CHEST WALL TRAUMA SCREEN

April 2016

SPECIALIST SCREEN GUIDANCE

Overview

Over twenty-five years, the Trauma Audit & Research Network (TARN) has accumulated a huge database of injured patients with process and outcome measures. Evolution is central to trauma care and TARN tracks clinical evolution with improvement of its data collection. One recent area of advance is the surgical management of chest wall trauma using rib fracture plating, which is supported by NICE (IPG361). To improve care further, a new data collection system for chest wall injuries is required.

Rib fractures following high-energy trauma in younger patients remain common. However, all hospitals are seeing an increase in the number of older patients with severe chest trauma from simple falls. This will continue to increase because of the demographic changes in the population and presents a significant challenge for the future. The variation in admitting location, injury burden and clinical ownership characterises this group and hampers attempts to standardise care. Chest wall trauma is not a benign injury: a third of patients will experience significant respiratory compromise and infection. Prolonged hospitalization is common, long-term disability considerable and many (younger) patients do not return to full time employment.

Despite some promising prospective trials, fixation of multiple rib fractures is not standard, nor is it widely practiced. The introduction of rib-specific plating options has catalysed interest in fixation although practices vary widely and strong evidence supporting surgical fixation of chest wall injuries remains sparse and the indications for surgery are not clear.

We need to develop robust clinical data collection to help assess the various management pathways for severe chest trauma. TARN is uniquely placed to deliver this and so a new dedicated specialist data collection screen has been introduced. Following the model of the open tibial injury screen (BOAST4), this new screen will enable focussed data collection on patients with chest wall injuries.

Key to this new development is that data on all patients will be collected - both operative and non-operative patients. It is essential that we establish both the numerator and denominator in this clinical area. Bespoke fields to collect injury patterns and operative details have been included however the bulk of information will be entered as per routine/ normal practice.

Clinical engagement is essential in the completion of this new screen and it is hoped that support will be forthcoming.

Process

If you are submitting details of a patient who has any rib fracture(s) &/or a fracture of the sternum, please select *Yes* to "*Did the patient have a chest wall injury –fractures of the ribs(s) and/or sternum?*"

This question can be found in the Opening Section, under Other Audits.

These patients may or may not have an associated lung injury.

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Submission No.
Hospital:
TARN Case No:

[Save changes] [Save and next] [Delete section]

[Access extended dataset]

Choose Hospital
○ **Opening Section**
Incident
Pre-Hospital
ED
ED Attendants
Imaging
Operations
Critical Care
CC Attendants
Ward
At Discharge
Outcome Measurements
AIS Coding
Blind AIS coding

Save Section
View
Flag
Return
Validate And Dispatch
Select Matching
Compare
Print
View Diary
Extended Dataset

🖶 Printer friendly

Opening Section

*NHS Patient Number   9999999999

*Gender   ○ Male ○ Female ⊖

*Full date of birth?   ○ Yes ○ No ⊖

*Age

*Patient Post Code (first part)

*Patient Post Code (1st numeric of second part)

*Date of arrival at the hospital   01 / 04 / 2016   (DD/MM/YYYY)

#Time of arrival at the hospital   [ ] : [ ]   (HH:MM)

*Was the patient transferred?   [▼]

*TARN   ○ Yes ○ No ⊖

Best Practice Tariff

*Does the patient have a GP?   ○ Yes ○ Not registered with GP ○ Not Appropriate ⊖

*Presence of a Rehabilitation Prescription   ○ Yes ○ No ○ Not Appropriate ⊖
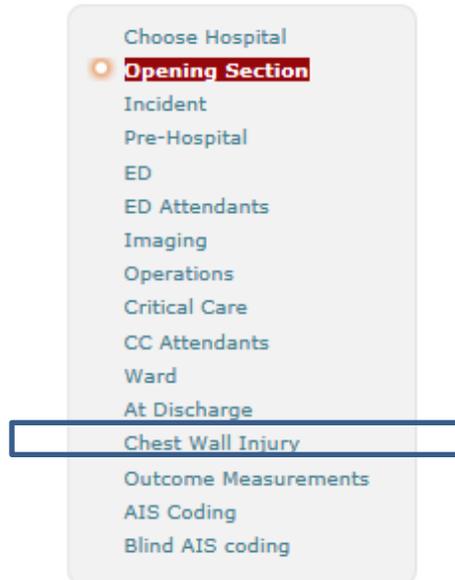
Other Audits

*Did the patient have an open tibial fracture?   ○ Yes ○ No ⊖

*Did the patient have a Chest Wall Injury-fractures of the rib(s) and/or sternum?   ○ Yes ○ No ⊖

[Save changes] [Save and next] [Delete section]

[Access extended dataset]

