

STANDARD TREATMENT WORKFLOW (STW)

CHEST TRAUMA

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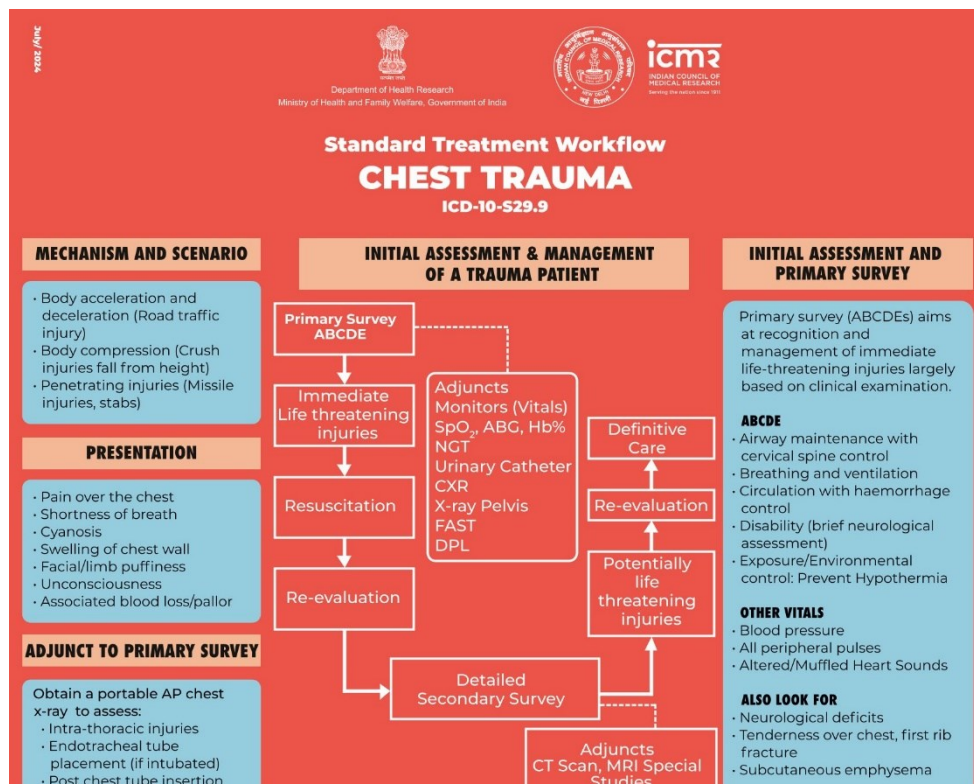
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Standard Treatment Workflow
CHEST TRAUMA
ICD-10-S29.9

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) 	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Primary Survey ABCDE</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Immediate Life threatening injuries</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Resuscitation</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Re-evaluation</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Detailed Secondary Survey</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Adjuncts CT Scan, MRI Special Studies</div> </div> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Adjuncts Monitors (Vitals) SpO₂, ABG, Hb% NGT Urinary Catheter CXR X-ray Pelvis FAST DPL</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Potentially life threatening injuries</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Re-evaluation</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Definitive Care</div> </div>	<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>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

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

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

1. Subcommittee AT, International ATLS Working Group. Advanced trauma life support (ATLS®): the ninth edition. The journal of trauma and acute care surgery. 2013 May;74(5):1363-6.

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

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