PEDIATRIC EMERGENCY CARE

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DISCLOSURES

- I have no relevant financial disclosures

OBJECTIVES

- Define pediatric emergency care and acute health issues in children
- Describe and Identify common pediatric emergencies including respiratory issues, trauma, infections, and allergic reactions
- Present evidence-based protocols and guidelines for managing pediatric emergencies emphasizing the importance of timely and appropriate interventions.
- Discuss how cultural beliefs and socioeconomic factors influence pediatric emergency care practices and access to care globally.
- Highlight the importance of training healthcare providers in pediatric emergency care and the need for capacity building
- Encourage discussion on innovative approaches that can enhance pediatric care delivery like telemedicine and mobile health solutions.

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GLOBAL EMERGENCY CARE

Image: University of Colorado Medical Campus

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LEADING CAUSES OF DEATH

- Many of the top causes of pediatric death across the world could be prevented by simple, timely and appropriate pediatric critical care:
  - Severe dehydration or infection/sepsis
  - Accidents and trauma
- The need for good trauma and critical care management has been obscured by the huge burden of other medical problems, Global Pandemic care, lack of access to care and limited experience with pediatric emergency care/critical care.

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DEFINITION OF CRITICAL CARE

According to the World Federation of Pediatric Intensive and Critical Care Societies:

> Pediatric critical care is “the treatment of the child with a life-threatening illness or injury in its broadest sense, without regard for the location and including pre-hospital, emergency and intensive care.”

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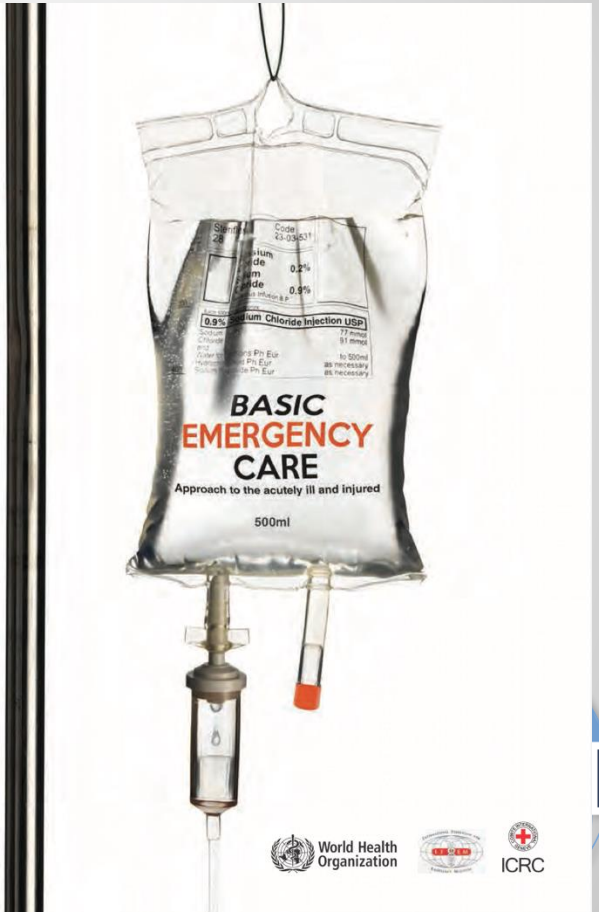
PRIORITIZING CARE

- The priority of many LMICs have been more public health focused than emergency care focused.
- Emergency and critical care services are some of the weakest services worldwide.
- COVID-19 Pandemic exposed many health systems across the world had gaps in ability to rapidly respond to deteriorating patients and identified needs such as:
  - Improved training in triage and emergency care
  - Inadequate staffing to provide urgent response
  - Lack of standardized assessment/treatment guidelines

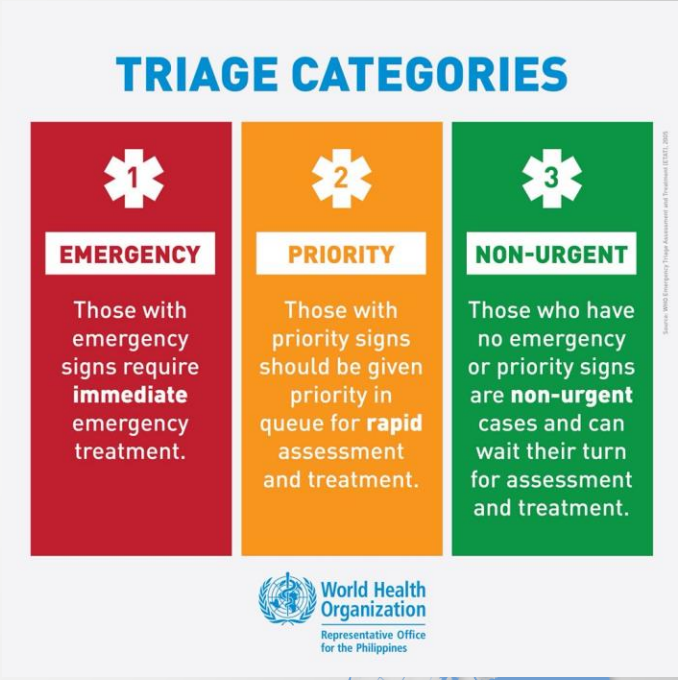
PREPARING FOR EMERGENCIES

- Having a clear plan, practicing the plan and having resources available for emergencies is critical to being able to respond appropriately and quickly.
- WHO through their Basic Emergency Course has created trainings (with many similar concepts to our AHA, ATLS, and other standardized trainings) to create a clear, repeatable plan to streamline emergency care



TRIAGE

- WHO created the *Emergency Triage, Assessment and Treatment (ETAT)* system for children.
- The Integrated Management of Childhood Illness (IMCI) provided simplified guidance to improve triage and rapid initiation of interventions needed for children presenting to hospitals for care.
- WHO Basic Emergency Course trains those providing care.



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INTERAGENCY INTEGRATED TRIAGE TOOL: Age < 12

1 CHECK FOR RED CRITERIA

- Unresponsive

AIRWAY & BREATHING
- Stridor
- Respiratory distress* or central cyanosis

CIRCULATION
- Capillary refill >3 sec
- Weak and fast pulse
- Heavy bleeding
- Cold extremities
- Any two of:
  - Lethargy
  - Sunken eyes
  - Very slow skin pinch
  - Drinks poorly

DISABILITY
- Active convulsions
- Altered mental status (confused, restless, continuously irritable or lethargic) with stiff neck, hypothermia or fever
- Hypoglycaemia (if known)

OTHER
- Any infant <8 days old
- Age <2 months and temp <36 or >39°C
- High-risk trauma*
- Threatened limb*
- Acute testicular/scrotal pain or priapism
- Snake bite
- Poisoning/ingestion or dangerous chemical exposure*
- Pregnant with adult red criteria

YES

MOVE TO HIGH ACUITY RESUSCITATION AREA IMMEDIATELY

NO

2 CHECK FOR YELLOW CRITERIA

AIRWAY & BREATHING
- Any swelling/mass of mouth, throat or neck
- Wheezing (no red criteria)

CIRCULATION
- Unable to feed or drink
- Vomits everything
- Ongoing diarrhoea
- Dehydration
- Severe pallor (no red criteria)

