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Emergency Medicine Triage System

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EMERGENCY CARE SYSTEM FRAMEWORK

All around the world, acutely ill and injured people seek care every day. Frontline providers manage children and adults with injuries and infections, heart attacks and strokes, asthma and acute complications of pregnancy. An integrated approach to early recognition and management saves lives. This visual summary illustrates the essential functions of a responsive emergency care system, and the key human resources, equipment, and information technologies needed to execute them. The reverse side addresses elements of governance and oversight.





Importance of Triage

- 1) **Saves Lives** – Ensures patients with time-sensitive conditions (e.g., arrested, heart attacks, strokes, severe trauma) get treated first.
- 2) **Prevents Overcrowding** – Helps manage ED patient flow, reducing delays for critical cases.
- 3) **Resource Efficiency** – Allocates staff, equipment, and beds to those most in need.
- 4) **Disaster Preparedness** – Essential in mass casualty incidents (MCIs) where resources are overwhelmed.
- 5) **Standardized Care** – Provides a structured approach to patient assessment, reducing errors.





Patient arrives at health facility

SCREEN for any disease of public health concern. If suspect or confirmed case, continue the rest of the algorithm in an ISOLATION AREA and wear appropriate Personal Protective Equipment (PPE).

Step 1

TRIAGE

(The objective is to sort patients according to severity of illness or injury and initiate medical care in order of priority)

Does the patient have any **RED** signs?

- Unresponsive
- AIRWAY AND BREATHING**
- Stridor
- Respiratory distress* or central cyanosis
- CIRCULATION**
- Capillary refill >3 sec
- Weak and fast pulse
- Heavy bleeding
- HR <50 or >150
- DISABILITY**
- Acute convulsions
- Any two of:
 - Altered mental status
 - Hypothermia or fever
 - Stiff neck
 - Headache
- Hypoglycaemia
- OTHER**
- High-risk trauma*
- Poisoning/ingestion or dangerous chemical exposure*
- Threatened limb*
- Snake bite
- Severe acute chest or abdominal pain (> 50 years)
- ECG with acute ischaemia (if done)
- Violent or aggressive
- PREGNANT WITH ANY OF:**
- Heavy bleeding
- Severe abdominal pain
- Seizures or altered mental status
- Severe headache
- Visual changes
- SBP ≥160 or DBP ≥110
- Active labour
- Trauma

NO

YES

This is an **EMERGENCY** case

- Categorize as RED patient
- Move to Resuscitation Area or RED area
- Initiate first line management within 10 minutes*

Does the patient have any **YELLOW** signs?

- AIRWAY AND BREATHING**
- Any swelling/mass of mouth, throat or neck
- Wheezing (no red criteria)
- CIRCULATION**
- Vomits everything or ongoing diarrhoea
- Unable to feed or drink
- Severe pallor (no red criteria)
- Ongoing bleeding (no red criteria)
- Recent fainting
- DISABILITY**
- Altered mental status or agitation (no red criteria)
- Acute general weakness
- Acute focal neurologic complaint
- Acute visual disturbance
- Severe pain (no red criteria)
- OTHER**
- New rash worsening over hours or peeling (no red criteria)
- Visible acute limb deformity
- Open fracture
- Suspected dislocation
- Other trauma/burns (no red criteria)
- Known diagnosis requiring urgent surgical intervention
- Sexual assault
- Acute testicular/scrotal pain or priapism
- Unable to pass urine
- Exposure requiring time-sensitive prophylaxis (eg. animal bite, needlestick)
- Pregnancy, referred for complications

NO

YES

This is an **URGENT** case

- Categorize as YELLOW patient
- Move to YELLOW area
- Initiate first line management within 2 hours*

Did the patient arrive dead?

Move to mortuary. Notify police as required. Fill in necessary documentation.

Check for high-risk vital signs

Heart Rate (HR) <60 or >130

Respiratory Rate (RR) <10 or >30

Temperature (T) <36° or >39° C

Oxygen Saturation (SpO2) <92%

Alert, Verbal, Pain, Unresponsive other than A

Does the patient have any high-risk vital signs?

YES

NO

This is an **NON-URGENT** case

- Categorize as GREEN patient
- Move to GREEN area or OPD
- Initiate first line management within 4 hours*

*Or according to local time targets

Medical Resuscitation Algorithm



1 Recognize

- Recognize an acutely ill patient using the **Interagency Integrated Triage Tool (IITT)**.
- Move patient to red or resuscitation area.

