www.emsnotes.com - By Forrest Munden

EMT Medical Study Guide

2025 Edition - NREMT & National EMS Education Standards Aligned
Cardiac - Respiratory - Diabetic - Stroke - Overdose - Allergic Reactions

Medical Emergencies = ~25-30% of NREMT EMT cognitive exam
Integrates into patient assessment, treatment, and transport stations

Core EMT Medical Principle (2025):
Most medical patients are sick but stable until proven otherwise—your job is to recognize when "stable" turns into "crashing," intervene with your limited tools, and get them to definitive care before they cross that line.

Always think: What is the most likely life threat right now, and what can I fix in the next 5 minutes?

EMT Scope Reminder

EMT CAN: High-flow O_2, oral glucose, assisted inhalers (albuterol), epinephrine auto-injector, aspirin, nitroglycerin assist, naloxone, bleeding control, positioning, rapid transport
EMT CANNOT: IV/IO, advanced cardiac meds, CPAP/BiPAP (most protocols) - *Check local protocol!*

Section 1: Medical Patient Assessment Framework

SAMPLE History

- **S**igns/Symptoms – What do you see? What do they complain of?
- **A**llergies – Meds, foods, environmental?
- **M**edications – Current prescriptions, recent changes?
- **P**ast medical history – Chronic conditions, surgeries?
- **L**ast oral intake – Food/drink, when?
- **E**vents leading up – What happened before symptoms?

OPQRST for Chief Complaint

- **O**nset – Sudden or gradual?
- **P**rovocation/Palliation – What makes it worse/better?
- **Q**uality – Sharp, dull, pressure?
- **R**egion/Radiation – Where? Does it move?
- **S**everity – 0-10 scale
- **T**ime – How long? Constant or intermittent?

Vital Signs Baseline (Adult)

- **Pulse:** 60-100 bpm
- **RR:** 12-20 breaths/min
- **BP:** >90 systolic generally adequate
- **SpO_2:** ≥94% on room air or titrated O_2
- **Blood glucose:** 70-110 mg/dL (alert patient)

Section 2: High-Yield Medical Emergencies & EMT Management

Emergency	Key Signs/Symptoms	EMT Priority Actions	Red Flags / ALS Triggers
ACS / Chest Pain	Pressure/squeezing, radiation to arm/jaw/neck, dyspnea, nausea, diaphoresis	ASA 162-325 mg chewed, assist NTG (if BP >90-100), O_2 if SpO_2 <94%, rapid transport	Unrelieved pain after 3 nitro, hypotension, AMS
Respiratory Distress (Asthma/COPD)	Wheezing, accessory muscles, prolonged expiration, SpO_2 <94%	High-flow O_2, assist inhaler (albuterol + spacer), upright position, rapid transport	Silent chest, poor air movement, cyanosis, AMS
Anaphylaxis	Hives, swelling, stridor, wheezing, hypotension	Epinephrine 0.3 mg IM, repeat if needed, high-flow O_2, rapid transport	Any systemic reaction – always transport after epi
Hypoglycemia / AMS	Confusion, lethargy, seizures, diaphoresis, BGL <70	Conscious → oral glucose 15-20 g; unconscious → O_2, rapid transport	Unresponsive, seizure, BGL <60
Stroke / CVA	Sudden facial droop, arm drift, speech difficulty (FAST)	O_2 if hypoxic, position on affected side if vomiting risk, rapid stroke center transport	Time last known normal – note exact time
Seizures	Tonic-clonic, staring, postictal confusion	Protect airway (recovery position), O_2, do NOT insert anything in mouth	First-time seizure, status (>5 min), injury
Syncope	Sudden LOC, pale, diaphoresis, rapid recovery	Supine with legs elevated, O_2, check glucose, transport	Cardiac cause likely in >50 y/o or heart history
Acute Abdominal Pain	Location, quality, radiation, vomiting/fever	Position of comfort, O_2 if hypotensive, rapid transport	Suspect AAA, ectopic, appendicitis – no PO intake