DISABILITY
- Restless, continuously irritable or lethargy
- Severe pain

OTHER
- Any infant 8 days to 6 months old
- Malnutrition with visible severe wasting OR oedema of both feet
- Trauma/burn (no red criteria)
- Sexual assault
- Known diagnosis requiring urgent surgical intervention
- New rash worsening over hours or peeling (no red criteria)
- Exposure requiring time-sensitive prophylaxis (e.g. animal bite)
- Pregnancy (no red criteria)
- Headache (no red criteria)

YES

MOVE TO CLINICAL TREATMENT AREA

NO

Patients with high-risk vital signs or clinical concern need up-triage or immediate review by supervising clinician

YES

3 CHECK FOR HIGH-RISK VITAL SIGNS

Temp <36° or >39°

SpO2 < 92%

AVPU other than A

RR	< 1 year	1-4 years	5-12 years
High	50	40	30
Low	25	20	10
HR	< 1 year	1-4 years	5-12 years
High	180	160	140
Low	< 90	< 80	< 70

NO

MOVE TO LOW ACUITY OR WAITING AREA

TRIAGE

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*See Reference Card

Developed by World Health Organization, International Committee of the Red Cross, Médecins Sans Frontières

SYSTEMATIC APPROACH

- Approach every patient in a systematic way
- Recognize life-threatening conditions early
- Do the most critical interventions first; fix problems before moving on!
- The ABCDE approach is very quick in a stable patient.

Goals:

- Identify **life-threatening conditions** rapidly
- Ensure the airway stays open
- Ensure breathing and circulation are adequate to deliver oxygen to the body

ABCDE: INITIAL APPROACH

The most important step is to **stay safe.**

- Scene safety: Consider hazards, violence and infectious disease risk
- Examples of hazards
  - Fire
  - Motor vehicle crash
  - Building collapse
  - Chemical spill

Ask for **help** early.

- Multiple patients
- Plan for transfer early if needed
- Know who to call for infectious outbreaks or hazardous exposures

SAFETY CONSIDERATIONS

Personal protective equipment

- Consider appropriate PPE for situation
  - Gloves
  - Gown
  - Mask
  - Goggles
  - Hand washing

Cleaning and decontamination

- Use PPE and wash your hands before and after every patient contact (or alcohol gel cleanser).
- Clean/disinfect surfaces
- Refer to local decontamination protocols for chemical exposures.

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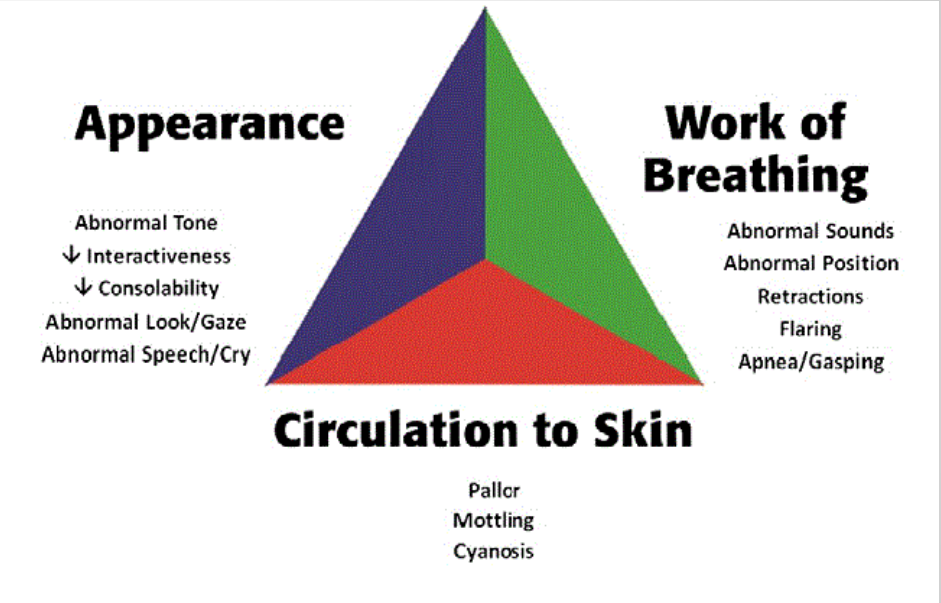
ABCDE

- **Airway/Breathing:** Breathing? Signs of respiratory distress? Cyanosis?
- **Circulation:** Tactile Temperature? Cap Refill? Pulse?
- **Coma/Convulsing**
- **Dehydration:** Severe diarrhea? Lethargy? Sunken eyes? Slow skin pinch?
- **Exposure:** Temp? Injury?



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ABCDE APPROACH: ELEMENTS

- **Airway with cervical spine immobilization**
  - **Check** for obstruction.
    - If trauma, immobilize cervical spine.

- **Breathing** plus oxygen if needed
  - Ensure adequate movement of air into the lungs.

- **Circulation with bleeding control** and IV fluids
  - Determine if there is adequate perfusion.
  - **Check** for life-threatening bleeding

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ABCDE APPROACH: ELEMENTS

- **Disability**
  - Assess and protect brain and spinal functions.
    - Check AVPU/GCS, pupils and glucose.

- **Exposure** and keep warm
  - Identify all injuries and environmental threats.
  - Avoid hypothermia.

This stepwise approach is designed to ensure that **life-threatening conditions** are identified and treated early, in order of priority.
A problem discovered (A-B-C-D-E) must be addressed immediately before moving on to the next step.

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SAMPLE HISTORY

- Categories of questions to obtain a patient's history
  - **S**igns and Symptoms
  - **A**llergies
  - **M**edications
  - **P**ast medical history
  - **L**ast oral intake
  - **E**vents
- Immediately follows the ABCDE approach and only follows if all ABCDEs are being addressed/stable.
- Allows providers to easily communicate

Elements of the SAMPLE history

S	Signs and symptoms	Patient/family's report of signs and symptoms is an essential assessment
A	Allergies	Important to prevent harm; may also suggest anaphylaxis
M	Medications	Obtain a full list and note recent medication or dose changes
P	Past Medical History	May help in understanding current illness and change management choices
L	Last Oral intake	Note whether solid or liquid; vomiting/choking risk for sedation; intubation or surgical procedures
E	Events surrounding the injury/illness	Helpful clues to the cause, progression and severity of current illness

REASSESS FREQUENTLY

The ABCDE approach is designed to quickly identify reversible life-threatening conditions.

Vital signs should be checked at the end of the ABCDE approach.

Once you find an ABCDE problem and manage it, you need to GO BACK and repeat the ABCDE again to identify any new problems that have developed and make sure that the management provided worked.

Ideally, the ABCDE approach should be repeated every 15 minutes or with any change in condition.

