# INTER-HOSPITAL TRAUMA TRANSFER GUIDELINE- CHW

## PRACTICE GUIDELINE ©

## DOCUMENT SUMMARY/KEY POINTS

- NSW has three Paediatric Trauma Centres.
- They are The Children's Hospital at Westmead (CHW), Sydney Children's Hospital (SCH) and John Hunter Children's Hospital (JHCH).
- This guideline aims to standardise and streamline the process of organising Trauma inter-hospital transfers to The Children's Hospital at Westmead.
- Because of the geographical size of NSW, not all paediatric trauma patients can be transported immediately to a Paediatric Trauma service directly from the scene of the accident. This necessitates a secondary transfer to a tertiary Paediatric Trauma facility. To facilitate the transfer a number of phone calls are often required to be made by the transferring hospital's clinicians. These phone calls are often stressful and time consuming.
- This guideline includes information about the Paediatric Acute Trauma Care Hotline (PATCH) and feedback to referring hospitals.





| | | |
|---|---|---|
| **Approved by:** | SCHN Policy, Procedure and Guideline Committee | |
| **Date Effective:** | 1st September 2020 | **Review Period**: 3 years |
| **Team Leader:** | CNC | **Area/Dept**: CTCPER |

Date of Publishing: 27 August 2020 4:00 PM Date of Printing: 27 August 2020

# CHANGE SUMMARY

- New document
- **27/8/20**: Minor review. Updated Trauma feedback form.

# READ ACKNOWLEDGEMENT

- Clinical staff involved in accepting inter-hospital trauma transfers include:
  - On call Surgeon, Surgical Fellow or Registrar
  - PICU Consultant, Fellow or Registrar
  - ED Consultant, Fellow or Registrar
  - Sub specialty Consultant, Fellow or Registrar (inc Neurosurgery, Orthopaedics & Plastics as required)
  - CHW Bed Manager or After Hours Nurse Manager (AHNM)

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# 1 Introduction

Paediatric trauma patients transferred to The Children's Hospital at Westmead (CHW) require a trauma assessment **within 24 hours** of an injury by the tertiary paediatric trauma team. This includes those patients that are intubated and/or who have had surgical or other management at the referring centre.

Best practice is that trauma reception and assessment occurs in a coordinated fashion and is done by a complete trauma team. At CHW the initial trauma assessment is done in the Emergency Department. The Emergency Department is responsible for activating the trauma call on patient arrival if the patient meets the trauma criteria.

The trauma team at CHW is comprised of senior clinicians from:

- Trauma Surgery (+/- other surgical subspecialties as required)
- Emergency Medicine
- Intensive Care
- Anaesthetics
- Radiography

# 2 Paediatric Acute Trauma Care Hotline (PATCH)

The SCHN Paediatric Acute Trauma Care Hotline (PATCH) and supporting Flow Chart **(Appendix 1)** have been developed to assist referring clinicians to contact the relevant Trauma team at CHW and to request an inter hospital transfer, enabling a more streamlined, standardised , evidence-based approach to the management of paediatric major trauma patients across NSW.

The flow chart aims to provide clinicians from referring hospitals with standardised criteria for the identification, handover and transfer of trauma patients. This document provides suggested guidelines and criteria for early consultation with the Paediatric Trauma facility and transfer. These may vary with the level of clinical services available at the referral hospital.

Calling the Trauma number **13004 TRAUMA** listed on the PATCH poster, allows clinical staff at a referring hospital to directly contact a trauma clinician at the Children's Hospital at Westmead.

Please note this number applies to the PATCH service at CHW. Similar Paediatric Trauma Hotline services are also provided by the Sydney Children's Hospital Randwick and John Hunter Children's Hospital using independent numbers.

# 3 PATCH referral documentation and checklist

The PATCH referral documentation and checklist has been developed to allow the clinician receiving the PATCH call to document patient details and clinical advice provided in relation to the trauma patient being referred. **(Appendix 2).**

The PATCH referral documentation and checklist is an internal form used for audit and follow-up purposes.

