basal skull fracture			- Raccoon eyes - Haemotympanum - Battle sign - Halo sign
Post-traumatic seizure			
Focal neurological deficit			
More than one episode of vomiting since the head injury			
YES TO ANY OF ABOVE ⇨ CT HEAD WITHIN 1 HOUR: Requested ☐			
Non-Urgent Head CT Criteria	**Yes**	**No**	**Guidance Notes**
On therapeutic anticoagulation			- Unfractionated heparin - Treatment dose LMWH - Warfarin - DOACs
Prophylactic LMWH does NOT qualify as therapeutic anticoagulation, therefore does NOT require CTH scan			
Loss of consciousness or amnesia since fall + any of:			
- Age >65yo			
-Hx of bleeding/clotting disorder			
- Dangerous mechanism of injury			Fall from height of >1m or >5 stairs
- Retrograde amnesia >30 mins of events immediately before head injury			
YES TO ANY OF ABOVE ⇨ CT HEAD WITHIN 8 HOUR: Requested ☐			
No CT Head Criteria Met			
NO TO ALL OF ABOVE ⇨ NEUROLOGICAL OBSERVATIONS ONLY Every 30 min for 2hours; 1 hourly for 4 hours then 2 hourly for 24 hours overall **IF NO SCAN IS REQUIRED AS PER NICE GUIDELINES, CLINICALLY RESPONSIBLE TEAM TO REVIEW NEXT DAY. DAY TEAM TO REVIEW IF CT HEAD SCAN IS CLINICALLY APPROPRIATE.**			

Signature: **Print:** **Designation:** **Date:**

CHA4648 V1 07/2022 **Review due:** 2025

Appendix 8. Peninsula Trauma Network Guidelines

The latest Peninsula Trauma Network (PTN) guidance for Head injuries can be found at the following URL: https://www.peninsulatraumanetwork.nhs.uk/network-guidelines. Specifically the “Trauma Patient Acceptance and Discussion Guide”, “TBI guidelines” and “Pathway 4 – Isolated Brain injury and does not require intubation and ventilation” are the two most relevant guidelines relevant to this RCHT guidance.

Appendix 9. CHA4796: Major Trauma Neurological MDT Smart Form

Patient Name:	
DOB:	
CR:	
NHS:	

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NHS Trust

Major Trauma Neurological / Spinal Patient Virtual MDT Crib Sheet

Diagnosis:		
Social background:		
Functional Status:		
Occupation:		
Injury Summary and Major Trauma plan:		
UHP Spinal & Neurosurgical plans (Latest)		
Physiotherapy & Occupational Therapy	Current progress: Short term goals: Longterm goals: Barriers to therapy: Collar care: Braces: General equipment needs:	
Rehabilitation Medicine Consultant	If on tintagel already – accepted for review? If not on Tintagel? Move	
Clinical Neuro psychology	Accepted for review if on Tintagel?	
Diet & Nutritional Status	Any concerns re: Intake Referral required: If yes, who will action referral:	
Positional and Pressure areas	On appropriate mattress: Positioning status: Any pressure area concern: Datix report required: If yes, who will action:	
Elimination needs	Bladder status Bowel Referral required: If yes who will action:	
Current ward	Is the patient on the optimal ward? If no, who will action	
Discharge planning / Repatriation	Current discharge plan:	
Uploaded to MAXIMS:		

Print Name:		**Designation:**	**Date:**
Signature:			**Time:**

CHA4796 V1 05/2023 **Review due:** 2026

Appendix 10. Discharge Advice Following a Head Injury

(Patients aged 18 and over)

The team looking after you think that it is safe for you to leave hospital to continue your recovery following your head injury. It is unlikely you will experience any further problems however,

DO NOT stay on your own for the **first 24 hours** following discharge and ensure there is a phone nearby just in case you need medical assistance.

What other symptoms should I watch out for?

- Headaches that don't resolve or get progressively worse.
- Drowsiness (feeling sleepy) or difficulty waking up.
- Confusion, restlessness, or agitation.
- Problems with eyesight: Double vision or blurriness.
- Vomiting (being sick).
- Worsening dizziness (feeling very unsteady).
- Muscle weakness in your arms or legs.
- Difficulty speaking or understanding.
- Seizures or fits (also known as convulsions).
- Hearing problems: bleeding from the ear or new onset hearing loss.
- Any sign of a clear, watery discharge from ears or nose.