PEDIATRIC EMERGENCY PEARLS

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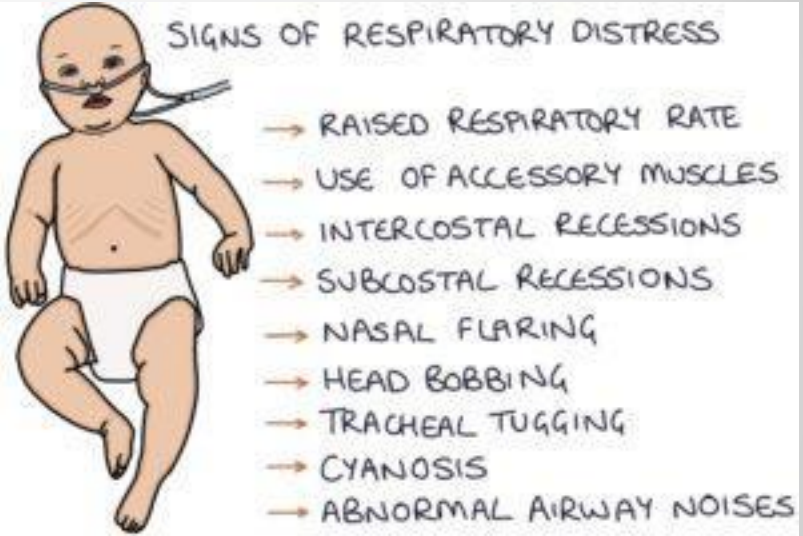
PEDIATRIC CONSIDERATIONS AIRWAY/BREATHING

- Children are far more likely to suffer from conditions of respiratory distress/failure than cardiovascular.
- Good Airway and respiratory assessment is critical and in any critically ill child, oxygen should be applied judiciously.
- In pediatric emergencies, crying is always a good sign!



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PEDIATRIC AIRWAY CONSIDERATIONS

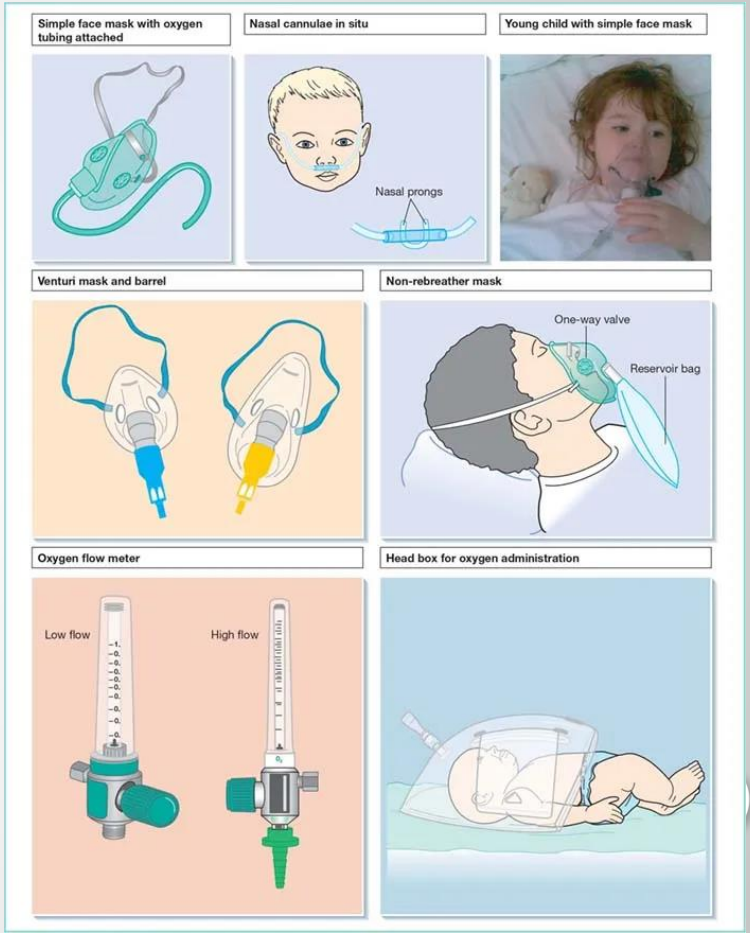
Compared to adults, children have:

- Bigger tongues
  - Use “sniffing” position
- Shorter necks, softer airway
  - Easier to block off
  - Avoid over-extending the neck
- A larger head compared to body
  - Watch closely for airway obstruction
  - Use jaw thrust
  - Correct head position with padding under shoulders to open airway

Excessive drooling, stridor, airway swelling, unwillingness to move neck are high-risk signs in children.

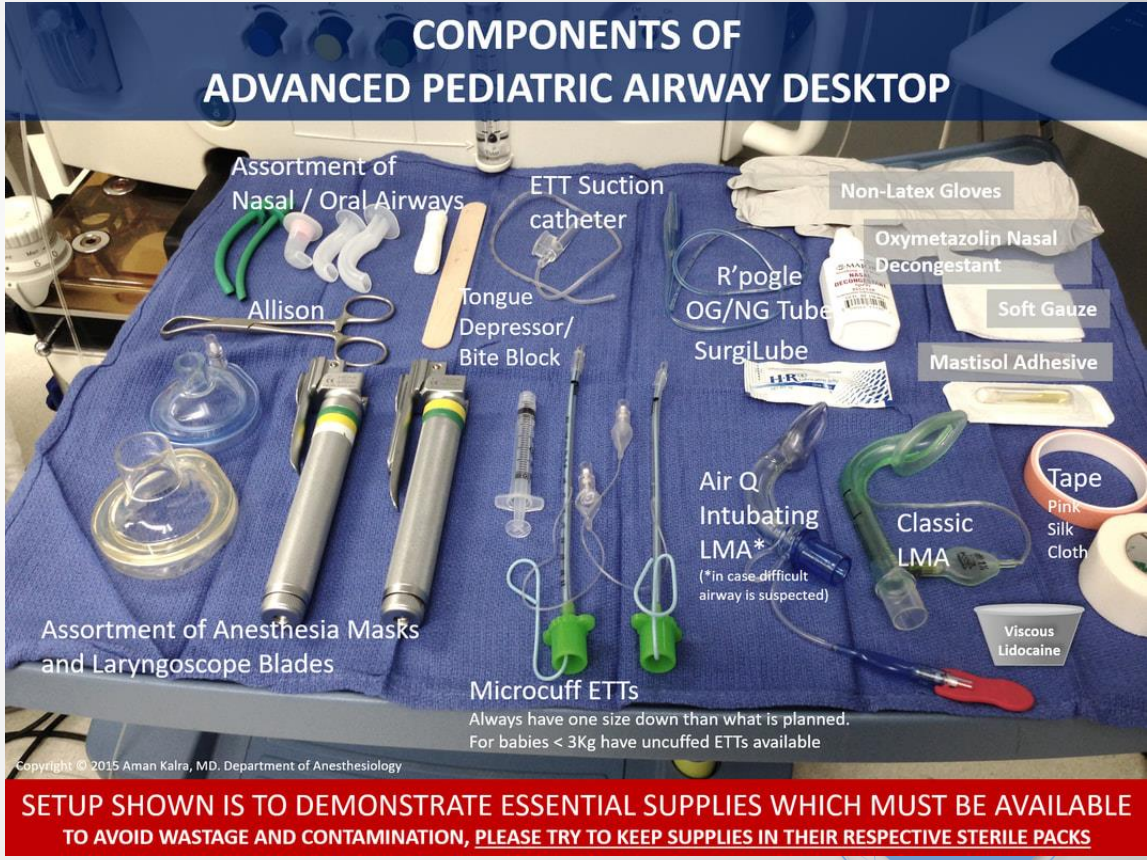
AIRWAY/BREATHING

- Always intervene before continuing the assessment!
- Always provide oxygen – preferably non-rebreather.
- Open the airway
- Remove visible foreign body
- Ventilate with bag and mask
- If prolonged bagging, consider intubation if qualified personnel and equipment.



