



Introduction to Emergency Care

For MO





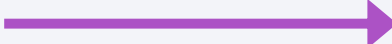
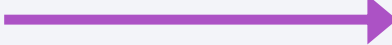
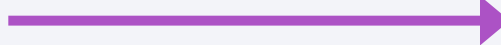
OBJECTIVES

- Identify the importance of Vital signs
- Differentiate between normal and abnormal vitals





INTRODUCTION

- Ayushman Bharat Health and Wellness program -Comprehensive Primary Health Care to the communities.  Emergency and trauma care services
- Require immediate medical care  reach an appropriate health facility for treatment within an hour.
- These conditions are life-threatening  right care at the right time.



EMERGENCY CARE : CURRENT SCENARIO

- Emergencies mostly seen in PHC, CHC, District Hospital or Nursing Homes by doctors with no specific training
- High demand for quality emergency care
- Address the gap by training doctors in common emergencies

With skills to stabilize any emergency and then refer to a specialist





WHAT TO TREAT FIRST?

Whatever is likely to kill the patient first!

- Stop massive hemorrhage, Secure airway, Assist breathing
- Give IV fluids / blood, Splint obvious fractures
- Transfer to a surgeon: **in better condition than on arrival!**



RECAP: PRIORITIES



- We will focus on recognition of critical patient condition
- We will not discuss diagnosis of specific conditions
- We will focus on stabilization of vital signs: Blood Pressure, Pulse, Respiratory Rate
- We will focus on safe and timely transfer of the patient

VITAL SIGNS: RESPIRATORY RATE

Tachypnoea is respiratory rate >20 in adults

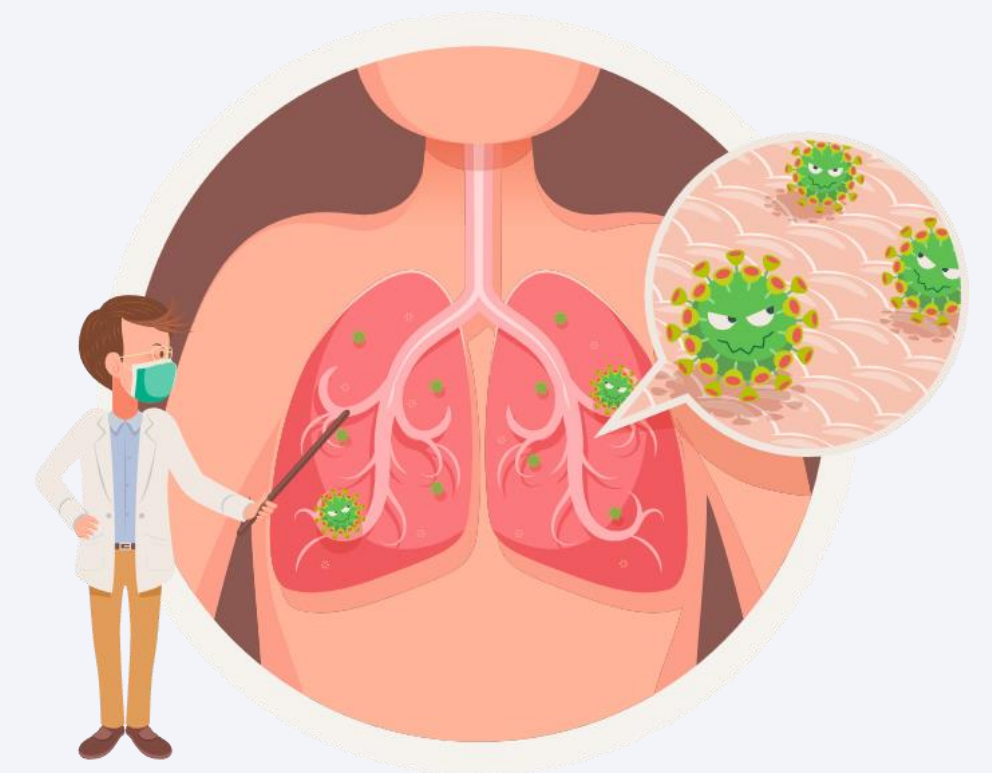
Causes:

