

Dental Office Preparation for Medical Emergencies

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TABLE 1**Medical emergencies reported
by 2,704 dentists.***

EMERGENCY SITUATION	NO. (%) OF EMERGENCIES REPORTED†
Syncope‡	4,161 (30.1)
Mild Allergic Reaction	2,583 (18.7)
Postural Hypotension	2,475 (17.9)
Hyperventilation‡	1,326 (9.6)
Insulin Shock (Hypoglycemia)	709 (5.1)
Angina Pectoris‡	644 (4.6)
Seizures‡	644 (4.6)
Asthmatic Attack (Bronchospasm)‡	385 (2.8)
Local Anesthetic Overdose	204 (1.5)
Myocardial Infarction	187 (1.4)
Anaphylactic Reaction	169 (1.2)
Cardiac Arrest	148 (1.1)

* Source: Malamed.¹

† A few emergencies with low numbers were omitted from the table.

‡ Emergencies that potentially are stress related.

PRAY

- **P**reparedness of dental office to take on the role of the first responder
- **R**ecognition of predisposing history/presenting signs and symptoms of an emergency
- **A**ction to stabilize, using basic life support techniques, and/or treat the patient
- **Y**ell for help by activating the emergency Medical System (911) when necessary

Basic Action for every emergency

– P: Position

- If conscious, let the patient find a comfortable position
- If unconscious, supine with legs elevated slightly about 10 to 15 degrees giving blood flow to the brain for oxygen delivery

– A: Airway B: Breathing C: Circulation

- Talking patients are breathing
 - Just be observance of any allergic reactions, breathing (lung) sounds
 - Be aware of items you have placed in the mouth, such as cotton rolls
- If unconsciousness occurs
 - Remember BLS skills, ABC's: ABCD, "look, listen, and feel" giving you time to diagnose

TIPS for quick peace of mind

- Taking a pulse gives physical feedback
 - Rate and Character
- Respirations
 - Rate and Character

History and Physical

Medical History

- Know your patient – Never treat a stranger
 - Reviewing the completed patient medical history may reveal either a poor historian or patients discount the importance of sharing all their medical history with the dentist
 - At least some patients may see their dentist more than their physician meaning dentists and their staffs may be a position to refer patients to their medical colleague if symptoms or signs are suspicious for an underlying medical problem

Equipment for the dental office

- Blood pressure taking equipment for all ages
- Stethoscopes
- Oxygen
 - E-tank with regulator and back-up spare E-tank
 - Oxygen masks (nonrebreather recommended)
 - Nasal cannula
- Bag-Value-Mask ventilator with various size masks
- Magill forceps
- Oral airways
- Wall clock with second hand
- AED

Office Emergency Drugs Needs

- Unless there is some special reason, list should follow limited list offered by Dr. Stanley Malamed, DDS
 - Oxygen
 - Epinephrine – Alpha/Beta Agonist
 - Ampules 1:1000 solution
 - Auto-injectors or preloaded syringes

Office Emergency Drugs Needs

- Diphenhydramine (Benadryl)
 - IM-IV solution
- Nitroglycerin
 - Vasodilator
 - Reduces cardiac oxygen demand by decreasing left ventricular pressure and systemic vascular resistance; dilates coronary arteries and improves collateral flow to ischemic regions
- Albuterol
 - Bronchodilator for reversible airway obstruction
- Glucose – Anti-hypoglycemic agent 10-20 grams
- Aspirin (something that allows chewing)
 - Antiplatelet agent
- Aromatic ammonia – respiratory stimulant

Need for advanced medication list?