If you experience any of the 'other symptoms' above, please contact your GP, or ring 111. Ring 999 in an emergency.

Common symptoms that should resolve within two weeks:

- Mild headache.
- Lack of appetite.
- Feeling sick (not vomiting).
- Mild dizziness.
- Problems with concentration or memory.
- Irritability.
- Tiredness or problems sleeping (insomnia).

If you are concerned about any of these symptoms or if they do not go away after two weeks, we recommend you contact your GP for advice.

What you can do to help recovery:

- It's normal to feel dizzy post head injury, you can ease this by standing slowly and avoiding bending down too far.
- You might experience headaches, but these should gradually get less strong and less frequent. Before discharge your doctor will advise on what painkillers you can take.
- Resting is important, you may find that you tire more easily, and that you can do less activity than before. This is normal. Try to include regular rest periods in your daily routine.
- Drink plenty of fluids.

Things to avoid:

- **Avoid** stressful situations and making big decisions.
- **Avoid** contact sports until your doctor has cleared you for these activities. If you have a history of seizures, you shouldn't swim alone.
- **Do not** drink alcohol or take recreational drugs.
- **Do not** return to normal school, college, or work until you feel completely able to.

Driving after a head injury:

- **Even if you have had a normal head scan and your memory has not been affected do not** drive until your symptoms have fully resolved. If any uncertainty, we advise you to seek advice from your GP and DVLA about your ability to drive and that you inform your insurance company about your head injury to ensure your policy remains valid.
- If you have had a seizure, you must not drive and you must notify the DVLA.

Emotional wellbeing:

Following a head injury it is normal to experience emotional changes. You may find that you are tearful, anger quickly, are more irritable or frustrated. These feelings should settle in the days and weeks that follow. However, if you or your friends/family are concerned then you should contact your GP for further advice.

Long term problems:

Most patients make a full recovery and don't experience long term problems. However, some patients may not experience symptoms until weeks or months later, if you feel that something is not right, or you experience memory issues then contact your GP for further advice/guidance.

Additional support and guidance can be found on:

Headway:

This is a UK wide charity that works to improve life after brain injury by providing support and information services

www.headway.org.uk

Crossroads House

Scorrier

Redruth

Cornwall

TR16 5BP

United Kingdom

Tel: 07715336853

Email: headwaycornwall@hotmail.co.uk

Echo Centre, Day Resource Centre

A day centre with a range of activities for people living with brain injury and physical disability.

Echo Centre

Barras Place

Liskeard

Cornwall

PL14 6AY

Tel. 01579 341070

The brain charity:

This is a UK wide charity that provides support and information to anyone with a neurological condition.

www.thebraincharity.org.uk

NHS online:

Provides practical information and advice for all patients, friends, and family.

www.nhs.uk

Appendix 11. Leaflet: Neurology Care Advice Service

Contact us

Phone:
01209 318106

Email:
neurorehab@pch-cic.nhs.uk

The service runs from Monday to Friday.

There is an answer phone service available if we are unable to take your call. Please leave a message and we will get back to you as soon as possible.

Drop-in advice sessions

We hold drop-in advice sessions at:

The Merlin Centre, Hewas Water, St Austell, the first Monday of each month, 1.30pm to 4.30pm.

The Hayle Day Centre, Hayle, the last Tuesday of each month, 1.30pm to 4.30pm.

No appointment is necessary.

Please telephone 01209 318106 for further information.

For medical advice

Neurology Care Advisors do not give medical advice, so it is important that you raise any concerns with your GP or the Specialist Nurse involved in your care.

For advice on medication, contact your GP or Specialist Nurse.

In an emergency contact your GP or call 999

Please contact PALS if you would like to receive this booklet in large print, Braille, on CD or in any other language. Call 0300 330 1444 or email Pals.Community@pch-cic.nhs.uk

www.peninsulacommunityhealth.co.uk

Peninsula Community Health is a not for profit Community Interest Company responsible for providing NHS adult community health services in Cornwall and the Isles of Scilly.
Registered in England and Wales No: 7564579
Registered office: Peninsula Community Health CIC, Sedgemoor Centre, Priory Road, St Austell PL25 5AS

Peninsula Community Health

NHS

Neurology Care Advice Service

Support, advice and information for adults with neurological conditions.