AIRWAY/BREATHING

- Indications for advanced airway:
  - Prolonged bagging
  - Severe hypoxemia
  - Neurologic deficit without respiratory drive.
  - Reduce metabolic demands in severe shock.



BROSELOW TAPE

Tool utilized in pediatric emergency settings to quickly and accurately assess a child's size/weight for equipment, medication dosages, vital signs, etc.

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BROSELOW TAPE

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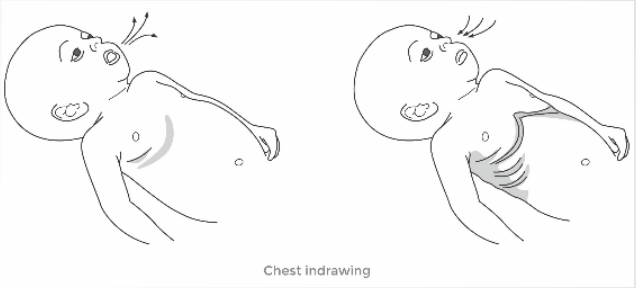
BREATHING CONSIDERATIONS

Look for signs of respiratory distress :

- Nasal flaring
- Head bobbing
- Grunting
- Chest indrawing or retractions


Chest indrawing

- Cyanosis, a blue/gray discoloration around lips, mouth or fingertips is a danger sign

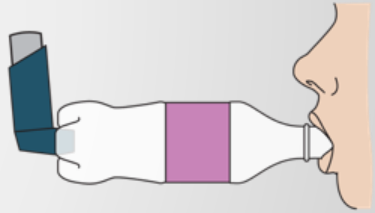
Look at the lower ribs

- Chest indrawing is when the lower chest wall goes IN when the child breathes IN.
- In normal breathing the whole chest and abdomen move OUT when the child breathes IN.

BREATHING CONSIDERATIONS

Listen

- *Silent chest* is a sign of severe distress in a child
  - Severe spasms and airway narrowing cause limited airway movement and few or no breath sounds may be heard.
  - Give SALBUTAMOL and OXYGEN.
  - Reassess frequently.



- *Stridor* is a sign of severe airway compromise
  - Allow child to stay in position of comfort.
  - Plan for rapid HANDOVER/TRANSFER.
  - Give nebulized ADRENALINE/Epinephrine. If unable to transfer immediately, consider IM ADRENALINE (allergic reaction protocol).

CIRCULATION

- For most children, tactile temp is sufficient.
- Give oxygen if not already applied.
- Check Cap refill (> 3 seconds)
- Check pulse
- Check for severe malnutrition.
- Check for injury

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CIRCULATION

- Stop any bleeding
- If no malnutrition: give crystalloid IV fluids rapidly (20mg/kg bolus)
- If unable to get IV, place IJ or IO
- If malnutrition: assess if child can take oral or NGT fluids
- Check blood glucose

NORMAL VITAL SIGNS IN PEDIATRICS BY AGE

Infant
0-12 months

	Normal Range
Heart Rate	100 - 180
Blood Pressure	72 - 104 / 37 - 56
Respirations	30 - 53

Toddler
1-2 years

	Normal Range
Heart Rate	90 - 140
Blood Pressure	86 - 106 / 42 - 63
Respirations	20 - 37

Preschooler
3-5 years

	Normal Range
Heart Rate	80 - 120
Blood Pressure	89 - 112 / 46 - 72
Respirations	20 - 28

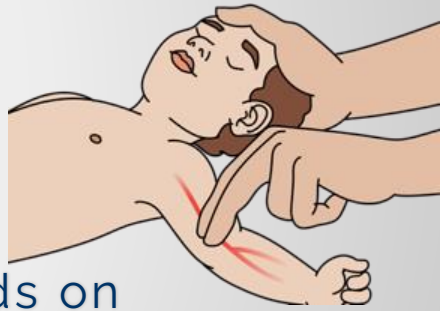
School-Age Child 6-9 years

	Normal Range
Heart Rate	75 - 118
Blood Pressure	97 - 115 / 57 - 76
Respirations	18 - 25

CIRCULATION CONSIDERATIONS

Low blood pressure in a child is a sign of severe shock.

- Children will maintain a normal blood pressure longer than adults but then decompensate quickly.
- Always monitor other signs of poor perfusion.
  - Decreased urine output
  - Sunken fontanelle, poor skin pinch, lethargy, altered mental status (severe signs)



Rate, volume and type of IV fluid administered depends on body weight, the cause of poor perfusion and the child's nutritional status.

Malnourished children require careful fluid management!

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COMA/CONVULSION

- Intervene rapidly for children who are not awake/alert

Table 1. Shock Types and Subtypes

Type of Shock	Subtypes of Shock
Distributive shock	• Septic shock • Anaphylactic shock • Neurogenic shock
Cardiogenic shock	• Heart failure • Dilated cardiomyopathy • Kawasaki disease • Multisystem inflammatory syndrome in children
Obstructive shock	• Cardiac tamponade • Constrictive pericarditis • Pulmonary embolism • Tension pneumothorax
Hypovolemic shock	• Blood loss: hemorrhagic shock • Fluid loss: vomiting/diarrhea

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COMA/CONVULSION

- Intervene rapidly for children who are not awake/alert.
- Manage airway
- If convulsing, give rectal diazepam
- Stabilize neck if trauma suspected
- Check blood sugar

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ASSESS ALL CHILDREN FOR THE PRESENCE OF DANGER SIGNS.

A child with danger signs needs urgent attention!

- Signs of airway obstruction
- Increased breathing effort
- Cyanosis
- Altered mental status
- Moves only when stimulated or no movement (AVPU other than "A")
- Not feeding well/ cannot drink or breastfeed
- Vomiting everything
- Seizures/convulsions
- Low body temperature (hypothermia)