- **Hypoxia:**

- Possible causes: pneumonia, pulmonary embolism, pneumothorax, asthma, emphysema, pulmonary edema, others

- **Metabolic:** e.g. Diabetic ketoacidosis

- **Physiological:** anxiety or pain





VITAL SIGNS: RESPIRATORY RATE



Bradypnoea is respiratory rate <10 in adult

- Causes: Drug overdose: Benzodiazepines, Opiates, Heroin, Alcohol
- Needs Positive Pressure Ventilation (PPV)
 - BVM (AMBU) ventilation
 - Bi-Level Positive Airway Pressure
- Use antidote if available: e.g. Naloxone for heroin/opiates

Respiratory Rate is a Vital Sign: it must improve if your patient

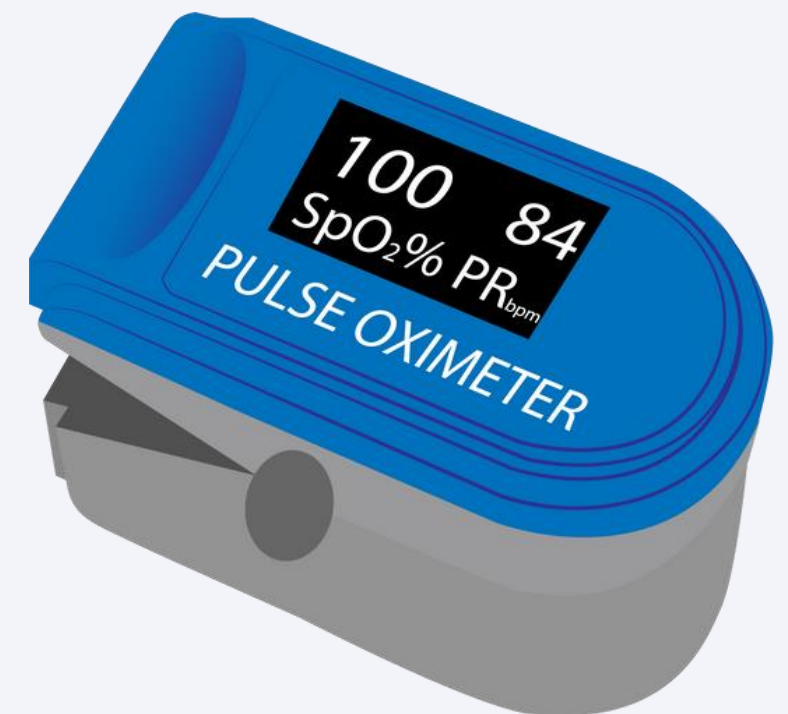


VITAL SIGNS: RESPIRATORY RATE



- **Hypoxia** ($SpO_2 < 90-94\%$): must be corrected!
 - By administering oxygen if still breathing spontaneously
 - Positive Pressure Ventilation if gasping or low RR (<10) (BVM)
 - Endotracheal intubation if BVM not effective
- **Causes:** Drug overdose, poisoning, pneumonia, pulmonary edema, pulmonary embolus, etc.

At the PHC, finding cause of hypoxia is less important than treating it with oxygen and support



VITAL SIGNS : PULSE RATE



Tachycardia is pulse rate of >100 in adult

Causes:

- May be early sign of compensated shock (before BP falls)
 - Sepsis,
 - Trauma,
 - MI
- Hypoxia
 - Pneumonia (sepsis)
 - Pulmonary embolism
 - Asthma,
 - Emphysema
 - Pulmonary contusion/pneumothorax (trauma)





VITAL SIGNS : PULSE RATE



- Anaemia
 - Acute (trauma/blood loss)
 - Chronic (less critical)
- Physiological Response to Pain or anxiety
- Tachycardiac dysrhythmias: will be discussed later

Tachycardia is an abnormal Vital Sign

Do not ignore tachycardia, unless you determine it is chronic and stable





VITAL SIGNS : PULSE RATE

Bradycardia is pulse rate of < 60 in adult. In Children it may be a pre-terminal rhythm.