Quality care, closer to you

APP00421092012

Here to help

We are available to help if you have been diagnosed with a neurological condition, or if you live with or care for someone with a neurological condition such as:

- Acquired brain injury
- Ataxia
- Cerebral palsy
- Charcot-Marie-Tooth
- Dystonia
- Fibromyalgia
- Guillain-Barré
- Huntington's disease
- ME
- Motor neurone disease
- Multiple sclerosis
- Muscular dystrophy
- Myasthenia gravis
- Parkinson's
- Peripheral neuropathy
- Spina bifida
- Spinal cord injury

and most other neurological conditions.

About us

As a patient, relative or carer, there will be times when you need to turn to someone for advice, information or support. You may need assistance sorting out a problem or finding the telephone number of someone that can help.

We are here to help with any query you may have.

We offer friendly, free and confidential advice and provide a single point of contact to guide you through the range of services available in Cornwall and the Isles of Scilly.

Help and Advice when you need it

Neurology Care Advisors act impartially and confidentially.

If we are unable to answer your question straight away, we will get back to you as soon as possible.

We work closely with local health providers and other organisations to offer a coordinated service to suit your individual needs.

We can offer:

Advice and information about relevant services provided by public and private organisations.

- Answers to access and mobility questions
- Links for hobbies, sports and leisure activities.
- Information about charities and voluntary services
- Contacts for support groups and associations

If you have a question or concern, please get in touch with us and we will do our best to help.

Supporting people with neurological conditions, their families and carers.

Appendix 12. Patient Information Sheet: Return to Sport after Concussion

This information sheet is available on Oceano.

PATIENT INFORMATION SHEET:

Return to sport after concussion

This leaflet is for recreational sports people and athletes without their own institutional or team doctor.

It provides up to date advice on recommended rest periods and returning to training and competition safely.

You have recently sustained a head injury but have been assessed in the Emergency department and are safe to go home.

You may still suffer from symptoms of concussion which is normal and can last for different time periods depending on each patient. 90% are better in 7 - 10 days.

Common symptoms of concussion:

- Headache
- Fatigue, difficulty getting to sleep
- Mental clouding, confusion or feeling 'foggy'
- Poor balance or dizziness
- Feeling emotional or irritable
- Poor concentration
- Nausea

A friend or relative should stay with you for the first 24 hours after the injury

Worrying signs include: reduced consciousness, repeated vomiting, seizures, vision changes, severe and worsening headache, watery liquid coming from ears or nose, numbness or weakness in limbs or if symptoms worsen despite rest. If you have any of these please return to the emergency department.

If you are suffering from the symptoms of concussion:

- **Do not** drink alcohol
- **Do not** drive or operate machinery
- **Do not** return to sport

We advise that you take an initial ***24-48 hour period of complete rest*** - this involves no physical activity or complex thinking tasks that you do as part of your normal daily activities. Staying away from electronic devices may also help.

The diagram on the next page of this leaflet should be used as a general *graduated return to play* (GRTP) guide across all sports. However, some have distinct rules that MUST be followed:

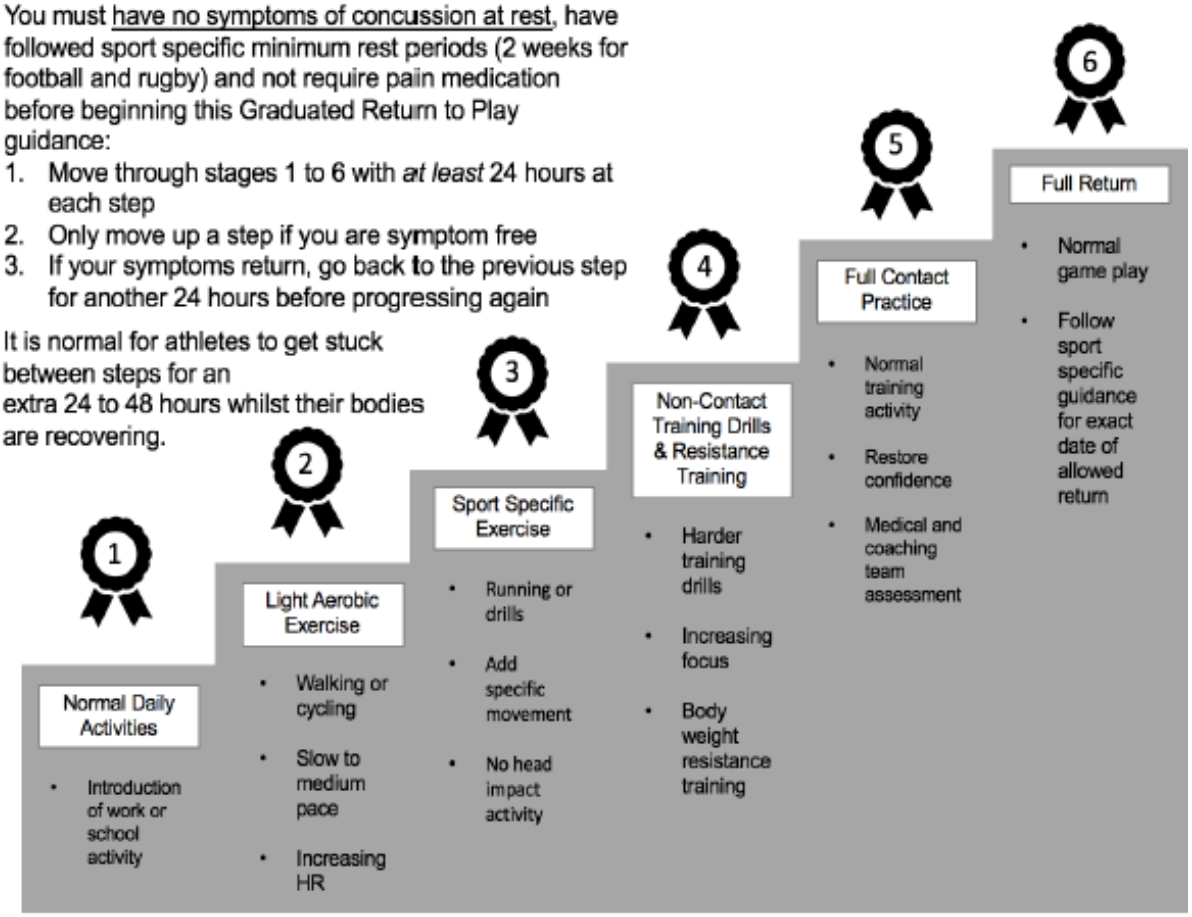
- **Rugby Union and Football** - players with confirmed concussion should not undertake strenuous exercise for at least **2 weeks** before starting GRTP. U19's must spend 48 hours minimum at each stage of the GTRP.
- **Boxing** - different minimum suspensions for knockout and technical knockout depending on loss of consciousness after sustaining head injury - these could involve a ban from boxing / sparring for at least 30 days.

Please check your sporting association's own regulations, as well as checking with your coach and club before returning to play.

You must have no symptoms of concussion at rest, have followed sport specific minimum rest periods (2 weeks for football and rugby) and not require pain medication before beginning this Graduated Return to Play guidance:

1. Move through stages 1 to 6 with *at least* 24 hours at each step
2. Only move up a step if you are symptom free
3. If your symptoms return, go back to the previous step for another 24 hours before progressing again

It is normal for athletes to get stuck between steps for an extra 24 to 48 hours whilst their bodies are recovering.



Why should you follow this guidance?

- Returning too soon could mean remaining symptomatic for longer, increasing your total recovery period.
- Your overall performance and training responses are decreased while recovering.
- Athletes who return to training early have a greater risk of lower limb sprains and dislocations due to reduced coordination and balance.
- If another head injury is sustained while in the recovery period, there is a risk of more serious and irreversible injury to the brain termed Second Impact Syndrome.
- If you sustain multiple repeated concussions in your career, you are at greater risk of developing future long term brain changes termed Chronic Traumatic Encephalopathy

If you feel as if your symptoms are getting worse, or if you have any concerns please contact the Emergency Department, your GP or NHS 111 / 999 services.

Further information on concussion and GRTP can be found online:
***England Football** - https://www.englandfootball.com/concussion*
England Rugby - https://www.englandrugby.com/participation/playing/headcase

NHS
Royal Cornwall Hospitals
NHS Trust