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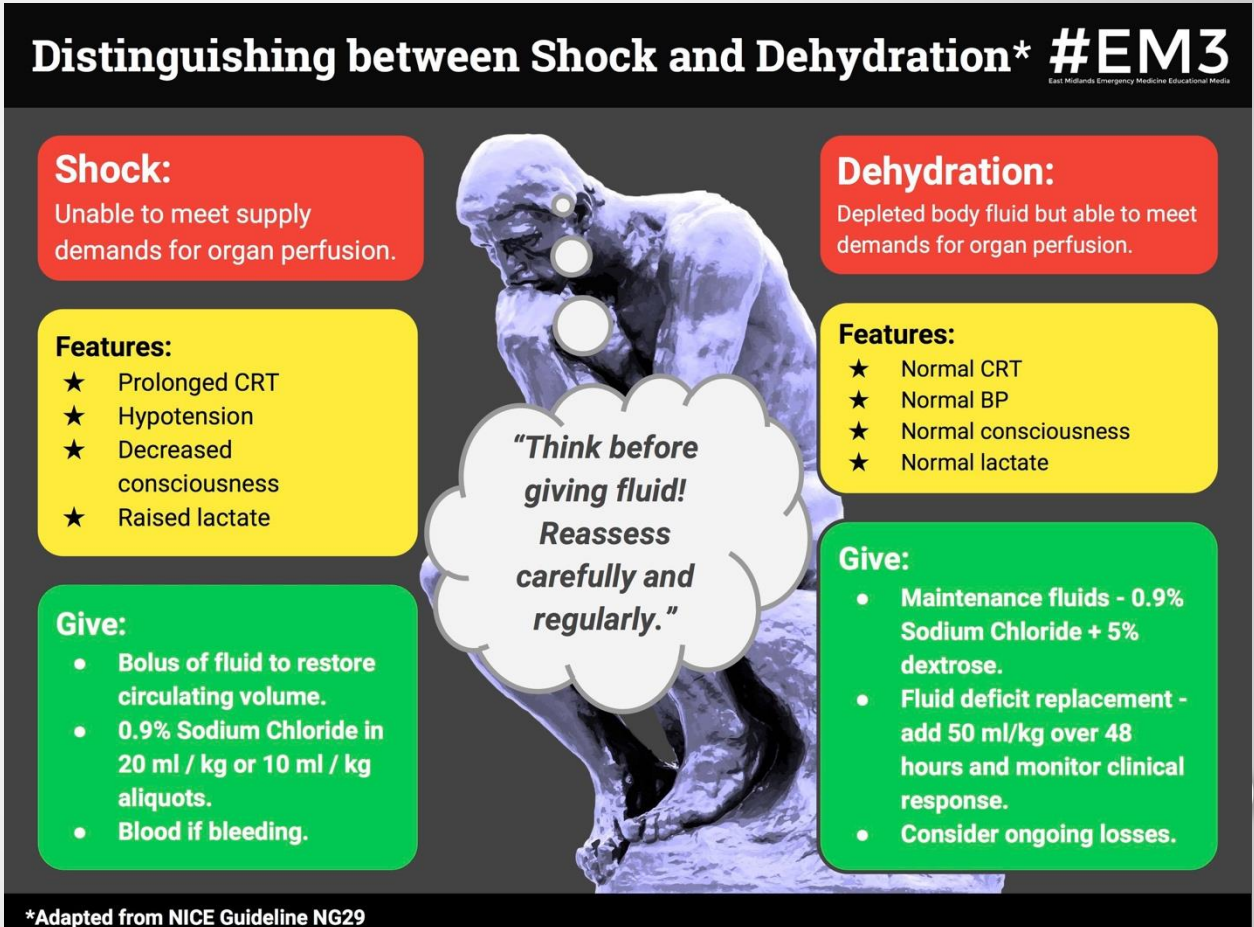
DEHYDRATION (DIARRHEA)

- Diarrhea plus any of the following:
  - Lethargy
  - Sunken eyes
  - Skin tenting
- Warm the child
- Treat shock if present
- Start oral fluids as soon as able



DISABILITY CONSIDERATIONS

Low blood glucose is a common cause of altered mental status in a sick child.

- When possible, check blood glucose with altered mental status.
- When not possible, give GLUCOSE .

Always check blood glucose with seizures/convulsions .

It may be difficult to determine if a small child is acting normally. Ask family/friends who know the child to provide this information.

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EXPOSURE CONSIDERATIONS

Infants/children have trouble maintaining temperature and can become hypothermic or hyperthermic quickly.

- Remove wet clothing and dry skin thoroughly.
- Provide skin-to-skin contact for infants.
- If concerned about hypothermia →Cover very small children's heads
- If concerned about hyperthermia →Unbundle tightly wrapped babies

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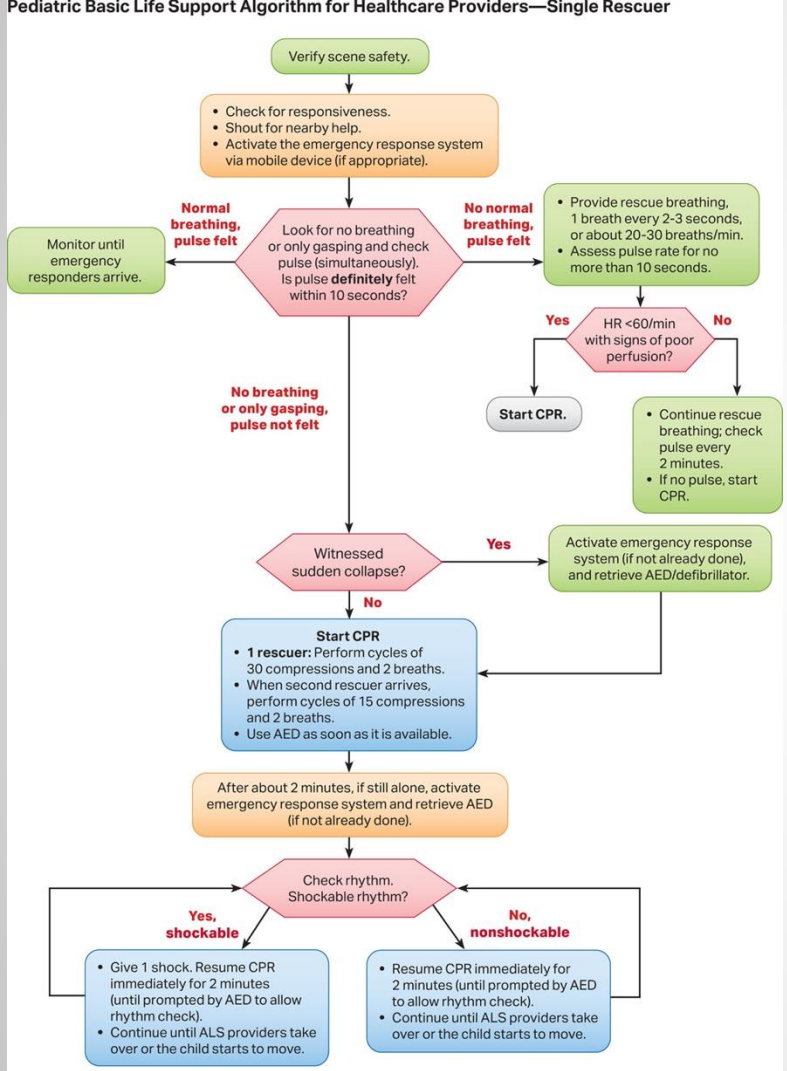
CARDIOPULMONARY ARREST

- Cardiac arrest is most commonly result of progressive respiratory failure or shock leading to severe hypoxia.
- Pediatrics: differences between 1-rescuer and 2-rescuer CPR.
- Shock if rhythm strip (or AED) indicates
- Utilize pediatric pads if available, or else 1 pad to the front and 1 to the back.
- Prompt and skillful response makes the difference between life and death.



