Guideline for the Management of Traumatic Chest Injuries (Adult)

This Guideline is in accordance with the National Trauma Peer Review Measures - ODN T16 -1C -107, TU T16 - 2B -311, MTC (Adult) T16 - 2B -116
### Purpose of Document
This document has been produced in accordance with the National Trauma Peer Review Measure - the South Yorkshire Major Trauma ODN should have in place Network agreed Clinical Guidelines for the management of Traumatic Chest Injuries (Adult).

### Required Action
All relevant staff should ensure they are fully aware of, and operate in line with this guideline.

### Action Required by/Audience
- Sheffield Teaching Hospitals NHFT Adult MTC Trauma Lead
- TU Trauma Leads (Barnsley, Chesterfield, Doncaster, Rotherham)

### Circulation
- Trusts Chief Executives
- Trusts Medical Directors
- Trusts Directors of Operations
- Trusts General Managers responsible for Trauma Services
- Operational Delivery Networks’ Strategy Board
- South Yorkshire Clinical Audit and Advisory Group (Pre-hospital/RESUS/Acute)

### Authors
Mr John Edwards, Consultant Thoracic surgeon, Dr Stuart Reid Consultant in Emergency Medicine, Dr JM Regi, Consultant in Interventional Radiology

### Date agreed by SY MT ODN CAAG
8 September 2017

### Version Number
1.0

### Date Signed off by ODNs’ Board
26 October 2017 (Pending)

### Policy Review Date
October 2019

Please note that from Jun 2017 all ODN Clinical Guidelines, Protocols and Policies will be available on the ODN website for downloading.
Guideline for the Management of Traumatic Chest Injuries (Adult)

1. **Objective**

1.1. To define the management of patients with suspected and proven chest / thoracic injury presenting to hospitals in the South Yorkshire Major Trauma Network.

2. **Background**

2.1. All Trauma Units (TUs) in the region are equipped to assess and provide emergency treatment for patients with chest wall injuries. This guideline will inform clinicians when to refer a patient to Thoracic Surgery for consideration of Major Trauma Centre (MTC) care.

2.2. Within the regional trauma network the Northern General Hospital (NGH) site was designated as the MTC for adults with Sheffield Children’s Hospital (SCH) for children. The guideline refers to adults only.

2.3. Within STH NHS Trust elective thoracic surgery is delivered at the Northern General Hospital, Chesterman wing. Inpatients with STH should be managed according the STH chest injury pathway (link)

3. **Management of patients meeting major trauma bypass criteria**

3.1. Patients meeting major trauma bypass criteria outside of STH should either be bypassed by the ambulance service to NGH ED or transferred to NGH ED from the TUs as part of the network agreed time critical secondary transfer policy from Trauma Units to the Sheffield Adult Major Trauma Centre, available here: [http://www.csodn.nhs.uk/](http://www.csodn.nhs.uk/)

3.2. Patients being bypassed to STH ED, or transferred according to the time critical transfer policy, will be met by a hospital trauma team and managed according to the existing STH ED Major Trauma guideline (link)

4. **Management of patients not meeting major trauma bypass criteria with thoracic trauma in trauma units**

4.1. Follow local/network policy for primary survey and resuscitation

4.2. All patients with suspected major trauma should be managed using NICE 2016 Major Trauma guidance.

4.3. Patients meeting any one of the following criteria should receive a CT thorax. CT should be performed as soon as possible and as a minimum on the same day as the request. Selected cases should receive contrast if there is clinical concern about intra thoracic bleeding:

- 3 or more rib fractures visible on CXR (Note CXR is a poor indicator of actual injuries)
- Uncontrolled pain, pain requiring IV opiates or pain that impairs adequate ventilation
- Significant chest injury on anticoagulants
- Significant chest injury in patient with osteoporosis
- Evidence of respiratory failure / ventilatory compromise due to injury
- Difficulty clearing secretions due to injury

5. Patients who should be referred to the MTC

The following criteria are aligned to those mandating thoracic surgery review within the MTC.

Clinical or radiological evidence of:
- traumatic pneumothorax or haemothorax
- subcutaneous emphysema
- sternal fracture requiring admission, including ST segment abnormality/raised troponin
- pneumo-mediastinum after trauma
- significant lung contusion
- flail segment (radiological or clinical)
- chest wall deformity
- 3 or more rib fractures (displaced fractures are more significant)
- uncontrolled pain, or pain that impairs adequate ventilation
- Haemodynamic instability/respiratory failure due to cardiothoracic trauma
- Isolated multiple displaced rib fractures requiring admission

6. How to contact Thoracic surgery

6.1. If further clinical assessment or imaging suggest extra thoracic injuries, manage patient according to agreed time critical secondary transfer policy from Trauma Units to the Sheffield Adult Major Trauma Centre, available here: [http://www.csodn.nhs.uk/](http://www.csodn.nhs.uk/)

6.2. If injuries are felt to be isolated thoracic trauma, contact thoracic surgical middle grade (STH switchboard bleep 2366 24/7) to review the case. This can be requested by an emergency department clinician or admitting medical/surgical team.

6.3. Thoracic surgery middle grade on call will review referral and determine if the patient requires MTC transfer. It is expected that the thoracic surgery middle grade will inform the on call consultant promptly of the referral and it is expected that cases declined for transfer will be discussed contemporaneously with the on call consultant.

6.4. The case details and imaging will be reviewed by a thoracic surgery consultant within 24 hours.

Links