

Office Medical Emergencies in the Podiatry and Chiropractic Office Setting

Podiatrists and Chiropractors should be aware that acute and potentially life-threatening medical emergencies can and do occur in the office setting. Accordingly, all offices should be prepared for these unfortunate and often unpredictable events with the goal of effectively managing these patients until care can be appropriately transferred to trained medical emergency personnel. In preparation for these potential events, all Podiatry and Chiropractic offices should have the following three elements in place: a written office medical emergency response plan, readily available basic emergency equipment and supplies, and readily available basic emergency medications. Specifics regarding the emergency response plans, equipment and supplies, and medications, should be designed and tailored to meet the risk profile of each office. It is not necessary for Podiatrists and Chiropractors to have the drugs, equipment and skills found in an emergency room, but it is necessary to have a basic medical emergency response plan and have available all equipment and supplies that a reasonably prudent practitioner would be expected to need and use in the type of practice carried out in a particular office setting.

Office Medical Emergency Plan

The three following recommendations are offered as a framework for the development and implementation of an effective office medical emergency plan.

Recommendation 1: It is recommended that all offices develop and maintain a policy and procedures manual (including an office medical emergency response plan and a list of specific medical emergency equipment, supplies, and drugs) specific for the risk profile of that office location and practice type based on current research and evidence. This should be updated on an ongoing basis to reflect changes in research and evidence and to capture changes in the practice parameters.

Recommendation 2: It is recommended that all staff understands their specific role during an emergency and participates in office emergency scenario workshops and/or drills (including an office medical emergency response plan) conducted on an ongoing basis.

Recommendation 3: It is recommended that all offices adopt a policy that ensures that emergency equipment is tested and all drugs in the emergency kit are kept current on an ongoing basis. This policy should include, but is not limited to: testing the oxygen machine/tank and contacting the supplier to arrange for on-site inspections and calibrations of the machine/tank, replacing emergency drugs upon expiry, and developing equipment maintenance schedule and logbooks.

Risk Profile

While it is understood that all practices are unique, Podiatry and Chiropractic offices can be classified on the basis of their likelihood of experiencing a medical emergency and the potential risk of the medical emergency having an adverse outcome.

Low Risk Offices:

- Low volume of patients
- Few high risk patients (low morbidity of patient load)
- Urban location with efficient EMS services and proximity to an emergency room
- Limited scope of practice (e.g. physical therapy modalities, biomechanics, etc.)
- No parenteral medications given
- No procedures performed in office

Moderate Risk Offices:

- High volume of patients
- Many high risk patients (high morbidity of patient load)
- Rural/remote location with no local hospital and/or poor or inefficient access to EMS leading to delays in transfer to emergency room
- Possible exposure to severe weather leading to delays in transfer to emergency room
- Parenteral medications given
- Minimally invasive procedures performed in the office (e.g. nail procedures, simple cutaneous procedures, etc.)

High Risk Offices:

- High volume of patients
- Many high risk patients (high morbidity of patient load)
- Rural/remote location with no local hospital and/or poor or inefficient access to EMS leading to delays in transfer to emergency room
- Possible exposure to severe weather leading to delays in transfer to emergency room
- Parenteral medications given
- and/or**
- Invasive procedures performed in the office (e.g. complex cutaneous procedures involving larger surface areas, soft tissue procedures at or below the subcutaneous tissue layer, osseous procedures, etc.)

Practices performing minimal or moderate sedation through the administration of inhaled sedative agents and/or oral sedative agents would be considered high risk regardless of any of the other practice parameters. These practices should adhere to the specific guidelines for the use of these sedation modalities (including all emergency drugs and emergency equipment which must be readily available). Specific guidelines and recommendations can be found in their entirety elsewhere.

Office Medical Emergency Equipment, Supplies, and Medications

While lists of essential emergency drugs and equipment are included in the following tables, one should remember that the primary management of all medical emergencies is Basic Life Support/CPR. While the College currently requires that all members renew Basic Life Support/CPR certification every 3 years, an annual review of protocols is recommended.

The following agents are recommended for use during a medical emergency in the office setting; however these drugs should only be administered by routes and in dosage forms that each practitioner is personally comfortable with and competent to administer.

One should also always keep in mind that the Medical Health History review is considered the most important exercise in identifying potential risks during the provision of any healthcare service and in preventing a medical emergency during or after treatment. Podiatrists and Chiropodists must be completely familiar with each patient's comprehensive Medical History and current conditions to provide care safely and minimize the development of a potentially harmful or life-threatening situation.

