

STANDARD TREATMENT WORKFLOW (STW)

CHEST TRAUMA

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CITATION

Choudhary S, Ganguli G, Chandran SBV, Shah D, Sunder T, Sajja LR, Pande S, Roy A, Yadav AK CHEST TRAUMA Journal of the Epidemiology Foundation of India. 2024;2(2Suppl):S257-S258.

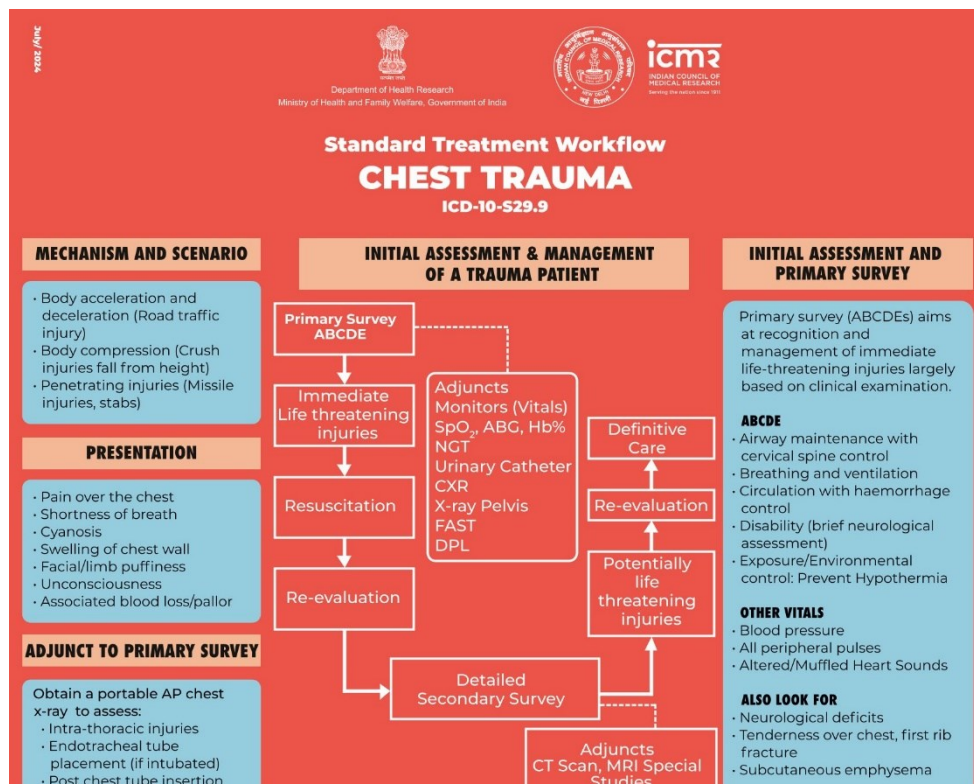
DOI: <https://doi.org/10.56450/JEFI.2024.v2i2Suppl.003>


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Standard Treatment Workflow
CHEST TRAUMA
ICD-10-S29.9

MECHANISM AND SCENARIO	INITIAL ASSESSMENT & MANAGEMENT OF A TRAUMA PATIENT	INITIAL ASSESSMENT AND PRIMARY SURVEY
<ul style="list-style-type: none"> • Body acceleration and deceleration (Road traffic injury) • Body compression (Crush injuries fall from height) • Penetrating injuries (Missile injuries, stabs) 	<p>Primary Survey ABCDE</p> <p>↓</p> <p>Immediate Life threatening injuries</p> <p>↓</p> <p>Resuscitation</p> <p>↓</p> <p>Re-evaluation</p> <p>↙ ↘</p> <p>Detailed Secondary Survey Adjuncts CT Scan, MRI Special Studies</p>	<p>Primary survey (ABCDEs) aims at recognition and management of immediate life-threatening injuries largely based on clinical examination.</p> <p>ABCDE</p> <ul style="list-style-type: none"> • Airway maintenance with cervical spine control • Breathing and ventilation • Circulation with haemorrhage control • Disability (brief neurological assessment) • Exposure/Environmental control: Prevent Hypothermia <p>OTHER VITALS</p> <ul style="list-style-type: none"> • Blood pressure • All peripheral pulses • Altered/Muffled Heart Sounds <p>ALSO LOOK FOR</p> <ul style="list-style-type: none"> • Neurological deficits • Tenderness over chest, first rib fracture • Subcutaneous emphysema
<p>PRESENTATION</p> <ul style="list-style-type: none"> • Pain over the chest • Shortness of breath • Cyanosis • Swelling of chest wall • Facial/limb puffiness • Unconsciousness • Associated blood loss/pallor 	<p>Adjuncts Monitors (Vitals) SpO₂, ABG, Hb% NGT Urinary Catheter CXR X-ray Pelvis FAST DPL</p> <p>Definitive Care</p> <p>↑</p> <p>Re-evaluation</p> <p>↑</p> <p>Potentially life threatening injuries</p>	
<p>ADJUNCT TO PRIMARY SURVEY</p> <p>Obtain a portable AP chest x-ray to assess:</p> <ul style="list-style-type: none"> • Intra-thoracic injuries • Endotracheal tube placement (if intubated) • Post chest tube insertion 		