❤ Section 3: Cardiac Emergencies

Condition	Signs/Symptoms	EMT Treatment	Key Points
Chest Pain / ACS	Chest pressure, jaw/arm pain, SOB, diaphoresis, nausea	O_2 if SpO_2 <94%, ASA 324mg chewed, NTG assist (if prescribed & SBP >100), position of comfort	Women/diabetics may have atypical presentation
Cardiac Arrest	Unresponsive, no pulse, no breathing	High-quality CPR, AED ASAP, continue until ALS/ROSC	Push hard (2-2.4 in), push fast (100-120/min), minimize interruptions
CHF / Pulmonary Edema	Dyspnea, pink frothy sputum, JVD, pedal edema, crackles	Sit upright, high-flow O_2, NTG assist if prescribed, rapid transport	Do NOT lay flat - worsens pulmonary congestion

Aspirin & Nitroglycerin Rules

Aspirin (ASA):

- 324 mg chewed (not swallowed whole)
- Contraindicated if allergic or active GI bleed
- Give early in suspected ACS

Nitroglycerin Assist:

- Patient's own prescription
- SBP must be >100 mmHg
- Max 3 doses (5 min apart)
- Watch for hypotension

Section 4: Respiratory Emergencies

Condition	Signs/Symptoms	EMT Treatment	Key Points
Asthma	Wheezing, dyspnea, tripod position, prolonged expiration	Assist with prescribed inhaler (albuterol), O_2, position of comfort	Silent chest = severe obstruction (bad sign)

COPD Exacerbation	Pursed-lip breathing, barrel chest, accessory muscle use	Low-flow O_2 (titrate to SpO_2 88-92%), assist inhaler, transport	Don't withhold O_2 if hypoxic - just titrate
Pulmonary Embolism	Sudden dyspnea, chest pain (pleuritic), tachycardia, history of DVT/immobility	High-flow O_2, position of comfort, rapid transport	High mortality - needs hospital intervention
Anaphylaxis	Hives, swelling (face/throat), stridor, hypotension, SOB	Epinephrine auto-injector, O_2, supine (legs elevated if hypotensive)	Life-threatening - epi is the treatment

Inhaler Assist Steps

1. Confirm patient's prescribed medication
2. Check expiration date
3. Shake inhaler well
4. Have patient exhale fully
5. Patient inhales slowly while pressing canister
6. Hold breath 10 seconds if able
7. Reassess breath sounds & SpO_2

Section 5: Neurological Emergencies

FAST Stroke Assessment

Face – Ask patient to smile. Does one side droop?
Arms – Raise both arms. Does one drift down?
Speech – Repeat a phrase. Is speech slurred or strange?
Time – Note symptom onset time. Call it in!

EMT Treatment: O_2 if needed, position of comfort (head elevated), BGL check, note last known well time, rapid transport to stroke center

Condition	Signs/Symptoms	EMT Treatment	Key Points
Stroke	Facial droop, arm weakness, speech difficulty, sudden severe headache	FAST assessment, O_2, BGL, rapid stroke center transport	Time = brain tissue - document onset time
Seizure (Active)	Uncontrolled movements, loss of consciousness, incontinence	Protect from injury, position on side after, suction if needed, O_2	Do NOT restrain or put anything in mouth
Postictal State	Confusion, fatigue, combativeness after seizure	Recovery position, reassure, monitor airway, transport	May last 15-30 min; protect airway
Syncope	Sudden LOC with rapid recovery	Supine, assess for injury, BGL, ECG if available, transport for evaluation	May indicate cardiac cause - needs workup

Section 6: Diabetic Emergencies

Hypoglycemia (Low BGL)

Signs: Altered mental status, diaphoresis, tremors, tachycardia, hunger, combativeness

BGL: <60 mg/dL (or symptomatic <70)

Treatment:

- If alert & can swallow: **Oral glucose 15-30g**
- If AMS/unable to swallow: Position, protect airway, rapid transport
- Reassess BGL in 15 min

Hyperglycemia / DKA

Signs: Polyuria, polydipsia, Kussmaul respirations, fruity breath, abdominal pain, AMS

BGL: >300 mg/dL (often >400)

Treatment:

- O_2 if needed
- Position of comfort
- Rapid transport (needs IV fluids & insulin)
- EMT cannot treat in field

Oral Glucose Administration

- **Indication:** Hypoglycemia with intact gag reflex & ability to swallow
- **Dose:** 15-30g oral glucose gel
- **Contraindication:** Unable to swallow, no gag reflex, unconscious
- **Reassess:** BGL in 15 minutes; may repeat if still low