2 Resuscitate

- Use the ABCDE approach to systematically evaluate the patient, identify and correct immediate life threats.
- Remember:
 - If suspected TRAUMA, maintain spine precautions & follow trauma algorithm.
 - Special considerations in paediatric, elderly or pregnant patients.

ABCDE Approach

Is the patient talking normally with no signs of obstruction?

AIRWAY (A)

LOOK FOR:

- Unconscious with limited or no air movement
- Foreign body in airway
- Gurgling
- Stridor

ACT:

- Open the airway (See jaw thrust or head tilt and chin lift)
- Insert OPA or NPA
- Place in recovery position
- Encourage coughing, remove visible foreign body
- If unable to cough, chest abdominal thrusts/Back blow as indicated
- If patient becomes unconscious, insert CTR per local protocols
- Open airway as above, but DO NOT blind gagging
- Keep patient calm and allow position of comfort
- For signs of anaphylaxis, give IM adrenaline
- For foreign body foreign

CHECK: Is airway clear?

Re-evaluate clinical severity and document all interventions

BREATHING (B)

Does the patient have increased work of breathing, abnormal breathing pattern, abnormal breath sounds, cyanosis, chest expansion? Check oxygen saturation

LOOK FOR:

- Signs of abnormal breathing or hypoxia
- Wheezes
- Signs of tension pneumothorax
- Signs of visible over-inflated (altered mental status and slow breathing with small pupils)
- Signs of respiratory distress (tachypnoea, tachypnoea)

ACT:

- Give oxygen. Assess ventilation with O/N. If breathing NOT adequate
- Give salbutamol. For signs of anaphylaxis give IM adrenaline
- Perform needle decompression, give oxygen and IV fluids. Arrange for chest tube
- Give nitroglycerin
- Give oxygen

CHECK: Is breathing adequate?

Re-evaluate clinical severity and document all interventions

CIRCULATION (C)

Does the patient have external or internal bleeding, distended neck veins, muffled heart sounds or poor perfusion? Check SpO₂, HR, capillary refill. Always adjust fluids for malnutrition

LOOK FOR:

- Signs of poor perfusion/tachycardia
- Signs of external or internal bleeding
- Signs of peripheral temperature (cool peripheries with distended neck veins and muffled heart sounds)

ACT:

- Give oxygen and IV fluids. If no pulse, follow resuscitation protocols
- Control external bleeding. Give IV fluids
- Give IV fluids, oxygen. Arrange for rapid peripheral damage
- Arrange urgent referral and/or handover

CHECK: Is perfusion adequate?

Re-evaluate clinical severity and document all interventions

DISABILITY (D)

Does the patient have head trauma, convulsions, unequal or fixed pupils, movement in all extremities? Check SpO₂, HR, capillary refill

LOOK FOR:

- Altered mental status (AMS)
- Convulsions
- Convulsions in pregnancy (or after recent delivery)
- Suspended/hypoglycaemia
- Signs of life-threatening brain injury or bleed (AMS with unequal pupils)

ACT:

- Place in recovery position
- Check glucose
- Check glucose. Give benzodiazepine
- Give magnesium sulphate
- Check glucose. Give glucose if <3.0mmol/L (<60 mg/dL) or unknown
- Monitor airway, raise head of bed. Avoid hypoxia, hypotension, hyperthermia
- Rapid transfer for neurosurgical services

CHECK: Is mental status improved?

Re-evaluate clinical severity and document all interventions

EXPOSURE (E)

Does the patient have hidden injuries, rashes or other lesions? Expose and examine the entire body

LOOK FOR:

- Wet or constrictive clothing

ACT:

- Remove wet clothing and dry skin thoroughly
- Remove jewellery, watches & constrictive clothing
- Prevent hypothermia and protect dignity

CHECK: Is mental status improved?

Re-evaluate clinical severity and document all interventions

3 Review

- Review patient status and interventions using the **WHO Medical Emergency checklist**.
- Check vital signs
- If patient condition changes, repeat ABCDE
- If no further interventions needed, take a **SAMPLE** history and perform a **SECONDARY** exam.
- Document care in a WHO Standardised Clinical Form or locally available option.

4 Refer

- If health facility unable to provide on going care, arrange for safe transfer to appropriate facility as soon as possible.

REMEMBER: PREPARATION is key. Use the elements of the WHO Emergency Care Toolkit to prepare your unit to better manage emergencies.