CARDIAC ARREST ALGORITHM

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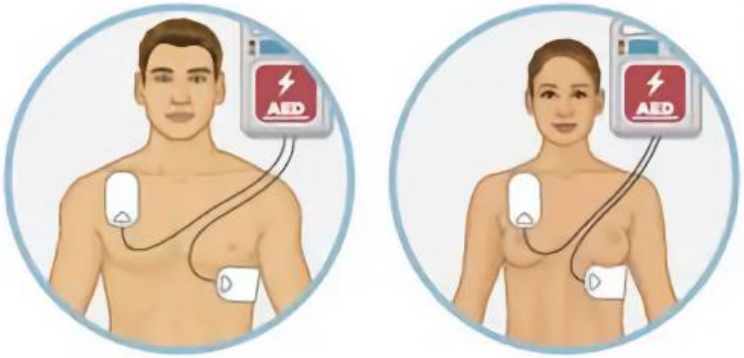
CARDIOPULMONARY ARREST

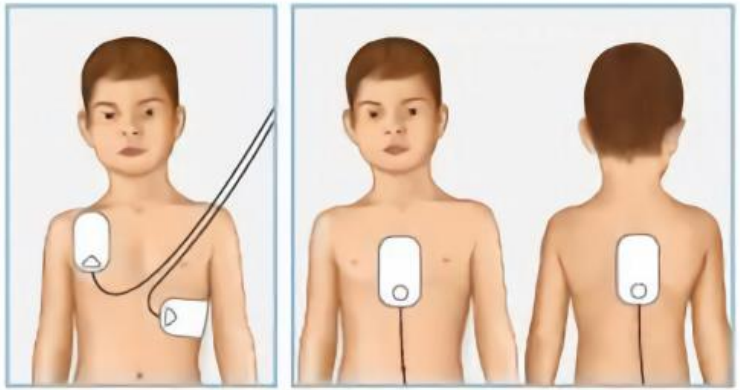
AED Pad Positions

Adult & Child > 8 years



Same pad position for both male/female adult and older child

Child < 8 years



Pad position for male/female child

Alternate position for male/female child if the pads would touch

COMMON PEDIATRIC EMERGENCIES

- Respiratory Distress
- Circulation/shock/dehydration
  - Injury Trauma
  - Infection/Sepsis
  - Underlying Conditions
- Seizure/Neurologic
- Allergic Reaction/Anaphylaxis
- Injury/Trauma

Image: https://www.unitekemt.com/blog/most-common-pediatric-emt-emergencies/.

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COMMON PEDIATRIC EMERGENCIES

- Managing critically ill children requires rapid identification, prioritization and urgent treatment.
- Emergency Triage Assessment and Treatment (ETAT) guidelines were developed to improve care for sick children.
- The following is a summary of these guidelines.

Image: https://www.unitekemt.com/blog/most-common-pediatric-emt-emergencies/.

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COMMON PEDIATRIC EMERGENCIES

- By systematizing the care provided in these situations, we can have earlier recognition of pediatric warning signs and better intervention and treatment of the most common pediatric emergencies.
- It is recommended to keep algorithms and treatment guidelines readily available in areas where health care workers can access them during care provision.
- Care providers should practice scenarios and regularly refresh their skills with re-training or recertification.

PEDIATRIC DANGER SIGNS

DANGER SIGNS in CHILDREN	
• Signs of airway obstruction (unable to swallow saliva/ drooling or stridor)	• Moves only when stimulated or no movement at all (AVPU other than "A")
• Increased breathing effort (fast breathing, nasal flaring , grunting, chest indrawing or retractions)	• Not feeding well, cannot drink or breastfeed or vomiting everything
• Cyanosis (blue colour of the skin, especially at the lips and fingertips)	• Seizures/convulsions
• Altered mental status (including lethargy or unusual sleepiness, confusion, disorientation)	• Low body temperature (hypothermia)

ESTIMATED WEIGHT in KILOGRAMS for CHILDREN 1–10 YEARS OLD:

[age in years + 4] x 2

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COMMON PEDIATRIC EMERGENCIES

THEN ASK ABOUT MAIN SYMPTOMS:
Does the child have cough or difficult breathing?

If yes, ask:

- For how long?

Look, listen, feel*:

- Count the breaths in one minute.
- Look for chest indrawing.
- Look and listen for stridor.
- Look and listen for wheezing.

CHILD MUST BE CALM

If wheezing with either fast breathing or chest indrawing:

Give a trial of rapid acting inhaled bronchodilator for up to three times 15-20 minutes apart. Count the breaths and look for chest indrawing again, and then classify.

If the child is:	***Fast breathing is:***
2 months up to 12 months	**50** breaths per minute or more
12 Months up to 5 years	**40** breaths per minute or more

Classify COUGH or DIFFICULT BREATHING

• Any general danger sign or • Stridor in calm child.	***Pink:*** **SEVERE PNEUMONIA OR VERY SEVERE DISEASE**	▪ **Give first dose of an appropriate antibiotic** ▪ **Refer URGENTLY to hospital****
• Chest indrawing or • Fast breathing.	***Yellow:*** **PNEUMONIA**	▪ **Give oral Amoxicillin for 5 days***** ▪ If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days****** ▪ If chest indrawing in HIV exposed/infected child, give first dose of amoxicillin and refer. ▪ Soothe the throat and relieve the cough with a safe remedy ▪ If coughing for more than 14 days or recurrent wheeze, refer for possible TB or asthma assessment ▪ Advise mother when to return immediately ▪ Follow-up in 3 days
• No signs of pneumonia or very severe disease.	***Green:*** **COUGH OR COLD**	▪ If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days****** ▪ Soothe the throat and relieve the cough with a safe remedy ▪ If coughing for more than 14 days or recurrent wheezing, refer for possible TB or asthma assessment ▪ Advise mother when to return immediately ▪ Follow-up in 5 days if not improving

**If pulse oximeter is available, determine oxygen saturation and refer if < 90%.*

*** If referral is not possible, manage the child as described in the pneumonia section of the national referral guidelines or as in WHO Pocket Book for hospital care for children.*

****Oral Amoxicillin for 3 days could be used in patients with fast breathing but no chest indrawing in low HIV settings.*

***** In settings where inhaled bronchodilator is not available, oral salbutamol may be tried but not recommended for treatement of severe acute wheeze.*

COMMON PEDIATRIC EMERGENCIES

Does the child have diarrhoea?

If yes, ask:

- For how long?
- Is there blood in the stool?

Look and feel:

- Look at the child's general condition. Is the child:
  - Lethargic or unconscious?
  - Restless and irritable?
- Look for sunken eyes.
- Offer the child fluid. Is the child:
  - Not able to drink or drinking poorly?
  - Drinking eagerly, thirsty?
- Pinch the skin of the abdomen. Does it go back:
  - Very slowly (longer than 2 seconds)?
  - Slowly?