Section 7: Overdose & Toxicology

Substance	Signs/Symptoms	EMT Treatment	Key Points
Opioids (heroin, fentanyl, Rx)	Pinpoint pupils, respiratory depression, AMS, cyanosis	Naloxone (Narcan), ventilate with BVM, O_2	Ventilate before/during naloxone; may need repeat doses
Stimulants (cocaine, meth)	Tachycardia, hypertension, hyperthermia, agitation, seizures	Calm environment, O_2, position of comfort, monitor for cardiac arrest	Risk of sudden cardiac death
Alcohol	AMS, slurred speech, ataxia, respiratory depression	Protect airway, recovery position, BGL check, O_2 if needed	Check BGL - may mimic hypoglycemia
Carbon Monoxide	Headache, nausea, confusion, cherry-red skin (late), multiple patients	High-flow O_2 (100%), remove from environment	SpO_2 may be falsely normal

Naloxone (Narcan) Administration

- **Indication:** Suspected opioid overdose with respiratory depression
- **Route:** Intranasal (IN) 4mg or IM 0.4-2mg
- **Onset:** 2-5 minutes
- **May need repeat doses** - fentanyl may require multiple doses
- **Warning:** Patient may become combative upon awakening

Section 8: EMT Medication Quick Reference

Medication	Indication	Dose & Route	Contraindications / Notes
Aspirin	Suspected ACS / cardiac chest pain	162-325 mg chewed	Active bleeding, known allergy
Nitroglycerin (assist prescribed)	Chest pain (suspected cardiac)	0.3-0.4 mg SL q5min (max 3)	BP <90-100 systolic, recent PDE5 inhibitor (Viagra)
Epinephrine Auto-Injector	Anaphylaxis / severe allergic reaction	0.3 mg IM (adult) 0.15 mg (<30 kg peds)	No absolute contraindications in true anaphylaxis
Albuterol (assist prescribed)	Wheezing / bronchospasm	Assist patient with MDI + spacer	Only assist prescribed inhaler; monitor tachycardia
Oral Glucose	Hypoglycemia (conscious patient)	15-20 g PO (gel/tabs)	Must be able to swallow/protect airway
Naloxone	Suspected opioid OD with respiratory depression	2-4 mg IN (preferred)	2025 BLS: Safe even if not opioid; prioritize ventilation

Section 9: High-Yield NREMT Judgment Questions

Q1: 55 y/o male, chest pressure 9/10 × 20 min, pale, diaphoretic. First action?

A: Aspirin 162-325 mg chewed (before nitro or oxygen).

Q2: You give one nitro dose. BP drops to 84/50. Patient still in pain. Next?

A: Hold further nitro, high-flow O_2, rapid transport.

Q3: 28 y/o female, severe lower abdominal pain, vaginal spotting, BP 90/60, HR 110.

A: High-flow O_2, left lateral position, rapid transport (suspect ectopic pregnancy).

Q4: 8 y/o boy, wheezing, SpO_2 89% on RA, using accessory muscles. Mom has albuterol inhaler.

A: Assist with inhaler + spacer, high-flow O_2, rapid transport.

Q5: Patient found unresponsive, pinpoint pupils, RR 4, cyanotic. Treatment?

A: Ventilate with BVM + O_2, administer naloxone. Continue ventilations until breathing improves.

Quick Medical Math Example

Question: Protocol allows 15 g oral glucose. Patient has already taken 10 g from home. How much more can you give?

Solution: 15 g – 10 g = **5 g remaining**

Reasoning: Subtract amount already administered from maximum protocol dose.

The "Sick or Not Sick" Look

- **Pale/cool/clammy + tachycardia** = shock until proven otherwise
- **Altered mental status** = check glucose first
- **Chest pain in anyone >40** = assume cardiac until ruled out

Master EMT Medical Emergencies

Think in this order:
Airway/Breathing → Circulation/Shock → Disability (AMS/glucose) → Rapid Transport

Always reassess vitals and mental status after every intervention.

You're the first clinician most medical patients see. Make the first impression count—assess fast, treat what you can, and move them to people who can do more.

Stay curious. Stay systematic. Stay lifesaving.

Disclaimer: Not official NREMT material. For study & review only. Follow local protocols and current AHA BLS & national EMS guidelines.
© 2025 www.emsnotes.com - By Forrest Munden