# 4 Retrieval conference calls

**All** retrieval co-ordination calls requesting transfer and/ or advice for Paediatric Trauma patients **must** include:

- Emergency Medicine Consultant/Fellow on call
- Trauma surgeon on call
- Sub specialty as required

**If subspecialty registrars/consultants receive call first they need to **ensure** others are included in the call**

**IF** the patient is expected to need an ICU admission the call **must** include:

- Emergency Medicine Consultant/Fellow on call
- Trauma surgeon on call

**AND**

- PICU consultant/fellow on call

**If PICU consultant or fellow receives call first they need to **ensure** others are included in the call**

**Note:**

The clinician receiving the PATCH call must call NETS (1300 362 500) to organise a conference call with relevant sub specialties as mentioned above. The clinician also needs to contact the Bed Manager or AHNM as soon as they are aware of the patient, including them in the conference call if possible. If there is not a suitable bed available at CHW, the Bed Manager / AHNM will assist in identifying an alternate destination for the patient.

# 5 Trauma Transfer Feedback

Facilities that have transferred a Paediatric Trauma patient via an inter-hospital transfer are provided with a written Trauma update with feedback on return transfer or discharge of the patient from CHW.

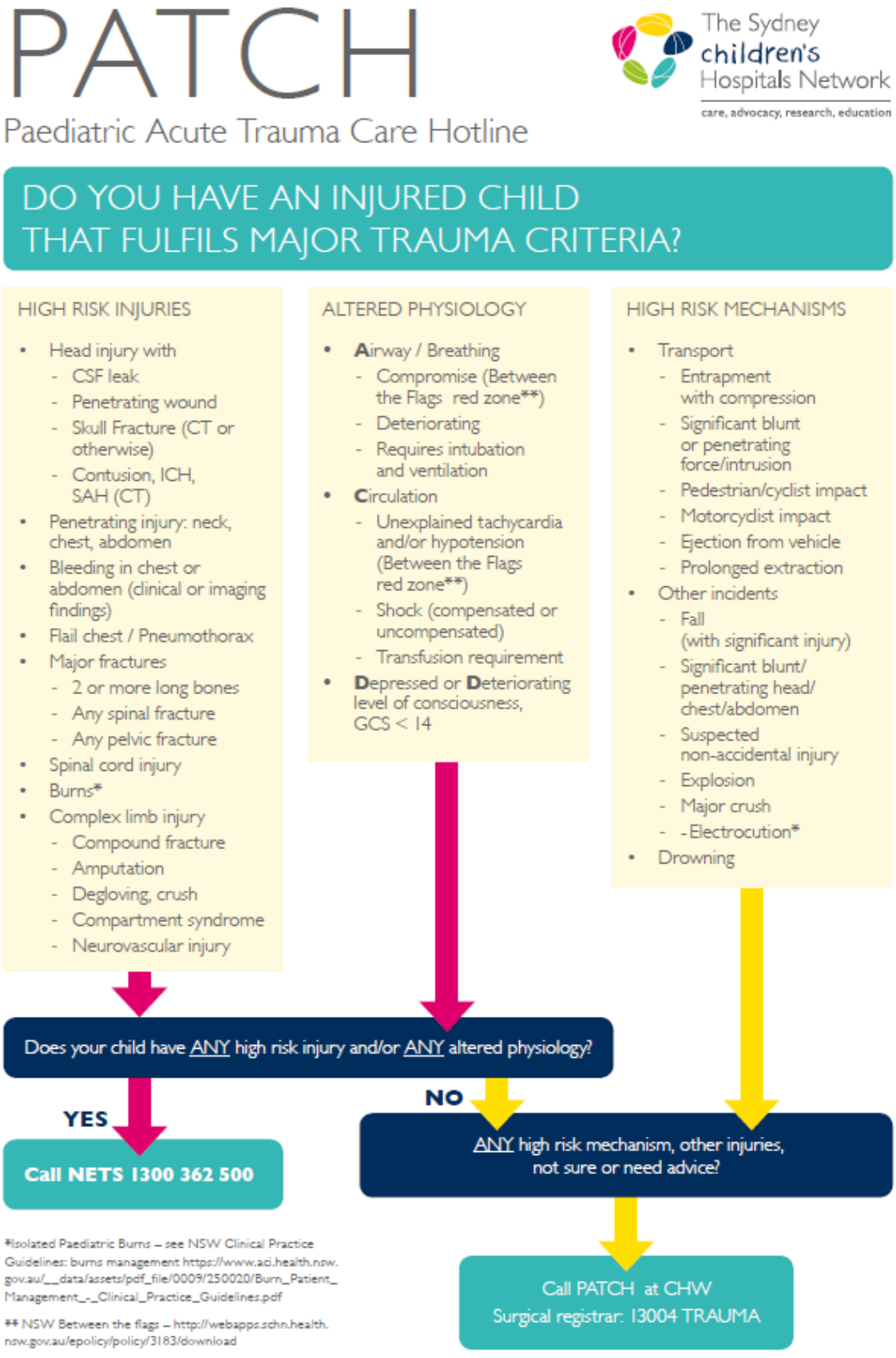
This feedback is provided to be considered for local clinical audits, education, performance improvements, and governance activities. It may also be used to provide supportive feedback to acknowledge the good care delivered at the referring facility for staff morale.