Essential Agents for Inclusion in Office Emergency Kits of Low Risk Podiatry and Chiropody Offices

Primary/Required (Essential) Agents				
Generic	Proprietary	Indications	Initial Adult Dose	Pediatric Dose
Oxygen	Oxygen	Most medical emergencies	100% inhalation	100% inhalation
Acetylsalicylic acid (Aspirin)	Many	Acute myocardial infarction	325 mg non-enteric coated tablet to be chewed	Not indicated
Glucose Tablets	Dex4 Glucose Tablets	Hypoglycemic event (conscious patient)	1-2 tablets chewed as needed in conscious patient	1-2 tablets chewed as needed in conscious patient

Essential Equipment/Supplies for Inclusion in Office Emergency Kits of Low Risk Podiatry and Chiropody Offices

Primary/Required (Essential) Equipment/Supplies
Telephone, Stethoscope, Blood pressure cuff, Basic dressing supplies, Bag-valve-mask ventilation device (adult and pediatric)

Essential Agents for Inclusion in Office Emergency Kits of Moderate Risk Podiatry and Chiropractic Offices

Primary/Required (Essential) Agents				
Generic	Proprietary	Indications	Initial Adult Dose	Pediatric Dose
Oxygen	Oxygen	Most medical emergencies	100% inhalation	100% inhalation
Epinephrine 1:1000 Solution	Adrenalin	Anaphylaxis	0.1 mg IV or 0.3-0.5 mg IM	0.01 mg/kg (total pediatric dose not to exceed adult dose of 0.3 mg/kg)
		Asthmatic bronchospasm unresponsive to salbutamol/albuterol	0.1 mg IV or 0.3-0.5 mg IM	0.01 mg/kg (total pediatric dose not to exceed adult dose of 0.3 mg/kg)
		Cardiac arrest	1 mg IV	0.01 mg/kg (total pediatric dose not to exceed adult dose of 0.3 mg/kg)
Diphenhydramine	Benadryl	Allergic reactions	50 mg IV or IM	1 mg/kg (total pediatric dose not to exceed adult dose of 50 mg)

Nitroglycerin	Nitrostat Nitromist	Angina pectoris	0.3 or 0.4 mg sublingual tablet or metered spray	No pediatric dose
Salbutamol (<i>Int</i>) Albuterol (<i>US</i>)	Ventolin Proventil	Asthmatic bronchospasm	2 puffs (100 micrograms per puff)	1 puff (100 micrograms per puff)
Acetylsalicylic acid (Aspirin)	Many	Acute myocardial infarction	325 mg non- enteric coated tablet to be chewed	Not indicated
Hydrocortisone	Many	Allergic reactions and/or adrenal insufficiency crisis	Hydrocortisone 100 mg or equivalent dose IM or IV	Hydrocortisone 1-5 mg/kg
Glucose Tablets	Dex4 Glucose Tablets	Hypoglycemic event (conscious patient)	1-2 tablets chewed as needed in conscious patient	1-2 tablets chewed as needed in conscious patient
50 % Dextrose Solution	50 % Dextrose Solution	Hypoglycemic event (unconscious patient)	50 mL IV in unconscious patient	50 mL IV in unconscious patient

Secondary/Recommended (Non-Essential) Agents				
Generic	Proprietary	Indications	Initial Adult Dose	Pediatric Dose
Aromatic ammonia or other respiratory stimulant	Aromatic ammonia or other respiratory stimulant	Syncope episode	Inhaled as needed	Inhaled as needed
Midazolam	Versed	Seizures/convulsions	5 mg IM	0.1-0.25 mg/kg IM (not to exceed adult dose of 5 mg)

**Essential Equipment/Supplies for Inclusion in
Office Emergency Kits of Moderate Risk
Podiatry and Chiropody Offices**

Primary/Required (Essential) Equipment/Supplies	
Telephone, Stethoscope, Blood pressure cuff, Basic dressing supplies, Bag-valve-mask ventilation device (adult and pediatric)	
Parenteral Supplies:	Syringes (1cc, 3cc, 10cc, 60cc) Needles (14, 18, 23, 25 gauge) Butterfly Needles (19 and 23 gauge) Alcohol Swabs Tourniquet
Glucometer	

Essential Agents for Inclusion in Office Emergency Kits of High Risk Podiatry and Chiropractic Offices

Primary/Required (Essential) Agents				
Generic	Proprietary	Indications	Initial Adult Dose	Pediatric Dose
Oxygen	Oxygen	Most medical emergencies	100% inhalation	100% inhalation
Epinephrine 1:1000 Solution	Adrenalin	Anaphylaxis	0.1 mg IV or 0.3-0.5 mg IM	0.01 mg/kg (total pediatric dose not to exceed adult dose of 0.3 mg/kg)
		Asthmatic bronchospasm unresponsive to salbutamol/albuterol	0.1 mg IV or 0.3-0.5 mg IM	0.01 mg/kg (total pediatric dose not to exceed adult dose of 0.3 mg/kg)
		Cardiac arrest	1 mg IV	0.01 mg/kg (total pediatric dose not to exceed adult dose of 0.3 mg/kg)
Diphenhydramine	Benadryl	Allergic reactions	50 mg IV or IM	1 mg/kg (total pediatric dose not to exceed adult dose of 50 mg)

