National Registry Medication Dosages 2026
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Paramedic Study Guide: Medications and Dosages

This study guide focuses on medications and dosages relevant to paramedics, aligned with the National Registry of Emergency Medical Technicians (NREMT) scope of practice, American Heart Association (AHA) Basic Life Support (BLS) guidelines, and Advanced Cardiovascular Life Support (ACLS) guidelines for 2025 (current as of 2026). Information is compiled from official AHA sources and national EMS standards. Note that NREMT testing emphasizes national scope, which includes administration of various medications via multiple routes, but specific dosages may vary by local protocols. Always refer to local EMS protocols and the latest AHA updates for clinical use. The guide is organized into sections for BLS, ACLS, and additional paramedic-level medications commonly included in NREMT preparation. Dosages are for adults unless specified; pediatric dosages require weight-based calculations (e.g., via length-based tape). For closed-ended math questions (e.g., dosage calculations), reasoning is provided transparently.

Section 1: BLS Medications (AHA 2025 Guidelines)

BLS focuses on basic interventions, including limited medications for lay rescuers and EMS providers. Paramedics may administer these at ALS levels (e.g., IV routes). Updates emphasize early access and integration with CPR.

Medication	Class	Indications	Dosages	Notes/2025 Updates
Aspirin	Antiplatelet	Suspected acute coronary syndrome (ACS) with chest pain.	325 mg chewed and swallowed (adult).	Administer even if patient has taken some; no changes in 2025. Paramedics confirm no contraindications (e.g., active bleeding). From AHA BLS summary.
Epinephrine (Auto-Injector)	Vasopressor/Adrenergic Agonist	Severe anaphylaxis or allergic reaction.	0.3 mg IM (adult); 0.15 mg IM (pediatric <30 kg).	For BLS, auto-injector preferred; paramedics may use IV/IO in advanced scenarios. No major 2025 changes.
Naloxone	Opioid Antagonist	Suspected opioid overdose with respiratory or cardiac arrest.	2-4 mg IN (intranasal) or IM; repeat as needed without delaying CPR.	New 2025: Recommended for lay rescuers and EMS in suspected overdose; distribute via public programs. No harm if not opioid-related; prioritize CPR.

Medication	Class	Indications	Dosages	Notes/2025 Updates
Oral Glucose	Carbohydrate	Hypoglycemia (blood glucose <70 mg/dL) in conscious patients.	15-20 g PO (e.g., gel or tablets).	For BLS; paramedics may use IV dextrose if unconscious. No 2025 changes.

Section 2: ACLS Medications (AHA 2025 Guidelines)

ACLS includes advanced interventions for cardiac arrest, arrhythmias, and peri-arrest conditions. Key updates: Prioritize IV/IO access; epinephrine timing refined; uncertain benefit for some antiarrhythmics. Dosages from adult cardiac arrest algorithm and guidelines.

Medication	Class	Indications	Dosages	Notes/2025 Updates
Epinephrine	Vasopressor	Cardiac arrest (all rhythms); symptomatic bradycardia/hypotension if atropine fails.	Cardiac arrest: 1 mg IV/IO every 3-5 min. Bradycardia: 2-10 mcg/min infusion or push-dose (10-20 mcg IV boluses).	2025: For shockable rhythms, give after initial defibrillation fails; for non-shockable, as soon as possible. Improves ROSC but not long-term outcomes. No high-dose routine use.
Amiodarone	Antiarrhythmic	Refractory VF/pVT; stable wide-complex tachycardia (e.g., VT).	VF/pVT: 300 mg IV/IO bolus (first); 150 mg (second). Stable VT: 150 mg IV over 10 min, repeat if needed.	2025: May consider for refractory VF/pVT; uncertain benefit for other antiarrhythmics. Improves survival to admission if given early.
Lidocaine	Antiarrhythmic	Refractory VF/pVT (alternative to amiodarone); stable monomorphic VT.	VF/pVT: 1-1.5 mg/kg IV/IO (first); 0.5-0.75 mg/kg (second). Stable VT: 1-1.5 mg/kg IV.	2025: Similar to amiodarone for short-term survival; less effective for stable VT. Max total 3 mg/kg.
Atropine	Anticholinergic	Symptomatic bradycardia (first-line).	1 mg IV/IO every 3-5 min (max 3 mg).	2025: Dose increased from 0.5 mg in prior guidelines for clarity; escalate to pacing/dopamine if ineffective.

Medication	Class	Indications	Dosages	Notes/2025 Updates
Adenosine	Antiarrhythmic	Stable narrow-complex SVT; diagnostic for wide-complex tachycardia.	6 mg rapid IV push; repeat 12 mg if needed (max 18 mg).	2025: For pediatric SVT if vagal maneuvers fail; high conversion rates (up to 98%). Flush with 20 mL saline.
Dopamine	Vasopressor/Inotrope	Symptomatic bradycardia/hypotension (second-line after atropine).	5-20 mcg/kg/min IV infusion.	Titrate to effect; no major 2025 changes.
Magnesium Sulfate	Electrolyte/Antiarrhythmic	Torsades de pointes (polymorphic VT with long QT).	1-2 g IV over 5-60 min.	2025: For torsades; correct electrolytes. No routine use in arrest.
Calcium (e.g., Calcium Chloride)	Electrolyte	Hyperkalemia-induced arrest; calcium channel blocker overdose.	1 g IV/IO (10% solution).	2025: Not routine in arrest; indicated for special circumstances (e.g., hyperkalemia). Trend toward harm in general use.
Sodium Bicarbonate	Buffer	Hyperkalemia, metabolic acidosis in prolonged arrest; tricyclic overdose.	1 mEq/kg IV/IO.	2025: Not routine; potential benefit in PEA/asystole but needs trials. For special cases.
Procainamide	Antiarrhythmic	Stable monomorphic VT; refractory SVT (pediatric).	20-50 mg/min IV infusion (max 17 mg/kg).	2025: Uncertain benefit in VF/pVT; reasonable for stable VT. Infuse slowly to avoid hypotension.
Sotalol	Antiarrhythmic	Stable monomorphic VT; refractory SVT (pediatric).	1.5 mg/kg IV over 5 min.	2025: Uncertain benefit in VF/pVT; no hypotension concerns.
Diltiazem	Calcium Channel Blocker	Rate control in AF/flutter or stable NCT.	0.25 mg/kg IV bolus over 2 min; then 5-10 mg/h infusion.	2025: Preferred over beta-blockers in some cases; avoid in heart failure.
Verapamil	Calcium Channel Blocker	Rate control in stable NCT.	0.075-0.15 mg/kg IV over 2 min.	2025: Similar to diltiazem; avoid in wide-complex or heart failure.