The Trauma CNC and the Director of Trauma are responsible for completing this feedback, via the Major Trauma Transfer Feedback form **(Appendix 3)** and a formal letter.

# 6 References

1. Institute of Trauma and Injury Management 2019, *NSW Inter-hospital major trauma transfer, interim guideline- November 2019,* Viewed 24 April 2020,<https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0007/560257/ACI_ITIM_NSW-Inter-hospital-major-trauma-transfer-guidelines-002.pdf>.
2. Australian Commission on Safety and Quality in Health Care 2014, *The national Safety and Quality Health Service (NSQHS) Standards*, Viewed 24 April 2020 <https://www.safetyandquality.gov.au/standards/nsqhs-standards>.

## Appendix 1 – Patch Flowchart



# Appendix 2

## CHW PATCH referral- Clinical advice documentation and check list

| Patients Name: | SEX: | DOB: | AGE: |
|---|---|---|---|
| Referring facility: | Date/time of Referral: | Referring Doctor name/Contact number: | |

| | |
|---|---|
| **MIST from referring Hospital** | |
| **Airway** | Adjuncts: Y ☐ N ☐ Other: |
| **Breathing** | RR: SAO2: Intubated/ventilated: Y ☐ N ☐ |
| **Circulation** | HR: BP: Cap Refill:<br>Fluids (ml/kg): Crystalloid:<br>Colloid:<br>Blood products:<br>Other: |
| **Disability** | GCS: E: V: M: PEARL Y ☐ N ☐ L: R: |
| **Temperature** | |
| **Spinal protection/ Other immobilization** | Collar Y ☐ N ☐ Type:<br>Other: |
| **Imaging & other investigations + / - results** | CXR: PXR: C-spine XR:<br>FAST:<br>CT:<br>Bloods:<br>Other: |
| **Imaging reviewed** | Y ☐ N ☐ |
| **T/F of images request with provisional report** | Y ☐ N ☐ |

**If CHW accepted patient transfer**

| | |
|---|---|
| **Treatment prior to transfer** | |
| **Mode of transfer agreed upon** | |
| **Is Trauma consultant aware of plan?** | Y ☐ N ☐ If yes: Trauma Consultant's Name:<br>Trauma Consultant's Contact details: |
| **ED and or PICU aware** | **ED** Y ☐ N ☐ **PICU** Y ☐ N ☐ |
| **Other teams informed** | Y ☐ N ☐ If Yes: Team details: |

**Notification to CHW Bed Manager / AHNM ph 0408 479 384 (24/7 number)**

**If patient transfer not accepted by CHW**

| | |
|---|---|
| **Reason for refusal** | |
| **Alternate transfer arrangements made** | |
| **Name of Trauma Centre accepting care** | |
| **Clinician details of receiving Trauma centre** | Name:<br>Contact Details: |

| | |
|---|---|
| **Name/contact details of the person taking the PATCH call at CHW** | Name:<br><br>Contact Details: |

# Appendix 3

## Standards for Feedback to referring hospitals

An integral component of a functional trauma system is the provision of feedback to those involved in the care continuum of a trauma patient. It is envisaged that this feedback would be used for local clinical audit and governance activities.

**Purpose**

To define the key deliverables in regards to feedback for transferred trauma patients to referring hospitals.

**Aim**

- To provide concise and targeted feedback regarding patient condition and outcome. This includes provisional/actual diagnoses and treatments.
- To provide specific feedback regarding issues associated with the care of the trauma patient at referring hospitals.

