



PAEDIATRICS

Pediatric & Neonatal Emergencies

Stay calm and systematic when a child is critically ill.

7 days

live-online · recorded

Fee PKR 3,000

Coming soon

Day 1 Recognize the Crashing Child & Newborn

Resuscitation & shock · part 1 of 2 · 2 hours

You'll master

- The Pediatric Assessment Triangle & ABCDE — spot a sick child in under 60 seconds, at any age
- The 2025 PALS Systematic Approach Algorithm — initial impression, primary and secondary assessment, in the exact sequence examiners expect
- 2025 AHA/AAP Pediatric BLS/CPR standards — compression rate, depth, ratios for one- vs. two-rescuer CPR
- Newborn resuscitation per NRP, 9th Edition (2025) — cord management, PPV, the MR SOPA correction sequence
- Emergency vascular access — peripheral IV vs. intraosseous (IO): landmarks by age, needle sizing, when to switch
- Choosing correct equipment sizes fast — ET tube, laryngoscope blade, IO needle — without a length-based resuscitation tape
- Naloxone for suspected opioid-associated emergencies in children — recognition and weight-based dosing
- The pre-arrest warning signs most doctors miss — before the monitor tells you

Signature blueprints

The Golden Minute — Newborn Resuscitation (NRP, 9th Ed.)

1. 0–30 sec: Warm · position · dry & stimulate → assess breathing and heart rate
2. HR <100 or apnoeic/gasping → begin PPV: 30–60 breaths/min; start in air (21%) at ≥35 weeks, 21–30% O₂ at 32–34 weeks, ≥30% below 32 weeks; SpO₂-guided
3. No response in 30 sec → run the MR SOPA correction sequence before anything else
4. HR <60 after effective PPV → chest compressions 3:1 with 100% O₂
5. HR <60 after 60 sec coordinated CPR → Adrenaline 0.01–0.03 mg/kg IV/IO (1:10,000) — e.g. 0.3 mL for a 3 kg newborn
6. Volume expansion for shock/blood loss → Normal Saline 10 mL/kg IV/IO over 5–10 min

The Systematic Approach — Pediatric BLS/CPR (2025 AHA/AAP)

1. Initial impression (5 sec, from the doorway): appearance, work of breathing, circulation/color — decide sick vs. not sick before you touch the child
2. No breathing/only gasping + no pulse felt in 10 sec → start CPR immediately: 30:2 (one rescuer) or 15:2 (two rescuers)
3. Compressions: rate 100–120/min, depth ≥ $\frac{1}{3}$ AP chest diameter, allow full recoil, swap the compressor every 2 min
4. IO access if IV fails within 2 attempts/90 sec — proximal tibia (2 cm below the tuberosity) is the fastest, most reliable site at any age
5. Add an advanced airway only once compressions and ventilation are well-established — never let intubation interrupt compressions

Day 2 Shock, Anaphylaxis & Fluid Resuscitation

Resuscitation & shock · part 2 of 2 · 2 hours

You'll master

- Compensated vs. decompensated shock — why a “normal” BP can still mean shock in a child
- The four shock subtypes at the bedside: hypovolemic, septic/distributive, cardiogenic, obstructive
- Cold shock vs. warm shock — why the vasopressor choice differs, and what happens if you get it backwards
- 2025 PALS-aligned fluid resuscitation — physiology-directed boluses, reassessing after every dose
- Point-of-care markers that actually predict fluid responsiveness — and the ones that don't
- Anaphylaxis — recognition and the first 10 minutes
- Massive transfusion principles in pediatric hemorrhagic shock
- Neonatal shock — sepsis vs. HIE vs. occult blood loss

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Anaphylaxis — First-Hour Stabilization Protocol

1. Adrenaline 0.01 mg/kg IM (max 0.5 mg), 1:1000, anterolateral thigh — e.g. 0.12 mL for a 12 kg child; repeat every 5–15 min
2. High-flow O₂ + two IV lines + supine with legs raised (unless vomiting or breathless)
3. Fluid-refractory hypotension → Normal Saline 20 mL/kg bolus, repeat up to 60 mL/kg
4. Second-line only — never instead of adrenaline: Hydrocortisone (Solu-Cortef®) 4 mg/kg IV + an antihistamine
5. Bronchospasm → nebulized Salbutamol (Ventolin® Respirator Solution)
6. Observe a minimum of 6–8 hours — warn every family about biphasic reactions before discharge