Contact emergencycare@who.int for more information

Trauma Resuscitation Algorithm



1 Recognize

- Recognize a seriously injured patient using the **Interagency Integrated Triage Tool (IITT)**.
- Move patient to red or resuscitation area.

2 Resuscitate

- Use the ABCDE approach to systematically evaluate the patient, identify and correct immediate life threats.
- Remember special considerations in paediatric, elderly or pregnant patients.

ABCDE Approach

Is the patient talking normally with no signs of obstruction?

AIRWAY AND CERVICAL SPINE IMMOBILIZATION (A)

LOOK FOR:

- Not speaking, with limited or no air movement
- Signs of possible airway injury (neck haematomas or wound, crepitus, stridor)
- Signs of possible airway burns (soot around the mouth or nose, burned facial hair, facial burns)

ACT:

- Use jaw thrust with C-spine protection
- Position if needed, remove visible foreign objects
- Place CIPA to keep the airway open
- Give oxygen. Monitor closely – handling can rapidly block the airway
- Arrange for urgent advanced airway management
- Give oxygen. Monitor closely – handling can rapidly block the airway
- Arrange for urgent advanced airway management

CHECK: Is airway clear?

Re-evaluate clinical severity and document all interventions

BREATHING (B)

Does the patient have increased work of breathing, abnormal breathing pattern, abnormal breath sounds, cyanosis, chest expansion? Check oxygen saturation

LOOK FOR:

- Signs of tension pneumothorax (hyperresonance on one side, distended neck veins)
- Open (gurgling) chest wound
- Breathing not adequate
- Large burns of chest or abdomen (or circumferential burns to torso)
- Signs of flail chest (suction of chest wall moving in opposite direction with breathing)
- Signs of haemothorax (increased breath sounds on one side, dull sounds with percussion)

ACT:

- Perform needle decompression
- Give oxygen, IV fluids
- Arrange for urgent chest tube
- Give oxygen, place Fick's dressing monitor for tension pneumothorax
- Arrange for urgent chest tube
- Give oxygen, assist ventilation with PVM
- Give IV fluids per burn size, give oxygen, remove constrictive clothing/jewellery
- May need escharotomy
- Give oxygen and provide pain medication
- May need advanced airway management and assisted ventilation
- Give oxygen, IV fluids
- Arrange for urgent chest tube

CHECK: Is breathing adequate?

Re-evaluate clinical severity and document all interventions

CIRCULATION (C)

Does the patient have external or internal bleeding, distended neck veins, muffled heart sounds or poor perfusion? Check SpO₂, HR, capillary refill

LOOK FOR:

- Signs of shock (tachycardia >130 bpm, hypotension, tachycardia)
- Uncontrolled external bleeding
- Signs of temporary poor perfusion, distended neck veins, muffled heart sounds

ACT:

- Give oxygen, IV fluids, control external bleeding, splint haemorrhage as indicated
- Apply pressure, deep wound packing or tourniquet as indicated
- Give IV fluids, oxygen. Urgently refer to surgeon

CHECK: Is perfusion adequate?

Re-evaluate clinical severity and document all interventions

DISABILITY (D)

Does the patient have head trauma, convulsions, unequal or fixed pupils, movement in all extremities? Check SpO₂, HR, capillary refill

LOOK FOR:

- Signs of brain injury (AMS with wound, deformity or swelling of head/neck)
- Signs of open skull fracture (as above, with blood or fluid from the ear/nose)

ACT:

- Immobilize cervical spine, check glucose, give nothing by mouth
- WB need neurosurgical care
- As above, and give IV antibiotics per local protocol

CHECK: Is mental status improved?

Re-evaluate clinical severity and document all interventions

EXPOSURE (E)

Does the patient have hidden injuries, rashes or other lesions? Expose and examine the entire body

LOOK FOR:

- Wet or constrictive clothing

ACT:

- Remove wet clothing and dry skin thoroughly
- Remove jewellery, watches & constrictive clothing
- Prevent hypothermia and protect dignity
- Immobilize extremity. Arrange for early anti-venom if relevant and available

CHECK: Is mental status improved?

Re-evaluate clinical severity and document all interventions

3 Review

- Review patient status and interventions using the **WHO Trauma Care Checklist**.
- Check vital signs
- If patient condition changes, repeat ABCDE
- If no further interventions needed, take a **SAMPLE** history and perform a **SECONDARY** exam.
- Document care in a WHO Standardised Clinical Form or locally available option.