**Minimum Standards**

1. **Case Selection**

   All cases that meet PATCH criteria for transfer (Appendix 1)

2. **Timing**

   After Tertiary Trauma Survey has been completed or no later than 14 days after admission

3. **Recipient**

   - Designated Director of Trauma for the Hospital
   - Director of Emergency Department
   - Nurse Manager Emergency Department
   - Trauma CNC

4. **Dataset**

   - patient demographics,
   - mechanism of injury,
   - anatomical diagnosis,
   - surgical intervention/s,
   - ITIM data sets (KPIs).

5. **Other related information pertinent to the case or for performance feedback purposes.**

**Instructions for the use of the Major Trauma Service Feedback information**

Feedback is essential and a valuable adjunct to clinical audit activities, staff moral and performance improvement. It is an important function of a PTC to provide feedback to acknowledge good care delivered at a referring centre and also provide feedback for improvement.

To enable referring hospitals to measure their performance in their own audit process the Major Trauma Service will provide a set of best practice standards along with a tick sheet covering which of those standard.

Major Trauma Transfer Criteria is based on Vital Signs, Injuries and Mechanism of Injury

The Trauma Advice and Referral Line, 13004trauma, provides communication access between the Children's Hospital at Westmead and a referring hospital.

Calling the number 13004trauma, allows a doctor at a referring hospital to make immediate contact with a trauma clinician at the Children's Hospital at Westmead. Senior trauma physicians will provide clinical advice and assistance to manage major trauma patients, prior to their transfer to a PTS for definitive care, as stated in the PATCH guidelines. Advice provided by the trauma clinician will be documented in an internal form for audit and follow-up purposes. (Appendix 2)

**Transfer documentation**

All patients transferred should be accompanied by the following documentation

- Spinal precautions
- Oxygen therapy
- All tube secure
- Monitoring equipment secure
- X-rays chest/pelvis/c/spine
- Photocopies of the following
    - Trauma Notes
    - Medical Referral Letter
    - Original Ambulance case Sheet
    - Trauma medical consultation record
    - Pathology results
    - Blood alcohol
    - ADT given
    - Urinalysis complete
    - Clothing, aids, valuables
    - Additions items listed

**Pre-Transfer Clinical Audit filters.**

Audit filters have been proven to be successful in assisting clinicians rapidly identify those cases for review. Given the limited amount of information contained within the feedback document, it was decided that we would apply these clinical audit filters to assist senior clinicians at referring agencies.

A failed audit filter ***only*** demonstrates that a predetermined filter threshold was not met. For example, *a patient temperature of <35 degrees Celsius with no documented active warming.* This audit filter will give an indication that the patient was hypothermic and there was no documentation of active warming.

It is recommend that managers familiarise themselves with these audit filters and explain the rationale for the data to staff.

Clinical Parameters

**Prior to transfer ABCD's should be appropriately managed**

**Airway**

Intubation in all patients with:

- Airway compromise (facial trauma/inhalation injury/airway injury)
- Inadequate oxygenation or ventilation (chest injury/spinal injury)
- Evidence of respiratory failure:
    - $PaO_2 \leq 60mmHg$ (or $SaO_2 < 90\%$) with $FiO_2 > .05$

- $PaCo_2$ >50mmhg with pH: 7.3
- Respiratory Rate between the flags red zone for age
- GCS of less than 9

If intubated an orogastic or nasogastric should be inserted to assist in preventing aspiration

**Breathing**

- All trauma patients require oxygen
- Ventilation to maintain normal ABG's
- Intercostal catheters for haemothorax/pneumothorax

For transport via helicopter or Fixed wing aircraft
Increasing altitude potentiate hypoxia and the reduction in alveolar partial pressure of oxygen, cabin pressures can expand pneumothoraces

**Circulation**

- Control external bleeding
- Establish 2 large calibre IV's
- Transfuse warmed crystalloid solution / blood products to restore blood volume and aim to normalise vital signs
- Insert IDC to allow for urine output measurements-
- Prevent Hypovolemic shock- Patient warming and monitoring
- Stabilise fractures with splints (check pulses)

**Trauma Triad**
Greatest risk to a trauma patient in the first 24 hours after definitive care is the trauma triad of hypothermia, acidosis and coagulopathy.