Classify DIARRHOEA

for DEHYDRATION	Two of the following signs: • Lethargic or unconscious • Sunken eyes • Not able to drink or drinking poorly • Skin pinch goes back very slowly.	***Pink:*** **SEVERE DEHYDRATION**	▪ If child has no other severe classification: ◦ Give fluid for severe dehydration (Plan C) OR **If child also has another severe classification:** ◦ **Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way** ◦ **Advise the mother to continue breastfeeding** ▪ **If child is 2 years or older and there is cholera in your area, give antibiotic for cholera**
	Two of the following signs: • Restless, irritable • Sunken eyes • Drinks eagerly, thirsty • Skin pinch goes back slowly.	***Yellow:*** **SOME DEHYDRATION**	▪ Give fluid, zinc supplements, and food for some dehydration (Plan B) ▪ **If child also has a severe classification:** ◦ **Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way** ◦ **Advise the mother to continue breastfeeding** ▪ Advise mother when to return immediately ▪ Follow-up in 5 days if not improving
	Not enough signs to classify as some or severe dehydration.	***Green:*** **NO DEHYDRATION**	▪ Give fluid, zinc supplements, and food to treat diarrhoea at home (Plan A) ▪ Advise mother when to return immediately ▪ Follow-up in 5 days if not improving
and if diarrhoea 14 days or more	• Dehydration present.	***Pink:*** **SEVERE PERSISTENT DIARRHOEA**	▪ Treat dehydration before referral unless the child has another severe classification ▪ Refer to hospital
	• No dehydration.	***Yellow:*** **PERSISTENT DIARRHOEA**	▪ Advise the mother on feeding a child who has PERSISTENT DIARRHOEA ▪ Give multivitamins and minerals (including zinc) for 14 days ▪ Follow-up in 5 days
and if blood in stool	• Blood in the stool.	***Yellow:*** **DYSENTERY**	▪ **Give ciprofloxacin for 3 days** ▪ Follow-up in 3 days

COMMON PEDIATRIC EMERGENCIES

Does the child have fever?

(by history or feels hot or temperature 37.5°C* or above)

If yes:
Decide Malaria Risk: high or low

Then ask:
- For how long?
- If more than 7 days, has fever been present every day?
- Has the child had measles within the last 3 months?

Look and feel:
- Look or feel for stiff neck.
- Look for runny nose.
- Look for any bacterial cause of fever**.
- Look for signs of MEASLES.
  - Generalized rash and
  - One of these: cough, runny nose, or red eyes.

Do a malaria test: If NO severe classification***
- In all fever cases if High malaria risk.
- In Low malaria risk if no obvious cause of fever present.

Classify FEVER

High or Low Malaria Risk	• Any general danger sign or • Stiff neck.	***Pink:*** **VERY SEVERE FEBRILE DISEASE**	▪ **Give first dose of artesunate or quinine for severe malaria** ▪ **Give first dose of an appropriate antibiotic** ▪ **Treat the child to prevent low blood sugar** ▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ **Refer URGENTLY to hospital**
	• Malaria test POSITIVE.	***Yellow:*** **MALARIA**	▪ **Give recommended first line oral antimalarial** ▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ Give appropriate antibiotic treatment for an identified bacterial cause of fever ▪ Advise mother when to return immediately ▪ Follow-up in 3 days if fever persists ▪ If fever is present every day for more than 7 days, refer for assessment
	• Malaria test NEGATIVE • Other cause of fever PRESENT.	***Green:*** **FEVER: NO MALARIA**	▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ **Give appropriate antibiotic treatment** for an identified bacterial cause of fever ▪ Advise mother when to return immediately ▪ Follow-up in 3 days if fever persists ▪ If fever is present every day for more than 7 days, refer for assessment
No Malaria Risk and No Travel to Malaria Risk Area	• Any general danger sign • Stiff neck.	***Pink:*** **VERY SEVERE FEBRILE DISEASE**	▪ **Give first dose of an appropriate antibiotic.** ▪ **Treat the child to prevent low blood sugar.** ▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above).** ▪ **Refer URGENTLY to hospital.**
	• No general danger signs • No stiff neck.	***Green:*** **FEVER**	▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ **Give appropriate antibiotic treatment** for any identified bacterial cause of fever ▪ Advise mother when to return immediately ▪ Follow-up in 2 days if fever persists ▪ If fever is present every day for more than 7 days, refer for assessment

If the child has measles now or within the last 3 months:
- Look for mouth ulcers. Are they deep and extensive?
- Look for pus draining from the eye.
- Look for clouding of the cornea.

If MEASLES now or within last 3 months, Classify

• Any general danger sign or • Clouding of cornea or • Deep or extensive mouth ulcers.	***Pink:*** **SEVERE COMPLICATED MEASLES****	▪ **Give Vitamin A treatment** ▪ **Give first dose of an appropriate antibiotic** ▪ **If clouding of the cornea or pus draining from the eye, apply tetracycline eye ointment** ▪ **Refer URGENTLY to hospital**
• Pus draining from the eye or • Mouth ulcers.	***Yellow:*** **MEASLES WITH EYE OR MOUTH COMPLICATIONS****	▪ **Give Vitamin A treatment** ▪ **If pus draining from the eye, treat eye infection with tetracycline eye ointment** ▪ If mouth ulcers, treat with gentian violet ▪ Follow-up in 3 days
• Measles now or within the last 3 months.	***Green:*** **MEASLES**	▪ **Give Vitamin A treatment**

* These temperatures are based on axillary temperature. Rectal temperature readings are approximately 0.5°C higher.

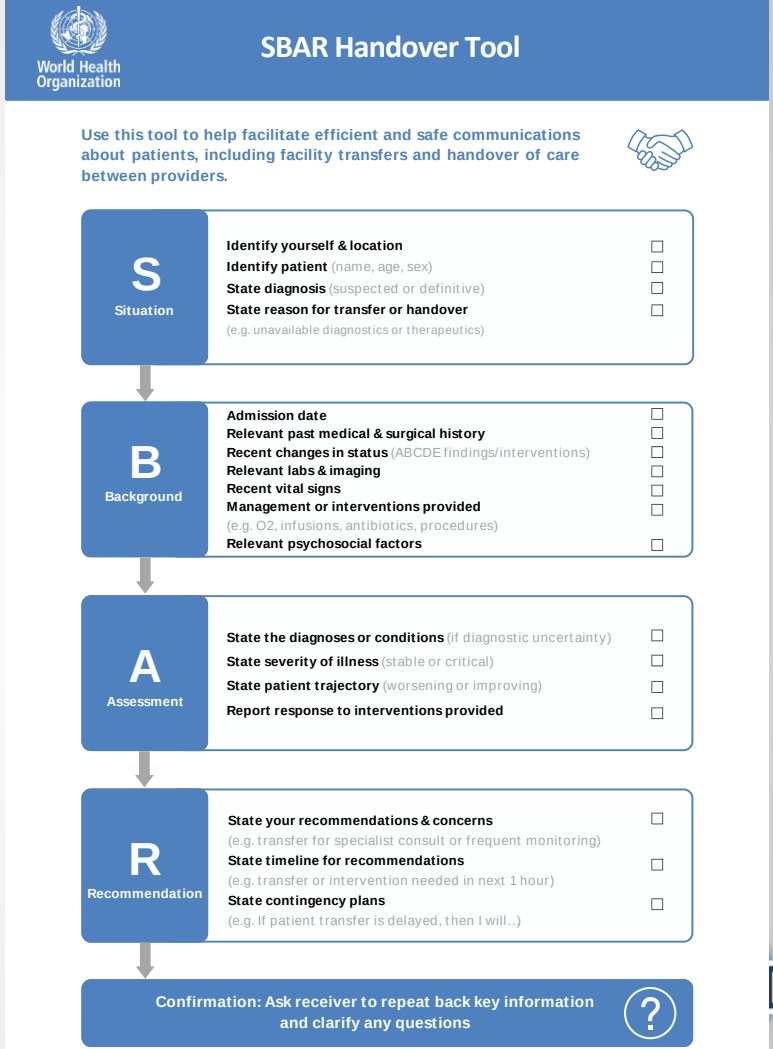
**Look for local tenderness; oral sores; refusal to use a limb; hot tender swelling; red tender skin or boils; lower abdominal pain or pain on passing urine in older children.