Cold Shock vs. Warm Shock — The Vasopressor Decision

1. Cold shock (narrow pulse pressure, weak pulses, cap refill >3 sec, mottled) → Adrenaline infusion 0.05–0.3 mcg/kg/min, titrate to perfusion
2. Warm shock (bounding pulses, wide pulse pressure, flash cap refill — classic early septic shock) → Noradrenaline infusion 0.05–0.3 mcg/kg/min
3. Start peripherally through a large vein if central access isn't ready — don't delay vasoactive support waiting for a line
4. Reassess perfusion, lactate, and urine output every 15 min — the picture can flip from warm to cold shock as the child decompensates
5. Fluid- and catecholamine-resistant shock → consider hydrocortisone for possible relative adrenal insufficiency, and escalate to PICU

Day 3 Respiratory Emergencies: Newborn to Adolescent

Respiratory emergencies · 2 hours

You'll master

- Newborn respiratory distress at a glance — RDS vs. TTN vs. MAS vs. PPHN in five bedside questions
- CPAP basics — when it's enough, and when it isn't
- Acute severe asthma / status asthmaticus — severity staging and the treatment stepladder
- The Westley Croup Score — and why every child gets a steroid regardless of severity
- Bronchiolitis — what actually changes outcome, and what's just tradition
- High-flow nasal cannula — what the evidence actually shows, and where it fits
- Foreign body aspiration — red flags, positioning, and when to intervene
- Pediatric NIV/CPAP failure criteria — recognizing when it's time to intubate

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Status Asthmaticus — The Treatment Stepladder

1. Salbutamol (Ventolin®) 0.15 mg/kg/dose (min 2.5 mg) nebulized with O₂, back-to-back ×3 in the first hour
2. + Ipratropium bromide (Atrovent®) 250–500 mcg nebulized with each of the first 3 doses
3. Early steroid, don't delay — Hydrocortisone (Solu-Cortef®) 4 mg/kg IV or Dexamethasone (Decadron®) 0.6 mg/kg
4. Severe / impending failure → MgSO₄ 50 mg/kg IV over 20 min (max 2 g)
5. Still failing → IV Salbutamol infusion + senior/HDU review — silent chest and exhaustion mean escalate now

Croup — The Westley Score & Treatment Algorithm

1. Score stridor, retractions, air entry, cyanosis, and consciousness — mild (≤ 2), moderate (3–5), severe (6–11), impending respiratory failure (≥ 12)
2. Every child, any severity → Dexamethasone (Decadron®) 0.15–0.6 mg/kg PO/IM/IV, single dose — cuts return visits and admissions
3. Moderate–severe → add nebulized Adrenaline 0.5 mL/kg of 1:1000 (max 5 mL); observe 2–4 hours after — rebound is real
4. Severe/impending failure → heliox trial, prepare for a smaller-than-expected ET tube, senior anaesthesia input early
5. Discharge only after stridor-free at rest for the full observation window — not just “looking better”

Day 4 Neurological Emergencies & The Unconscious Child

Neurological emergencies · 2 hours

You'll master

- Neonatal seizures vs. jitteriness — the bedside discriminator examiners ask every year
- GCS and AVPU in children — the modified infant scoring
- Status epilepticus — the timed drug ladder, minute by minute
- Recognizing raised ICP and the herniation red flags
- Raised ICP first-hour management — positioning, fluids, and when to reach for hyperosmolar therapy
- Meningitis — when to do an LP, when NOT to, and antibiotic timing that shouldn't wait for it
- Simple vs. complex febrile seizures — and when you actually need to worry
- Non-accidental head injury — the red flags that should change your differential

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Status Epilepticus — The Timed Drug Ladder

1. 0–5 min: ABC, O₂, immediate glucose check — treat hypoglycemia first with D10W 2 mL/kg IV
2. 5 min: Midazolam (Dormicum®) 0.15 mg/kg IV/IO, max 10 mg (2.25 mg for a 15 kg child) — or, if no access, 0.3 mg/kg buccal/intranasal, max 10 mg (4.5 mg for a 15 kg child)
3. 10 min, still fitting → repeat the benzodiazepine once: Diazepam (Valium®) 0.3 mg/kg IV, max 10 mg
4. 20 min → Phenytoin 20 mg/kg IV loading (max 2 g) over at least 20 min (no faster than 1 mg/kg/min) with cardiac monitoring, or Valproate 40 mg/kg IV
5. 40 min, refractory → Phenobarbitone 20 mg/kg IV, call for RSI and ICU — keep hunting the cause in parallel