Causes

- Cardiac : MI, Heart block (3rd degree), etc.
- Poisons or Overdose: OP poison, benzodiazepines, opiates
- Other Drugs: Beta or Ca^{2+} blockers, etc.



VITALS: BLOOD PRESSURE (BP)



- Determine if patient is stable or unstable
 - What is the BP?
 - Stable: careful observation is necessary
 - Unstable: IV fluids/atropine/vasopressors are given
- **Low Blood Pressure** is <90 mm Hg systolic BP in adult
- Low BP is not a sensitive indicator of shock
 - BP compensates well in early shock (especially in children)
 - BP fall is very late (terminal) finding in pediatric shock

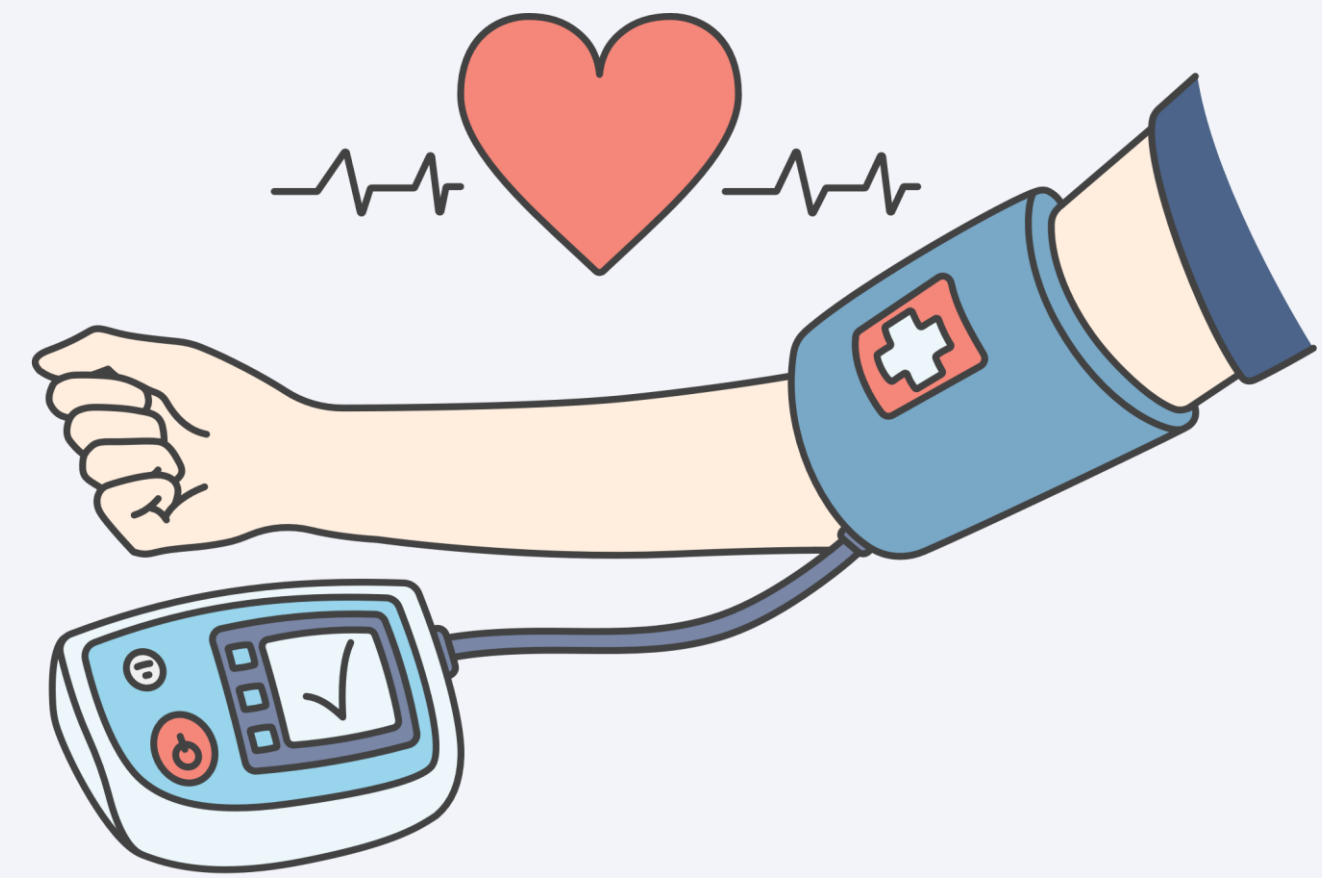




- Narrowed pulse pressure is an early indicator (SBP – DBP)
- Low BP is a specific indicator of shock
 - If the patient has a low BP, they are very likely to be in shock

Shock is easily reversible when it is early, not easy when it is late

Address shock early and aggressively!



VITALS: BLOOD PRESSURE (BP)

Low Blood pressure

- Caution: In small-framed persons: low BP may be normal
- An unwell person with low BP: You must address it
 - Make it better: with IV fluids +/- Inotropes
 - BP must improve if your patient is improving

If hypotensive on arrival, likely to be hypovolemic



VITALS: BLOOD PRESSURE (BP)



High Blood Pressure

- **Hypertensive Emergency:** Hypertension + critical end-organ dysfunction
- No specific cut-off BP to diagnose: it is based on symptoms/signs
 - Cardiac
 - Cerebral
 - Pre-eclampsia
- Must treat and stabilize before transfer