*** If no malaria test available: High malaria risk - classify as MALARIA; Low malaria risk AND NO obvious cause of fever - classify as MALARIA.

**** *Other important complications of measles - pneumonia, stridor, diarrhoea, ear infection, and acute malnutrition - are classified in other tables.*

PLAN FOR AND SYSTEMATIZE CARE

- Planning for transfer of care to hospital, inpatient or intensive care unit, or to higher level care (with specific surgical intervention) if available is always a consideration.
- Basic Emergency Course has resources for patient transfer with SBAR



World Health Organization

SBAR Handover Tool

Use this tool to help facilitate efficient and safe communications about patients, including facility transfers and handover of care between providers.

S Situation

- **Identify yourself & location** ☐
- **Identify patient** (name, age, sex) ☐
- **State diagnosis** (suspected or definitive) ☐
- **State reason for transfer or handover** ☐
  (e.g. unavailable diagnostics or therapeutics)

B Background

- **Admission date** ☐
- **Relevant past medical & surgical history** ☐
- **Recent changes in status** (ABCDE findings/interventions) ☐
- **Relevant labs & imaging** ☐
- **Recent vital signs** ☐
- **Management or interventions provided** ☐
  (e.g. O2, infusions, antibiotics, procedures)
- **Relevant psychosocial factors** ☐

A Assessment

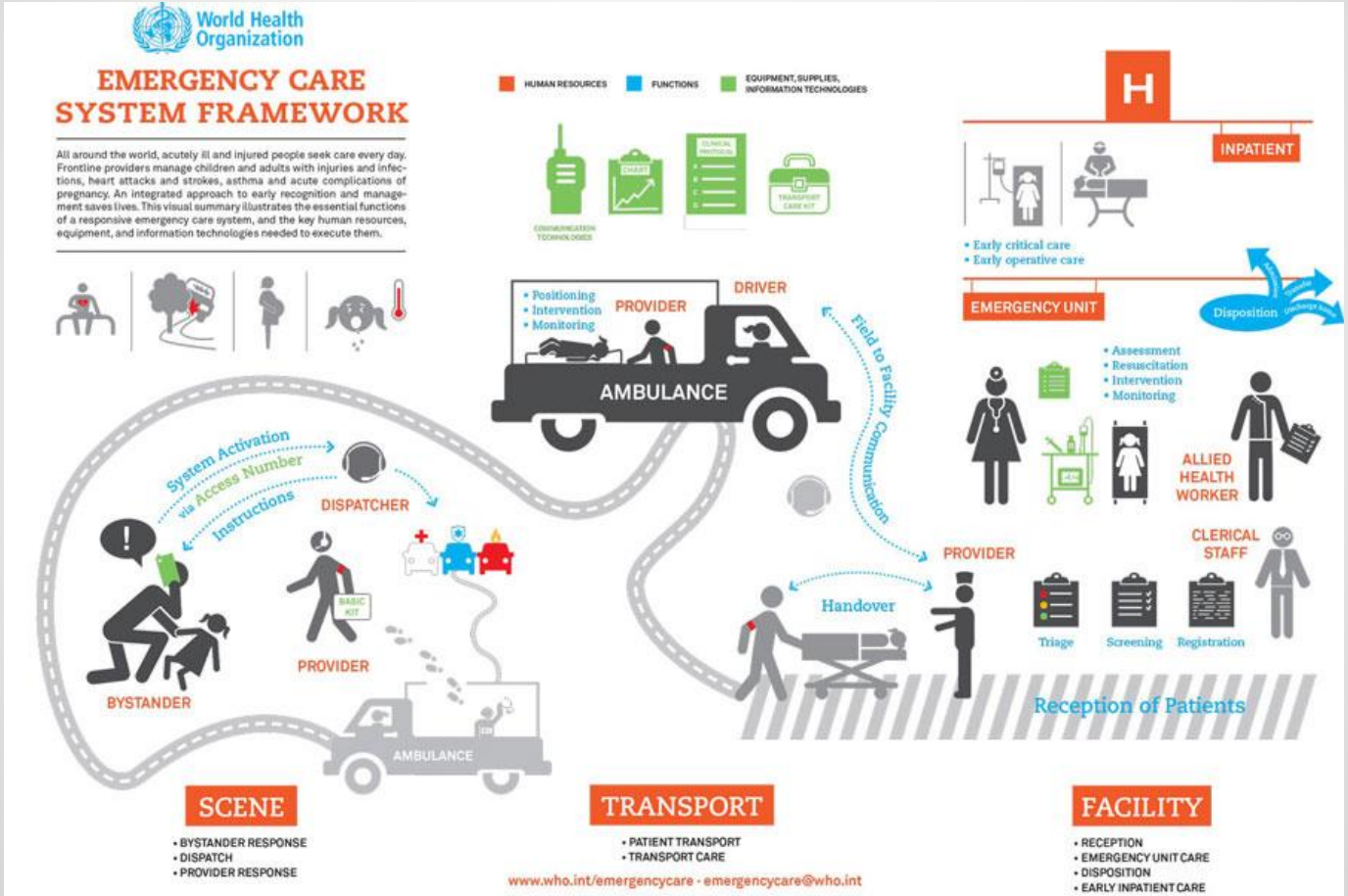
- **State the diagnoses or conditions** (if diagnostic uncertainty) ☐
- **State severity of illness** (stable or critical) ☐
- **State patient trajectory** (worsening or improving) ☐
- **Report response to interventions provided** ☐

R Recommendation

- **State your recommendations & concerns** ☐
  (e.g. transfer for specialist consult or frequent monitoring)
- **State timeline for recommendations** ☐
  (e.g. transfer or intervention needed in next 1 hour)
- **State contingency plans** ☐
  (e.g. If patient transfer is delayed, then I will...)

Confirmation: Ask receiver to repeat back key information and clarify any questions

PLAN FOR AND SYSTEMATIZE CARE



INMED

PLAN FOR AND SYSTEMATIZE CARE

- Recurring Emergency Care training and updates helps to keep skills fresh and healthcare workers familiar with care processes, equipment, and resources.
- Look into the current health system and see what assets and resources are available and how collaboration can improve emergency care for all patients.
- Resources and care to train health care workers (like the Basic Emergency Care course) can increase the workforce of those prepared to care in an emergency and make a big difference in those scenarios.

PLAN FOR AND SYSTEMATIZE CARE

The impact of Global Emergency Care

Each Emergency Care Practitioner (ECP) trained will care for over 40,000 patients over their career.

WHY WE NEED YOUR HELP

Sub - Saharan Africa has an estimated shortage of 420,000 physicians*

Less than 20% of the hospitals in Sub-saharan Africa have the ability to deliver emergency care.

The cost to train an ECP over 2 years is $7,000 - just $0.18 per patient treated over his/her lifetime

GEC ECPs are currently treating more than 4,000 children and 20,000 total patients each year for acute illness or injury

We project emergency care saves 1 additional life among every 20 children sick enough to be admitted to the hospital, based on pilot site data.

Life Saving Medical Care for all

*Based on WHO recommendation for physician to population ratio (2015)

INMED

THANK YOU

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- Where ?
- What?
- How?
- When?