IMMEDIATE LIFE THREATENING CHEST INJURIES (LETHAL SIX)

Respiratory distress, Tachypnoea, Low SpO₂

Change in voice

↓

Airway obstruction

TREATMENT

- Removal of foreign body if any
- Definitive airway-endotracheal intubation or surgical airway

Absent breath sounds, Hypotension

↓

Hyper-resonance

↓

Tension Pneumothorax

TREATMENT

- Immediate decompression with wide bore needle in 4th /5th intercostal space in anterior axillary line followed by chest tube insertion

Dull note

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Massive Hemothorax

TREATMENT

- Fluid resuscitation to correct haemorrhagic shock
- Insert chest tube

Chest wall defect

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Open pneumothorax

TREATMENT

- Cover the defect with sterile dressing and secure from 3 sides followed by chest tube (size ≥28Fr) insertion and secure the dressing on all 4 sides

Massive Air leak on ICD/emphysema

↓

Tracheobronchial injury

TREATMENT

- ICD + Surgery

Muffled Heart sounds, Hypotension
FAST: Pericardial fluid

↓

Cardiac tamponade

TREATMENT

- Surgical drainage or pericardiocentesis

POTENTIALLY LIFE THREATENING CHEST INJURIES (HIDDEN SEVEN)

ESOPHAGEAL INJURY	FLAIL CHEST	PULMONARY CONTUSION
<p>DIAGNOSIS</p> <ul style="list-style-type: none"> • Diagnosed by food particles in ICD drainage or leak of dye in pleural cavity <p>MANAGEMENT</p> <ul style="list-style-type: none"> • Surgery 	<p>MANAGEMENT</p> <ul style="list-style-type: none"> • Pain control • Oxygenation- Consider endotracheal intubation • Chest tube insertion if associated with pneumothorax/hemothorax • Consider transfer to closest appropriate facility 	<p>CLINICAL FEATURES</p> <ul style="list-style-type: none"> • Dyspnoea, Tachypnoea, Tachycardia, Chest wall bruising, Flail Chest <p>DIAGNOSIS</p> <ul style="list-style-type: none"> • Diagnosed on Chest x-ray <p>MANAGEMENT</p> <ul style="list-style-type: none"> • Adequate analgesia • Humidified oxygenation • Consider endotracheal intubation • Consider transfer to closest appropriate facility
<p>RUPTURED THORACIC AORTA</p> <p>DIAGNOSIS</p> <ul style="list-style-type: none"> • Suspected on Chest x-ray • Confirmation on CT angiography chest <p>MANAGEMENT</p> <ul style="list-style-type: none"> • Stenting/open surgery 	<p>CARDIAC CONTUSION</p> <p>DIAGNOSIS</p> <ul style="list-style-type: none"> • By ECG, Echocardiograph and troponin levels <p>MANAGEMENT</p> <ul style="list-style-type: none"> • Give supportive treatment and consider transfer to closest appropriate facility 	<p>SIMPLE PNEUMOTHORAX</p> <p>TREATMENT</p> <ul style="list-style-type: none"> • Chest tube insertion (> 28Fr) in 4th/5th intercostal space just anterior to midaxillary line <p>RUPTURED DIAPHRAGM</p> <ul style="list-style-type: none"> • Surgery

ABBREVIATION

ABG: Arterial Blood Gas	ICD: Intercostal Drainage Tube
CT: Computed Tomography	FAST: Focused Assessment with Sonography in Trauma
CXR: Chest Radiography	MRI: Magnetic Resonance Imaging
DPL: Diagnostic Peritoneal Lavage	NGT: Nasogastric Tube
ECC: Electrocardiogram	

REFERENCE

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KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

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