- **SBP should be reduced gently, not more than 20% in 24 hours**
- IV medication preferred: IV Labetalol or IV/SL Nitroglycerin
 - SL Nifedipine contraindicated: sudden BP drop = cerebral hypoxia





VITAL SIGNS: TEMPERATURE



FEVER	HYPOTHERMIA
Often indicates infection	Sepsis: antibiotics and IV bolus
Consider antibiotics early (before transfer) if patient unstable or you suspect bacterial sepsis	Environmental exposure: treatment may include <ul style="list-style-type: none"> • Active rewarming techniques: blankets, warm IV fluids • Warm catheter/NG irrigation

FEVER!



Correcting temperature rarely impacts patient stability

ADJUNCT VITAL SIGNS



- **Skin Colour/Temperature**

- Pallor: Anaemia, shock
- Cyanosis: hypoxia
- Cool + Moist: shock, organophosphates, hypoglycaemia

- **Capillary refill time:** Normal < 2 secs

- If > 2 seconds: poor perfusion, shock

- **Bedside Glucose test: Exception to the 'No Test' rule**

- Available easily and lifesaving
- Hypoglycemia: Easily treatable with oral or IV glucose



ADJUNCT VITAL SIGNS



PULSE QUALITY

- Weak, “thready” indicates early shock (before blood pressure drops)
- Bounding pulse: Hypertension

MENTAL STATUS

- Decreased in hypoxia, intoxication, sepsis, head injury, CVA
- If responding to only pain or unconscious: *intubation is advised*

ALERT

VERBAL

PAIN

UNRESPONSIVE



SUMMARY

Vital Signs are vital!

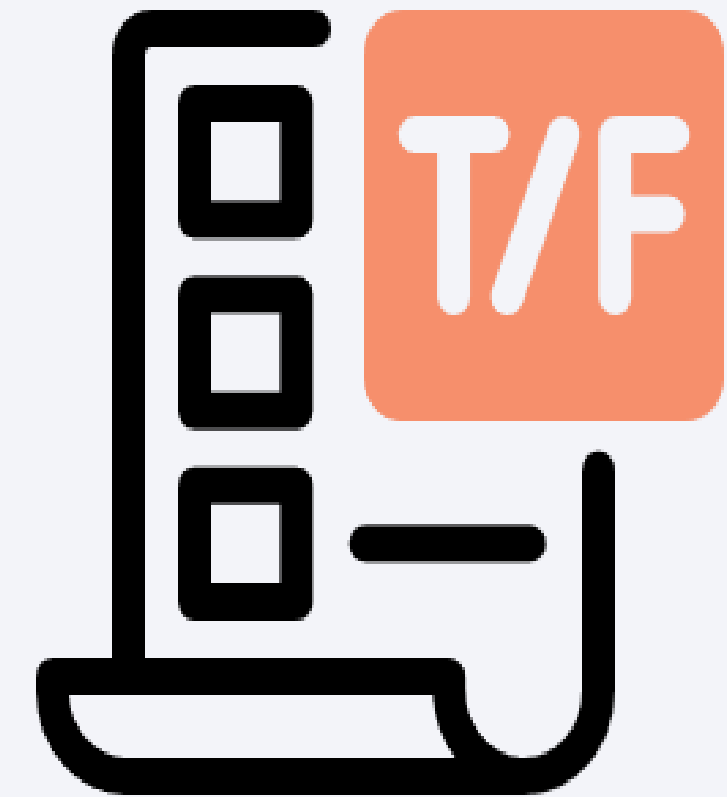
Abnormal vital signs must be addressed and improved