Other Audits

*Did the patient have an open tibial fracture?   ○ Yes ○ No ⊖

*Did the patient have a Chest Wall Injury-fractures of the rib(s) and/or sternum?   ⊙ Yes ○ No ⊖

Record *Yes* to the following injuries only:

- Rib fracture (including 1 rib)

- Sternum fracture

After saving changes on the Opening Section, a new section will appear on the left-hand menu called *Chest Wall Injury:*

The new section contains four questions, some of which expand with additional questions if *Yes* is selected:

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Submission No.
Hospital:
TARN Case No:

[Save changes] [Save and next] [Delete section]

[Access extended dataset]

Choose Hospital
Opening Section
Incident
Pre-Hospital
ED
ED Attendants
Imaging
Operations
Critical Care
CC Attendants
Ward
At Discharge
○ **Chest Wall Injury**
Outcome Measurements
AIS Coding
Blind AIS coding

Chest Wall Injury-fractured rib(s) and/or sternum

*Did the patient have a thoracic operation? (If 'Yes' also record in Operations section)   ○ Yes ○ No ○ Not Recorded ⊖

*Did the patient have non-invasive ventilation after extubation?   ○ Yes ○ No ○ Not Recorded ⊖

*Did the patient have a tracheostomy?   ○ Yes ○ No ○ Not Recorded ⊖

*Was the patient re-intubated   ○ Yes ○ No ○ Not Recorded ⊖

Save Section
View
Flag
Return
Validate And Dispatch
Select Matching
Compare
Print
View Diary
Extended Dataset

🖨 Printer friendly

[Save changes] [Save and next] [Delete section]

[Access extended dataset]

The maximum number of questions to complete is shown below:

Help text is available for each question, and can be accessed by clicking on the name of the question.

Chest Wall Injury-fractured rib(s) and/or sternum	
*Did the patient have a thoracic operation? (If 'Yes' also record in Operations section)	⦿ Yes ◯ No ◯ Not Recorded ⊖
Position for surgery known?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Position	1.Prone ⌄
Type of endotracheal tube known?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Tube type	1.Single lumen ⌄
Rib fixation?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Number of ribs fixed	1
Rib plating?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Plating type	1.Specific ⌄
Intramedullary splint?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Intrathoracic viscera inspected?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Method of inspection	1.VATS ⌄
Pleural tear?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Pleural lavage?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Air leak?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Air leak repaired?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Method of repair	1.Glue ⌄
*Did the patient have non-invasive ventilation after extubation?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Duration of non-invasive ventilation (days)	1
*Did the patient have a tracheostomy?	⦿ Yes ◯ No ◯ Not Recorded ⊖
Duration of tracheostomy (days)	1
*Was the patient re-intubated	⦿ Yes ◯ No ◯ Not Recorded ⊖

Save changes   Save and next   Delete section

Additional Data Fields

Analgesia

Analgesia has been added to the Core system (ED>Interventions>Analgesia), as follows:

*Analgesia	⦿ Yes ◯ No ◯ Not Recorded ⊖
*Date of Analgesia	☐ / ☐ / ☐ (DD/MM/YYYY)
Time of Analgesia	☐ : ☐ (HH:MM)
*Analgesia type	⌄

Spirometry

Three fields have been added to Observations/Respiration/Lung Function/*Spirometry* section (Extended dataset only) to record lung function and volume as follows:

Respiration	
*Date	___ / ___ / ___ (DD/MM/YYYY)
#Time	___ : ___ (HH:MM)
*Airway status (on arrival)	○ Yes ○ No ○ Not Recorded ⊖
*Breathing status (on arrival)	○ Yes ○ No ○ Not Recorded ⊖
*Oxygen saturation	○ Yes ○ No ○ Not Recorded ⊖
*Unassisted Respiratory rate	○ Yes ○ No ○ Not Recorded ⊖
End tidal CO2	○ Yes ○ No ○ Not Recorded ⊖
Lung function	⦿ Yes ○ No ○ Not Recorded ⊖
Spirometry	⦿ Yes ○ No ○ Not Recorded ⊖
FVC(L) (predicted)	[_____]
FVC(L) (actual)	[_____]
FEV1(L) (predictated)	[_____]
FEV1(L) (actual)	[_____]
FEV1/FVC(%) (predicated)	[_____]
FEV1/FVC(%) (actual)	[_____]
Peak flow	○ Yes ○ No ○ Not Recorded ⊖

Thoracostomy

Thoracostomy is now available in all Extended locations and also in pre-hospital, ED and Critical Care interventions in the Core system.