4 Refer

- If health facility unable to provide on going care, arrange for safe transfer to appropriate facility as soon as possible.

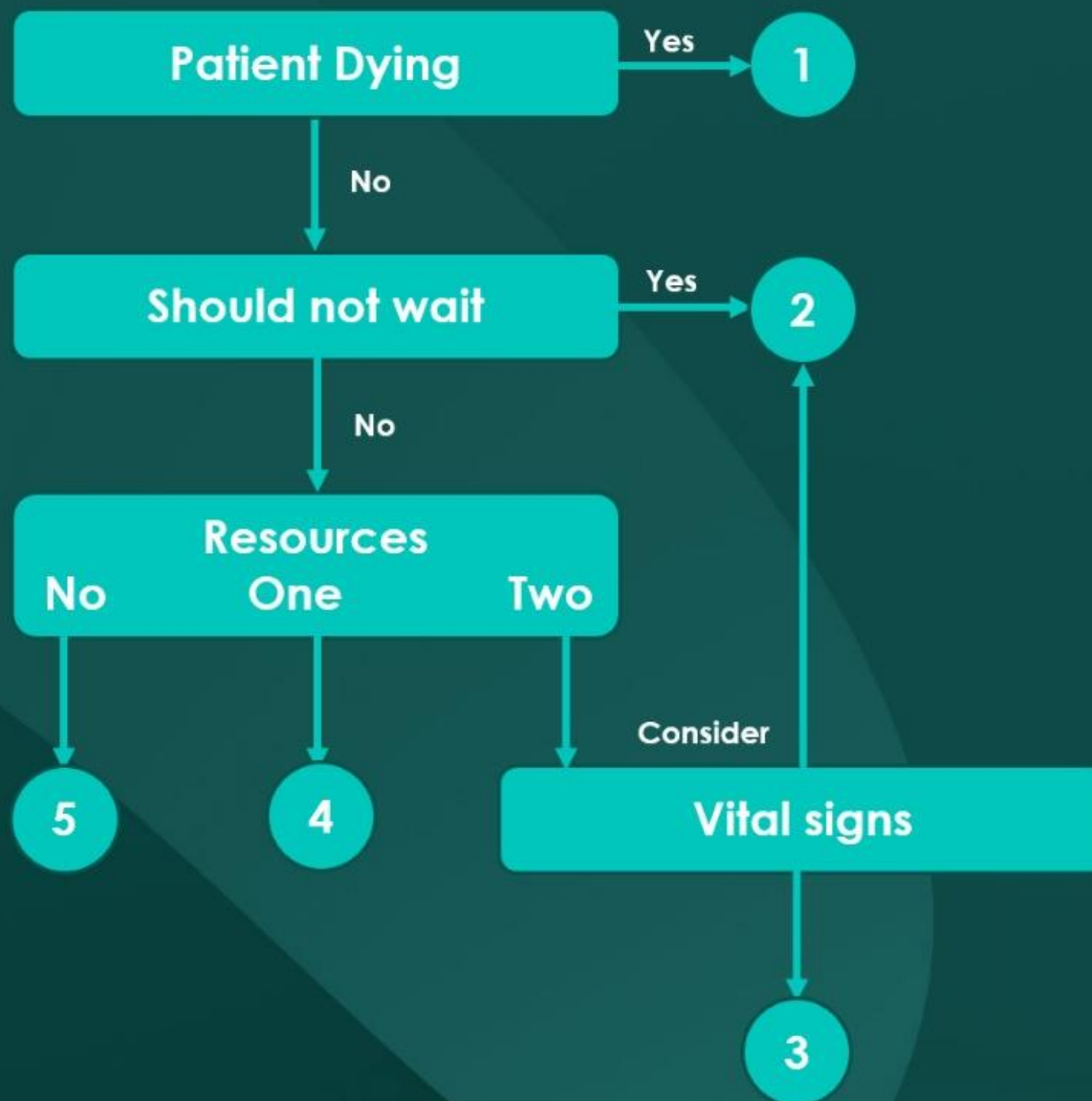
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Contact emergencycare@who.int for more information

Triage

- ✓ **Emergency Severity Index**
- ✓ **Manchester Triage System**
- ✓ **Australian Triage Scale**
- ✓ **Canadian Triage and Acuity scale**
- ✓ **The Cap Triage Score**
- ✓ **START Score**
- ✓ **Suez Canal Triage System**







Manchester triaging

MTS has good sensitivity (87-95%) for identifying critically ill patients

- The Manchester Triage System (MTS) prioritizes patients based on clinical urgency rather than arrival time.
- A typical assessment takes 2–3 minutes, with complex cases requiring more time.
- Patients are categorized into five priority levels: Immediate (Red), Very Urgent (Orange), Urgent (Yellow), Standard (Green), and Non-Urgent (Blue), each with a corresponding maximum waiting time.