Focus on the problems, not on causes

A,B,C evaluation and stabilization is vital!

EVALUATION

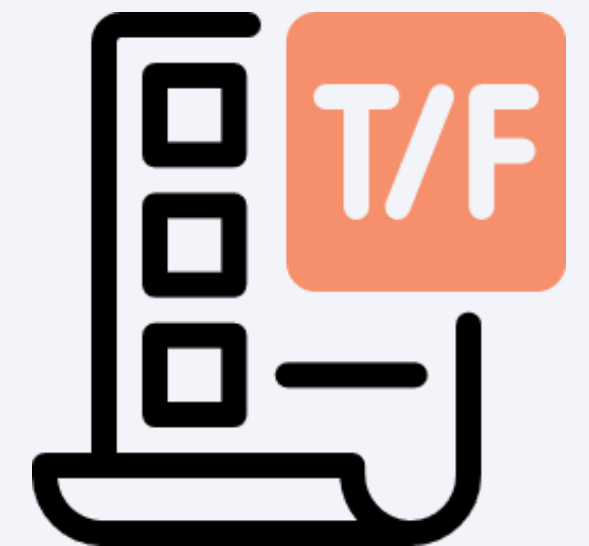
- You do not need to have a specific diagnosis to resuscitate and refer a critically ill patient from the PHC
- Narrowed Pulse Pressure is a late indicator of shock
- Normal Capillary Refill Time is more than 3 seconds
- Bradycardia in an asymptomatic patient does not require urgent management
- Recognizing a critically ill patient, Resuscitating them with initial treatment and Referring to specialist care decreases mortality



EVALUATION



- You do not need to have a specific diagnosis to resuscitate and refer a critically ill patient from the PHC:
 - **TRUE**
- Narrowed Pulse Pressure is a late indicator of shock:
 - **FALSE**
- Normal Capillary Refill Time is more than 3 seconds:
 - **FALSE**



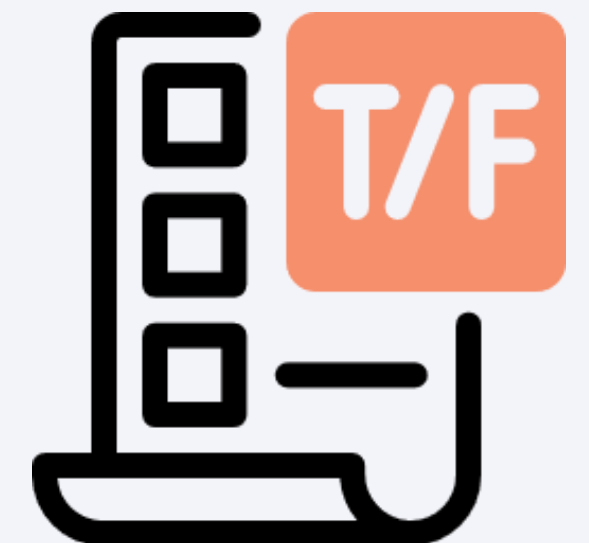


- Bradycardia in an asymptomatic patient does not require urgent management:

- **TRUE**

- Recognizing a critically ill patient, Resuscitating them with initial treatment and Referring to specialist care decreases mortality:

- **TRUE**





Thank You