Medication	Class	Indications	Dosages	Notes/2025 Updates
Beta-Blockers (e.g., Metoprolol, Esmolol)	Beta-Adrenergic Blocker	Rate control in AF/flutter; polymorphic VT (non-long QT).	Metoprolol: 2.5-5 mg IV (up to 3 doses). Esmolol: 500 mcg/kg bolus, then 50-300 mcg/kg/min.	2025: Uncertain benefit in VF/pVT; for acute coronary syndromes.
Digoxin	Cardiac Glycoside	Rate control in AF/flutter (adjunctive).	0.25 mg IV (repeat to max 1.5 mg/24 h).	2025: Slow onset; caution in renal impairment.

Section 3: Additional Paramedic Medications (NREMT Scope)

Per National EMS Scope of Practice Model (2019 with 2021 changes) and Education Standards, paramedics administer a broad range of medications for emergencies (e.g., pain, seizures, respiratory). List based on common NREMT-tested meds from sources like REMSA and quizlet; dosages are general (adult) and may require local adjustment. Focus on acute use.

Medication	Class	Indications	Dosages	Notes
Acetaminophen	Analgesic/Antipyretic	Mild-moderate pain, fever.	1 g IV/PO (adult); 15 mg/kg (pediatric).	Contraindications: Liver failure. Max 4 g/24 h.
Albuterol	Bronchodilator	Asthma/COPD exacerbation.	2.5 mg nebulized; repeat prn.	Often combined with ipratropium.
Activated Charcoal	Adsorbent	Poisoning/overdose (non-caustic).	50 g PO (adult); 1 g/kg (pediatric).	Shake well; risk of aspiration.
Dextrose	Carbohydrate	Hypoglycemia (unconscious).	25 g IV (50% solution, adult); 0.5-1 g/kg (pediatric).	Use 10% for pediatrics to avoid hypertonicity.
Diazepam	Benzodiazepine	Seizures; sedation.	5-10 mg IV/IM (adult); 0.2-0.5 mg/kg (pediatric).	For status epilepticus.
Diphenhydramine	Antihistamine	Allergic reactions; dystonia.	25-50 mg IV/IM/PO (adult).	
Fentanyl	Opioid Analgesic	Severe pain.	50-100 mcg IV/IM/IN (adult); 1-2 mcg/kg (pediatric).	Monitor respiration.
Glucagon	Hormone	Hypoglycemia (no IV access); beta-blocker overdose.	1 mg IM (adult).	

Medication	Class	Indications	Dosages	Notes
Ipratropium	Anticholinergic Bronchodilator	Asthma/COPD (with albuterol).	0.5 mg nebulized.	
Ketamine	Dissociative Anesthetic	Pain; sedation; excited delirium.	1-2 mg/kg IV (analgesia); 4-5 mg/kg IM (sedation).	Emerging for agitation.
Lorazepam	Benzodiazepine	Seizures; anxiety.	2-4 mg IV/IM (adult).	Alternative to diazepam.
Midazolam	Benzodiazepine	Seizures; sedation.	2-5 mg IV/IM/IN (adult); 0.1-0.2 mg/kg (pediatric).	Versatile routes.
Morphine	Opioid Analgesic	Severe pain; ACS.	2-5 mg IV (adult).	Titrate; monitor BP.
Nitroglycerin	Vasodilator	ACS chest pain; hypertension.	0.4 mg SL every 5 min (max 3); paste 1-2 inches topical.	Contraindications: Hypotension, PDE5 inhibitors.
Ondansetron	Antiemetic	Nausea/vomiting.	4 mg IV/IM/ODT (adult).	
Oxygen	Gas	Hypoxia; any emergency.	2-15 L/min via mask/NRBM.	Titrate to SpO2 94-98%.
Thiamine	Vitamin	Wernicke's encephalopathy (alcoholics with altered mental status).	100 mg IV/IM.	
Tranexamic Acid (TXA)	Antifibrinolytic	Massive hemorrhage (trauma).	1 g IV over 10 min.	Within 3 hours of injury.

Example Dosage Calculation (Math Reasoning)

Question: Calculate epinephrine dose for a 70 kg pediatric patient in bradycardia (infusion rate: 0.1 mcg/kg/min).

Solution: First, convert to mcg/min: 0.1 mcg/kg/min × 70 kg = 7 mcg/min. To arrive: Multiply rate by weight (0.1 × 70 = 7). For infusion setup (e.g., 1 mg in 250 mL = 4 mcg/mL), rate = 7 mcg/min ÷ 4 mcg/mL × 60 min/h = 105 mL/h (drip rate).