Management of Medical Emergencies

For all emergencies

1. Discontinue dental treatment
2. Call for assistance/someone to bring oxygen and emergency kit
3. Position patient: ensure open and unobstructed airway
4. Monitor vital signs
5. Be prepared to support respiration, support circulation, provide CPR, and call for emergency medical services

Condition	Signs and symptoms	Treatment	Drug dosage	Drug delivery
Allergic reaction (mild or delayed)	Hives; itching; edema; erythema–skin, mucosa conjunctiva	1. Discontinue all sources of allergy-causing substances 2. Administer diphenhydramine	Diphenhydramine: follow manufacturer's instructions based on child's age/weight	Oral
Allergic reaction (sudden onset): anaphylaxis	Urticaria-itching, flushing, hives; rhinitis; wheezing/difficulty breathing; bronchospasm; laryngeal edema; weak pulse; marked fall in blood pressure; loss of consciousness	This is a true, life-threatening emergency 1. Call for EMS 2. Administer epinephrine* 3. Administer oxygen 4. Monitor vital signs 5. Transport to emergency medical facility by advanced medical responders	Epinephrine (1 mg/mL): 0.01 mg/kg (maximum: pre-pubertal child: 0.3 mg; teen/adult: 0.5 mg); if no response, may repeat every 5 minutes for a total of 3 injections until recovery or EMS arrives[1] **OR** Epinephrine* autoinjector[1]: follow manufacturer's instructions	IM (mid-outer thigh; use different sites if need to repeat)
Acute asthmatic attack	Shortness of breath; wheezing; coughing; tightness in chest; cyanosis; tachycardia	1. Sit patient upright or in a comfortable position 2. Administer oxygen 3. If single symptom, administer bronchodilator 4. If bronchodilator is ineffective or with severe or multiple symptoms, administer epinephrine* 5. Call for EMS with transportation for advanced care if indicated	1. Albuterol (patient's or emergency kit's) inhaler: 4-8 puffs and repeat every 20 minutes for 2 more doses[1] 2. Epinephrine (1 mg/mL): 0.01 mg/kg (maximum: pre-pubertal child 0.3 mg and teen/adult: 0.5 mg) every 5-15 minutes up to 3 times as needed[1] **OR** Epinephrine* autoinjector[1]: follow manufacturer's instructions	Inhale (Use spacer; add mask if lip seal cannot be achieved) IM (mid-outer thigh; use different sites if need to repeat)
Local anesthetic toxicity *(Note: Poison Control Hotline 1-800-222-1222)*	Light-headedness; changes in vision and/or speech; metallic taste; changes in mental status; confusion, agitation; tinnitus; tremor; seizure; tachypnea; bradycardia; unconsciousness; cardiac arrest	1. Assess and support airway, breathing, and circulation (CPR if warranted) 2. Administer oxygen 3. Monitor vital signs 4. Call for EMS with transportation for advanced care if indicated	Supplemental oxygen	Mask
Local anesthetic reaction: vasoconstrictor	Anxiety; tachycardia/palpitations; restlessness; headache; tachypnea; chest pain; cardiac arrest	1. Reassure patient 2. Assess and support airway, breathing, and circulation (CPR if warranted) 3. Administer oxygen 4. Monitor vital signs 5. Call for EMS with transportation for advanced care if indicated	Supplemental oxygen	Mask

Abbreviations in table: CPR=cardiopulmonary resuscitation; EMS=emergency medical services; IM=intramuscular; IN=intranasal; IV=intravenous; SubQ=subcutaneous.

* Use of prefilled drug-delivery devices (eg, autoinjector, single-dose nasal spray, rectal syringe) may increase speed of administration and decrease potential for dosing errors. Drug concentrations and dose availability may vary by manufacturer. Follow dosing recommendations on package. Clinicians should be familiar with delivery devices available for their immediate use before an emergency arises and have at least 2 doses available in case repeat dosing is required.