Nitroglycerin	Nitrostat Nitromist	Angina pectoris	0.3 or 0.4 mg sublingual tablet or metered spray	No pediatric dose
Salbutamol (<i>Int</i>) Albuterol (<i>US</i>)	Ventolin Proventil	Asthmatic bronchospasm	2 puffs (100 micrograms per puff)	2 puff (100 micrograms per puff)
Acetylsalicylic acid (Aspirin)	Many	Acute myocardial infarction	325 mg non- enteric coated tablet to be chewed	Not indicated
Hydrocortisone	Many	Allergic reactions and/or adrenal insufficiency crisis	Hydrocortisone 100 mg or equivalent dose IM or IV	Hydrocortisone 1-5 mg/kg
Glucose Tablets	Dex4 Glucose Tablets	Hypoglycemic event (conscious patient)	1-2 tablets chewed as needed in conscious patient	1-2 tablets chewed as needed in conscious patient
50 % Dextrose Solution	50 % Dextrose Solution	Hypoglycemic event (unconscious patient)	50 mL IV in unconscious patient	50 mL IV in unconscious patient

Secondary/Recommended (Non-Essential) Agents				
Generic	Proprietary	Indications	Initial Adult Dose	Pediatric Dose
Aromatic ammonia or other respiratory stimulant	Aromatic ammonia or other respiratory stimulant	Syncope episode	Inhaled as needed	Inhaled as needed
Midazolam	Versed	Seizures/convulsions	5 mg IM	0.1-0.25 mg/kg IM (not to exceed adult dose of 5 mg)

Essential Equipment/Supplies for Inclusion in Office Emergency Kits of High Risk Podiatry and Chiropody Offices

Primary/Required (Essential) Equipment/Supplies

Telephone, Stethoscope, Blood pressure cuff, Basic dressing supplies,
Bag-valve-mask ventilation device (adult and pediatric)

Parenteral Supplies:

Syringes (1cc, 3cc, 10cc, 60cc)
Needles (14, 18, 23, 25 gauge)
Butterfly Needles (19 and 23 gauge)
Alcohol Swabs
Tourniquet

Glucometer

Secondary/Recommended (Non-Essential) Equipment/Supplies

Intubation Equipment:

Laryngoscopes (two sizes)
Endotracheal tubes (sizes 3-8)
Suction device

Intravenous Supplies:

Catheters (numbers 14, 18, 22, 25)
Normal Saline
IV pole and tubing

Any practices performing minimal or moderate sedation through the use of inhaled sedative agents and/or oral sedative agents, would be considered high risk and in addition to all previously listed high risk agents should include reversal agents in their emergency kits. These practices should adhere to the specific guidelines for the use of these sedation modalities (including all emergency drugs and emergency equipment which must be readily available). Specific guidelines and recommendations can be found in their entirety elsewhere.

**Essential Agents for Inclusion in Office Emergency Kits of All
Podiatry and Chiropractic Offices Administering Minimal-
Moderate Sedation* (Nitrous Oxide/Oxygen Sedation and/or
a Single Oral Sedative Drug)**

Reversal Agents in Addition to All Agents Previously Described for a High Risk Office				
Generic	Proprietary	Indications	Initial Adult Dose	Pediatric Dose
Naloxone	Narcan	Opioid antagonism for opioid overdose	0.4-2 mg IV (may repeat q 2-3 min prn)	0.01-0.1 mg/kg IV or IM (may repeat every minute, not to exceed 2 mg per dose)
Flumazenil	Romazicon	Benzodiazepine antagonism for benzodiazepine overdose	0.2 mg IV infused over 30 seconds May repeat with additional doses of 0.5 mg over 30 seconds at 1 minute intervals Not to exceed a total cumulative dose of 3 mg	0.01 mg/kg IV infused over 15 seconds (not to exceed 0.2 mg/dose) May repeat every minute however not to exceed total cumulative dose of 0.05 mg/kg or 1 mg (whichever is lower)

*The American Society of Anaesthesiologists (ASA) has defined minimal and moderate depths of sedation as follows:

Minimal Sedation:

- Normal response to verbal stimulation
- Cognitive function and coordination may be impaired
- Ventilatory and cardiovascular functions are unaffected

Moderate Sedation:

- Drug induced depression of consciousness
- Patient responds purposefully to verbal commands
- Airway is patent, and spontaneous ventilation is adequate
- Cardiovascular function is usually unaffected

References

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