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GEEKY MEDICS

Jaw thrust step 2: Lift the mandible forwards



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Compose your reply

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D

Orientated to

- Time ❌
- Place ❌
- Person ✅

ACVPU = Confused

Assessment

Assess

- Level of consciousness (ACVPU) 🧠
- Capillary blood glucose 🩸
- Pupillary reflexes 👁️

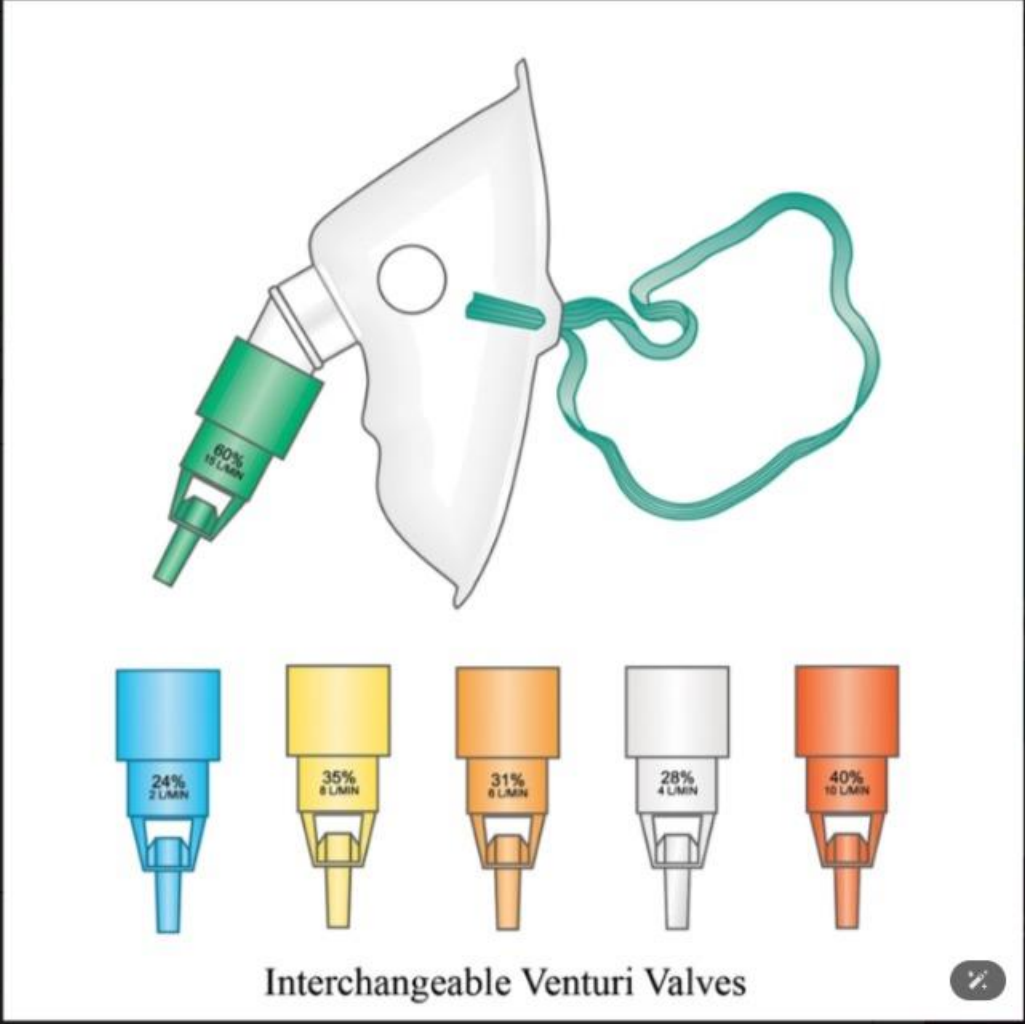
Review

- Prescribed medications 💊

Assess consciousness level using ACVPU

Contents

Compose your reply



Non-rebreather mask (reservoir mask) **Figure 3. Venturi masks**



Triaging systems



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