For all emergencies

1. Discontinue dental treatment
2. Call for assistance / someone to bring oxygen and emergency kit
3. Position patient: ensure open and unobstructed airway
4. Monitor vital signs
5. Be prepared to support respiration, support circulation, provide CPR, and call for emergency medical services

Condition	Signs and symptoms	Treatment	Drug dosage	Drug delivery
Overdose: benzodiazepine	Somnolence; confusion; diminished reflexes; respiratory depression; apnea; respiratory arrest; cardiac arrest	1. Assess and support airway, breathing, and circulation (CPR if warranted) 2. Administer oxygen 3. Monitor vital signs 4. If severe respiratory depression, establish IV access and reverse with flumazenil 5. Monitor recovery (for at least 2 hours after the last dose of flumazenil) 6. Call for EMS with transportation for advanced care if indicated	Flumazenil: 0.01 mg/kg (maximum: 0.2 mg); may repeat at 1 minute intervals not to exceed a cumulative dose of 0.05 mg/kg or 1 mg, whichever is less[1]	IV (if IV access is not available, may be given IM)
Overdose: narcotic	Decreased responsiveness; respiratory depression; respiratory arrest; cardiac arrest	1. Assess and support airway, breathing, and circulation (CPR if warranted) 2. Administer oxygen 3. Monitor vital signs 4. If severe respiratory depression, reverse with naloxone* 5. Monitor recovery (for at least 2 hours after the last dose of naloxone) 6. Call for EMS with transportation for advanced care if indicated	Naloxone: 0.1 mg/kg up to 2 mg.[1] May be repeated to maintain reversal with maximum cumulative dose of 10 mg. **OR** Naloxone nasal spray*: follow manufacturer's instructions	IV, IM, or SubQ IN (if multiple doses required, alternate nostrils)
Seizure	Warning aura: disorientation, blinking, or blank stare; uncontrolled muscle movements; muscle rigidity; unconsciousness; posticta phase–sleepiness, confusion, amnesia, slow recovery	1. Recline and position to prevent injury 2. Ensure open airway and adequate ventilation 3. Monitor vital signs 4. If status is epilepticus, give either diazepam* **OR** midazolam 5. Call for EMS with transportation for advanced care if indicated	May use patient's previously prescribed rescue medication **OR** Diazepam (5 mg/mL): 0.15-0.2 mg/kg (maximum 10 mg). May repeat once.[1] **OR** Midazolam: 0.2 mg/kg (maximum 10 mg)[1]	IV (prefilled delivery* devices available for rectal or nasal administration) IM, IN, IV
Syncope (fainting)	Feeling of warmth; skin pale and moist; pulse rapid initially then gets slow and weak; dizziness; hypotension; cold extremities; unconsciousness	1. Recline, feet up 2. Loosen clothing that may be binding 3. Ammonia inhaler 4. Administer oxygen 5. Cold towel on back of neck 6. Monitor recovery	Ammonia in vials	Inhale

Abbreviations in table: CPR=cardiopulmonary resuscitation; EMS=emergency medical services; IM=intramuscular; IN=intranasal; IV=intravenous; SubQ=subcutaneous.

* Use of prefilled drug-delivery devices (eg, autoinjector, single-dose nasal spray, rectal syringe) may increase speed of administration and decrease potential for dosing errors. Drug concentrations and dose availability may vary by manufacturer. Follow dosing recommendations on package. Clinicians should be familiar with delivery devices available for their immediate use before an emergency arises and have at least 2 doses available in case repeat dosing is required.

Reference

1. Shenoi RP, Timm N; AAP Committee on Drugs; AAP Committee on Pediatric Emergency Medicine. Drugs used to treat pediatric emergencies. *Pediatrics*. 2020;145(1):e20193450. DOI: 10.1542/peds.2019-3450

DISCLAIMER: This information is not intended to be a comprehensive list of all medications that may be used in all emergencies. Other medications and/or alternate dosing may be indicated for specific situations. Drug information is constantly changing and is often subject to interpretation. While care has been taken to ensure the accuracy of the information presented, the AAPD is not responsible for the continued currency of the information, errors, omissions, or the resulting consequences. Decisions about drug therapy must be based upon the independent judgment of the clinician, changing drug information, and evolving health care practices.