Raised Intracranial Pressure — The First-Hour Algorithm

1. Head up 30°, head and neck midline — simple positioning that measurably lowers ICP
2. Maintain normotension and normothermia — treat fever aggressively; avoid hypotonic fluids, run isotonic (0.9% NS) maintenance
3. Brief hyperventilation (target PaCO₂ 30–35 mmHg) only as a short bridge — never sustained therapy
4. Signs of herniation → Mannitol 0.5–1 g/kg IV over 20 min, or 3% Hypertonic Saline 3–5 mL/kg over 10–20 min
5. Urgent CT + neurosurgical consult in parallel — don't let imaging delay the first dose of hyperosmolar therapy

Day 5 Cardiac, Renal & Metabolic Emergencies

Cardiac, renal & metabolic emergencies · 2 hours

You'll master

- The duct-dependent neonate — recognizing critical CHD before collapse, and the prostaglandin save
- Recognizing critical CHD before the pulse oximeter does — the pre-ductal/post-ductal saturation trick
- Pediatric SVT vs. sinus tachycardia — the discriminator table
- 2025 PALS bradycardia/tachycardia algorithms — vagal maneuvers → adenosine → synchronized cardioversion
- DKA in children — the ISPAD 2022-aligned fluid and insulin protocol, and how cerebral edema actually happens
- Hyperkalemia's ECG progression — and the stabilize-shift-eliminate sequence
- Recognizing pediatric AKI early — pre-renal, renal, and post-renal at the bedside
- Cerebral edema in DKA — the warning signs that mean stop and reassess immediately

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SVT, Stable Narrow-Complex — The Algorithm

1. Vagal maneuvers first — ice-to-face in infants, Valsalva/carotid massage in the older child
2. Adenosine (Adozin®) 0.1 mg/kg rapid IV push (max 6 mg) — fastest available line + immediate rapid saline flush
3. No response → repeat at 0.2 mg/kg (max 12 mg)
4. Unstable or no IV access → synchronized cardioversion 0.5–1 J/kg, then 2 J/kg
5. Third-line, specialist input → Amiodarone (Cordarone®) 5 mg/kg IV over 20–60 min

Diabetic Ketoacidosis — The Complete Fluid & Insulin Protocol

1. Grade severity by pH/bicarbonate: mild (pH 7.2–7.3), moderate (7.1–7.2), severe (<7.1) — sets your urgency, not just your labs
2. Shock → 0.9% saline 20 mL/kg as fast as possible, reassessing after each bolus and repeating as needed; volume-depleted but not in shock → 0.9% saline 10–20 mL/kg over 20–30 min — then replace the remaining deficit plus maintenance evenly over 24–48 hours
3. Start insulin infusion 0.05–0.1 U/kg/hr (Humulin® R / Actrapid® HM) a full hour after fluids begin — never as a bolus, never before fluids
4. Add dextrose once glucose falls below ≈250–300 mg/dL — keep the insulin running, don't stop it to “fix” the glucose
5. Add K⁺ to fluids once the level is known and urine output is confirmed, even if initially high-normal — insulin will drop it fast
6. Cerebral edema suspected → Mannitol 0.5–1 g/kg IV over 10–15 min (or 3% saline 2.5–5 mL/kg over 10–15 min), slow the fluid rate, call PICU immediately

Day 6 Infections, Toxicology & Environmental Emergencies

Infections, toxicology & other emergencies · 2 hours

You'll master

- Pediatric sepsis under the brand-new 2026 Surviving Sepsis Campaign (Pediatric) framework
- Dengue's three phases — febrile, critical, recovery — and the fluid-management trap in each
- WHO dengue classification, warning signs, and the fluid-leak-phase trap
- Meningococemia and the non-blanching rash red flags
- The sick infant with fever and no source — which cultures, which empirical antibiotics, and when to hold off
- Organophosphate poisoning and the atropinization endpoint
- Common Pakistani pediatric poisonings, corrosive ingestion, and burns — first-hour priorities
- Snake bite in Pakistani children — when antivenom is indicated, and when it isn't