Respiration

*Airway Support	○ Yes ● No ○ Not Recorded ⊖
*Extubation	○ Yes ● No ○ Not Recorded ⊖
*Breathing support	○ Yes ● No ○ Not Recorded ⊖
*Chest Drain (NOT needle thoracocentesis)	○ Yes ● No ○ Not Recorded ⊖
Thoracostomy	● Yes ○ No ○ Not Recorded ⊖
Date of thoracostomy	☐ / ☐ / ☐ (DD/MM/YYYY) ▤
Time of thoracostomy	☐ : ☐ (HH:MM)
Needle thoracocentesis	○ Yes ○ No ○ Not Recorded ⊖
Date of needle thoracocentesis	☐ / ☐ / ☐ (DD/MM/YYYY) ▤
Time of needle thoracocentesis	☐ : ☐ (HH:MM)
Escarotomy	○ Yes ○ No ○ Not Recorded ⊖
Date of escarotomy	☐ / ☐ / ☐ (DD/MM/YYYY) ▤
Time of escarotomy	☐ : ☐ (HH:MM)

Validate and Dispatch

Once you have completed your submission, you must click on *Validate and Dispatch* in the same way as a standard submission.

Chest Wall Trauma Confirmation Screen (New)

After Validation and Dispatch, a **Chest Wall Trauma Confirmation Screen** will be displayed.

In order to evaluate the care of patients with chest wall trauma certain data fields are required and these are not always appropriate for all patients. As a check for Data Coordinators and to support your work, an additional ***Confirmation Screen*** is now available to pick up where these fields are not present. This screen will ask users to confirm that no data is available for the listed data fields for a specific patient. This may appear to duplicate your data entry however please be assured that this new ***Confirmation Screen*** is there to help support your work.

- Users can 'click' their mouse over each line to access more information on each data field.
- Each data field will be listed as 'missing' if the data has not been entered or has simply been missed whilst entering the submission. The user should return to the relevant section of the submission and enter the correct data or 'tick' the box to confirm that the data is unavailable.
- In the case of the four data fields required in the 'pre-hospital' setting, if the patient is a 'transfer in' then simply 'tick' the four boxes to acknowledge the information is unavailable.
- The system will not allow the user to dispatch until either data has been recorded or confirmation given that these data fields are not available.

The data points displayed will vary based on the amount of information entered in the submission. The following table should help to locate the data points, should you need to go back into the submission to add further detail. You will be able to do this by clicking *Back*.

Data Point	Core Dataset Location	Extended Dataset Location	Notes
Tranexamic acid (pre-hospital)	**Pre- Hospital>** Interventions> Tranexamic Acid	**At Scene>** Circulation> Tranexamic Acid **Enroute>** Circulation> Tranexamic Acid	Do not complete for patients 'transferred in'
Thoracostomy (pre-hospital)	**Pre- Hospital>** Interventions> Thorocostomy	**At Scene>** Interventions> Respiration> Thorocostomy **Enroute>** Interventions Respiration> Thorocostomy	Do not complete for patients 'transferred in'
Intubation/ventilation (pre-hospital)	**Pre- Hospital>** Interventions> Airway Support/ Breathing Support	**At Scene>** Interventions> Respiration> Airway Support/ Breathing Support **Enroute>** Interventions> Respiration> Airway Support/ Breathing Support	Do not complete for patients 'transferred in'
Tranexamic acid (pre-operation or where no operation recorded)	**ED>** Interventions> Tranexamic Acid	**ED>** Interventions> Circulation> Tranexamic Acid	Not all patients will have this intervention
Thoracostomy (pre-operation or where no operation recorded)	**ED>** Interventions> Thorocostomy	**ED>** Interventions> Respiration> Thorocostomy	Not all patients will have this intervention
Intubation/ventilation (pre-operation or where no operation recorded)	**ED>** Interventions> Airway Support/Breathing Support	**ED>** Interventions> Respiration> Airway Support/ Breathing Support	Not all patients will have this intervention
Blood gases (pre-operation or where no operation recorded)	N/A	**ED>**Investigations>Blood sampling>Blood gases	Not all patients will have this investigation
Pain Relief (pre-operation or where no operation recorded)	N/A	**At Scene>**Interventions> Nervous system>Analgesia> Specify analgesia name>*select appropriate pain relief* **Enroute>**Interventions> Nervous system>Analgesia> Specify analgesia name>*select appropriate pain relief* **ED>**Interventions>Nervous system>Analgesia>Specify analgesia name>*select appropriate pain relief*	Not all patients will have this intervention
Epidural (pre-operation or where no operation recorded)	**ED>**Interventions>Analgesia >Analgesia type>Epidural	**ED>**Interventions>Nervous system>Analgesia>Specify analgesia name>Epidural	Not all patients will have this intervention
CT Scan	**Imaging>**CT scan	**ED>**Investigations>CT **Imaging>**Investigations>CT	Not all patients will have a CT scan
Operative procedure	**Operations>**Procedure> Thoracic	**Operations>**Procedure> Thoracic	Not all patients will have an operative procedure