**Hypothermia**

Hypothermia is defined as a core body temperature of below 35.°C. Due to the susceptibility of trauma patients to hypothermia, the aim should be to keep temperature, aim should be to keep temperature >36°C

**Acidosis**

$PaO_2 \leq 60$mmHg (or $SaO_2$ <90%) with $FiO_2$>.05
$PaCo_2$ >50mmhg with pH: 7.3
Respiratory Rate between the flags red zone for age

***Diagnostic studies should not delay transfer***
*Ensure that the spine is managed according to the cervical spine acute care guidelines, analgesia to treat pain, wounds are clean and dressed and that tetanus immunisation is complete and antibiotics commenced if necessary*

*If at any time you require more urgent feedback in relation to a major trauma patient transferred to us please contact the trauma coordinator for more information 02 9845 1051*

**Major Trauma Transfer Feedback:**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **MAJOR TRAUMA TRANSFER FEEDBACK PROFORMA** | | | | | |
| | Addressed | **Director of Trauma:**<br>**C/O Transferring Hospital :** | | | | |
| | Patient | **Name :**<br>**DOB :**<br>**Date of Injury:**<br>**Mechanism of Injury (MIST)**<br>**M:**<br>**I:**<br>**S:**<br>**T:** | | | | |
| | Referring hospital | **Hospital Name:**<br>**Key Contact:** | | | | |
| Referring Hospital Details | Transfer details | Escort | Dr☐ | Careflight/AMRS ☐ | Other ☐ | |
| | | Type | Road Ambulance ☐ | AMRS/Amb☐ | Helicopter☐ | Fixed Wing ☐ |
| | Vitals on Admission | HR: | BP: | RR: | ETT: | Muscle relaxants: |
| | | Spo2: | Temp: | GCS: | E V M | Pearl: |
| | Operations & Procedures | Date & Time | Location | Details | | |
| | | | | | | |
| | Injuries | ISS: | | | | |

NB: This form was compiled with all available data at time of reporting. If more complete information is required please contact the appropriate trauma coordinator

*Adapted from Victorian State Trauma Committee*
*Created December 2018 Version 3*

| | | | | |
|---|---|---|---|---|
| FEEDBACK | Did the case meet major trauma criteria? | | ☐Yes<br>☐No | |
| | Did the patient arrive at the PTS within 6 hours of arrival at referring centre? | | ☐Yes<br>☐No | |
| | Did all <u>appropriate</u> documentation accompany the patient?<br>**See box below for documentation inclusion** | | ☐Yes<br>☐No | |
| | ☐ Triage Notes<br>☐ Progress Notes<br>☐ Ambulance case sheet<br>☐ Medication Chart<br>☐ Observation Chart | ☐Medical referral letter<br>☐ Pathology results | Imaging<br>☐ Chest<br>☐ Pelvis<br>☐ C-spine<br>☐Others | |
| FEEDBACK | Intubated if GCS <9 | | ☐Yes<br>☐ No<br>☐Not required | |
| | Shock identified/treated | | ☐Yes<br>☐No<br>☐Not required | |
| FEEDBACK | Hypoxia corrected<br>Pao2<60mmHg (spo2<90%) with Fi)2>.05 | | ☐Yes<br>☐No<br>☐Not required | |
| | Hypothermic Core Temperature < 36 | | ☐Yes<br>☐No<br>☐Not required | |
| | Coagulopathy corrected<br>APPTT>40sec/INR>2.0/Plt<100,000 | | ☐Yes<br>☐No<br>☐Not required | |
| | Acidosis<br>Paco2 >50mmhg with pH ≤7.3 | | ☐Yes<br>☐No<br>☐Not required | |
| Treatment at CHW | | | | |
| Comments | | | ISS: | |
| Contacts | | 9845 1051 | 0436651965 | 13004 TRAUMA |

Please note that CHW has a **Paediatric Acute Trauma Care Hotline (PATCH) 13004 TRAUMA**.
This is available 24hours a day, 7 days a week.

NB: This form was compiled with all available data at time of reporting. If more complete information is required please contact the appropriate Trauma Coordinator

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*Created December 2018 Version 3*