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Pediatric Septic Shock — 2026 Surviving Sepsis-Aligned Bundle

1. 0–5 min: recognize (altered mental status + poor perfusion/hypotension) → high-flow O₂, two points of IV/IO access
2. Fluid bolus 10 mL/kg crystalloid over 10–20 min — reassess after every bolus; stop at signs of overload, not a fixed volume
3. Within 60 min, after cultures → Ceftriaxone (Getofin® / Cefxone®) 80–100 mg/kg/day IV ± an aminoglycoside if resistant-organism risk
4. Fluid-refractory shock → start a vasoactive infusion (adrenaline or noradrenaline) early, rather than repeated boluses
5. Source control + reassess every 15 min: HR, perfusion, mental status, and lactate if available

Organophosphate Poisoning — The Complete Management Algorithm

1. Decontaminate first — remove clothing, wash skin, protect yourself with gloves/apron; OP absorbs through intact skin
2. Airway and breathing take priority — secretions may need repeated suctioning; intubate early if respiratory failure develops
3. Atropine 0.02–0.05 mg/kg IV every 5 min, doubling the dose each time until atropinized: clear chest on auscultation, HR above 80–100 depending on age, systolic BP >80 mmHg (age-appropriate), dry axillae and pupils no longer pinpoint — that's atropinization, not a fixed dose
4. Pralidoxime (2-PAM) 25–50 mg/kg IV over 30 min, then repeat/infuse — most effective within 24–48 hr of exposure
5. Watch for intermediate syndrome at 24–96 hours — proximal muscle weakness and respiratory failure that can follow apparent recovery

Day 7 Procedures, Mock Codes & The Exam-Cracking Masterclass

Practical integration & exam mastery · bonus day · 2 hours

You'll master

- Core procedural skills every on-call doctor needs — IO insertion, bag-mask technique, DC shock energy dosing
- The complete Pediatric Cardiac Arrest Algorithm (2025 AHA/AAP PALS) — shockable and non-shockable pathways
- Rapid sequence intubation for the ward/ER doctor — preparation, drugs, and the “killer confirmation”
- Live mock-code walkthroughs — real scenarios, audience-driven decisions, real-time correction
- Post-resuscitation care — the first hour after ROSC that determines the outcome
- FCPS-II / MO-viva exam technique — how examiners actually score a resuscitation answer
- Building a structured answer for any emergency SEQ, in under 30 seconds of thinking time
- Your own weight-based emergency drug-dose cheat-sheet — built live, ready to save to your phone

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Pediatric Cardiac Arrest — 2025 AHA/AAP PALS Algorithm

1. High-quality CPR throughout: rate 100–120/min, depth $\geq \frac{1}{3}$ AP chest diameter, compression fraction >60%, pauses <10 sec
2. Shockable, VF/pulseless VT → defibrillate 2 J/kg → 4 J/kg → ≥ 4 J/kg (max 10 J/kg); Adrenaline after the 2nd shock; Amiodarone (Cordarone®) 5 mg/kg after the 3rd
3. Non-shockable, PEA/asystole → Adrenaline 0.01 mg/kg IV/IO (0.1 mL/kg of 1:10,000) every 3–5 min, started early
4. Post-ROSC → target BP above the 10th centile for age, avoid hyperoxia and hyperthermia, hunt the 4 H's and 4 T's

Rapid Sequence Intubation — The Ward/ER Doctor's Sequence

1. Prepare with SOAP-ME — suction, oxygen, airway kit sized correctly, drugs drawn up, monitoring on, equipment for a failed airway ready
2. Pre-oxygenate with 100% O₂ for 3 minutes (or 8 vital-capacity breaths) before touching the airway
3. Induction: Ketamine 1–2 mg/kg IV (favoured in shock/asthma) or Midazolam 0.1–0.3 mg/kg IV
4. Paralysis: Rocuronium 1–1.2 mg/kg IV (avoids succinylcholine's hyperkalemia risk) or Succinylcholine 1–2 mg/kg IV if no contraindication
5. Confirm placement with waveform capnography — the one confirmation that doesn't lie; keep a supraglottic airway ready as backup