

UPDATED  
GUIDELINE

# Paediatric emergency triage, assessment and treatment

Care of critically ill children



World Health  
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# Abbreviations and acronyms

AVPU	Alert (A), responds to your Voice (V), responds to Pain (P), Unresponsive (U)
bw	body weight
CI	confidence interval
CNS	central nervous system
CT	computerized tomography
EEG	electroencephalography
ETAT	emergency triage, assessment and treatment
FEAST	fluid expansion as supportive therapy
FiO <sub>2</sub>	fraction of inspired oxygen
GDG	Guideline Development Group
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HFNC	high-flow nasal cannula
IM	intramuscular
IV	intravenous
MCA	Maternal, Newborn, Child and Adolescent Health (WHO department of)
MRI	magnetic resonance imaging
PaO <sub>2</sub>	partial pressure of oxygen
PICO	population, intervention, control, outcome
RCT	randomized controlled trial
RR	relative risk
SpO <sub>2</sub>	peripheral capillary oxygen saturation

# Definitions

**Acute symptomatic seizure:** seizures that occur in close temporal relation to a brain insult such as trauma, infection or metabolic or structural abnormalities

**Coma:** unconscious state as defined on the AVPU scale: Alert (A), responds to your Voice (V), responds to Pain (P), Unresponsive (U)

**Convulsion:** see “Seizure”

**Critical illness:** any severe problem with the airway, breathing or circulation, or acute deterioration of conscious state; includes apnoea, upper airway obstruction, hypoxaemia, central cyanosis, severe respiratory distress, total inability to feed, shock, severe dehydration, active bleeding requiring transfusion, unconsciousness or seizures

**Cyanosis:** a bluish discoloration of skin and mucous membranes due to excessive concentration of reduced haemoglobin in the blood

**Emergency signs (as described in this guideline):**

- obstructed or absent breathing
- severe respiratory distress
- central cyanosis
- signs of shock (defined as cold extremities with capillary refill time > 3 s and weak, fast pulse)
- coma (or seriously reduced level of consciousness)
- seizures
- signs of severe dehydration in a child with diarrhoea with any two of the following signs: lethargy or unconsciousness, sunken eyes, very slow return of skin after pinching

**Febrile seizure:** a seizure occurring in childhood after 1 month of age associated with fever not caused by an infection of the central nervous system (CNS), without previous neonatal seizures or a previous unprovoked seizure and not meeting the criteria for other acute symptomatic seizures (International League against Epilepsy, 1993)

**Hyperoxaemia:** high blood oxygen tension or increased oxygen content of the blood

**Hypoxaemia:** abnormally low level of oxygen in the blood [peripheral capillary oxygen saturation (SpO<sub>2</sub>) < 90%]; more specifically, oxygen deficiency in arterial blood

**Hypoxia:** diminished availability of oxygen to body tissues

**Neonate:** an infant aged 0–28 days

**Seizure:** transient signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain with a clear start and finish (International League against Epilepsy, 2015). Seizures can present as a wide array of physical changes or changes in consciousness, of varying severity. For the purposes of this guideline, the term “seizure” is used to refer only to convulsive seizures and is equivalent to the term “convulsion”.

**Severe anaemia:** erythrocyte volume fraction (haematocrit) < 15 or haemoglobin < 5 g/dL

**Severe acute malnutrition:** in infants and children aged 6–59 months, weight-for-height  $< -3$  Z-score of the median of the WHO growth standards, or clinical signs of bilateral oedema of nutritional origin, even if other measures are above specified cut-off values (WHO, 2009a)

**Severe dehydration:** two or more of the following signs present: lethargy or unconsciousness, sunken eyes, unable to drink or drinks poorly, skin returns very slowly after pinching ( $\geq 2$  s)

**Severely impaired circulation:** cold extremities *or* a weak and fast pulse *or* capillary refill  $> 3$  s

**Shock:** cold extremities *with* capillary refill  $> 3$  s *and* a weak, fast pulse (all signs must be present)

**SpO<sub>2</sub>:** peripheral capillary oxygen saturation, usually measured with a transcutaneous monitor

Status epilepticus: a condition of abnormally prolonged seizures. For generalized convulsions, the operational definition is  $\geq 5$  min of continuous seizures or two or more discrete seizures without complete recovery of consciousness in between, with  $\geq 30$  min of seizure activity resulting in long-term neurological sequelae (International League Against Epilepsy, 2015).

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