- Variable
 - Skills of providers
 - Location of practice
 - Emergency help response time

TABLE 2**Suggested basic emergency drugs for the general dental office.**

INDICATION	DRUG	ACTION	ADMINISTRATION
Bronchospasm (Severe Allergic Reaction)	Epinephrine	α - and β -adrenergic receptor agonist	Autoinjectors or preloaded syringes, ampules; 1:1,000 solution subcutaneously, intramuscularly or sublingually; adults, 0.3 milligram; children, 0.15 mg
Mild Allergic Reaction	Diphenhydramine	Histamine blocker	50 mg intramuscularly; 25 to 50 mg orally every three to four hours
Angina	Nitroglycerin	Vasodilator	Sublingual tablet: one every five minutes up to three doses; translingual spray: one spray every five minutes up to three times
Bronchospasm (Mild Asthma)	Bronchodilator such as albuterol	Selective β_2 - adrenergic receptor agonist	Two or three inhalations every one to two minutes, up to three times if needed
Bronchospasm (Severe Asthma)	Epinephrine	α - and β -adrenergic receptor agonist (bronchodilator)	Autoinjectors or preloaded syringes, ampules; 1:1,000 solution subcutaneously, intramuscularly or sublingually; adults, 0.3 mg; children, 0.15 mg
Hypoglycemia	Glucose, as in orange juice	Antihypoglycemic	If the patient is conscious, ingest
Myocardial Infarction	Aspirin	Antiplatelet	One full-strength tablet (165-325 mg) chewed and swallowed
Syncope	Aromatic ammonia	Respiratory stimulant	Inhalant crushed and held four to six inches under nose

Team Member Roles

- Written plan that describes the expected roles of team members
- Good communication during emergency and training sessions include acknowledgement of messages between team members
 - For example, the leader states, Mary, call 911. Mary replies, I am going to call 911.
 - Eye contact between team members provides visual connections with instructions.
 - All team members are empowered to offer suggestions but remember it needs to be orderly

Emergency duties of a four-member dental team.*

TEAM MEMBER 1: LEADER

- Directs team members
- Positions the patient and stays with him or her
- Performs "ABCs"† of cardiopulmonary resuscitation (CPR)
- Takes command and appears calm
- States instructions directly and clearly
- Requests acknowledgment from team members that instructions are understood
- Fosters open exchange among team members
- Concentrates on what is right for the patient, not who is right

TEAM MEMBER 2

- Brings emergency kit
- Brings oxygen tank and attaches appropriate delivery system
- Brings automated external defibrillator
- Assists with ABCs of CPR, including monitoring vital signs
- Checks oxygen tank regularly
- Checks emergency kit regularly
- Prepares drugs for administration

TEAM MEMBER 3

- Telephones emergency medical services (9-1-1)
- Meets paramedics at building entrance
- Keeps chronological log of events
- Assists with ABCs of CPR

TEAM MEMBER 4

- Assists with ABCs of CPR
- Assists with other duties as needed

* Source: Malamed.¹

† ABC: Airway, breathing, circulation. Source: American Heart Association.⁴

BOX 1

Emergency preparedness checklist.*

- All staff members have specific assigned duties.
- Contingency plans are in place in case a staff member is absent.
- All staff members have received appropriate training in the management of medical emergencies.
- All clinical staff members are trained in basic life support for health care providers.
- The dental office is equipped with emergency equipment and supplies that are appropriate for that practice.
- Unannounced emergency drills are conducted at least quarterly.
- Appropriate emergency telephone numbers are placed prominently near each telephone.
- Oxygen tanks and oxygen delivery systems are checked regularly. Other emergency respiratory support equipment is present, in good working order and located according to the emergency plan.
- All emergency medications are checked monthly and replacements are ordered for specific drugs before their expiration dates have passed.
- All emergency supplies are restocked immediately after use.
- One staff member is assigned the task of ensuring that the above procedures have been completed and to document this checklist review.

* Adapted from Fast and colleagues.²

Medical Record

- Never alter records or progress notes.
 - It is perfectly acceptable to make corrective or additional entries if additional information needs to be recorded.
 - Remember forensic computer experts may be used
- Depending on the outcome, understand who to contact
 - NM Dental Board
 - Malpractice insurance company
- Communications with your Attorney if a seminal or other significant event occurred

Medical Record

- If equipment was involved
 - If equipment malfunctioned, preserve equipment for examination
- If modern electronic monitored involved, data download may be subpoenaed by attorney for evidence due to internal memory

The follow-up

- Share information with family and friends about what has happened
 - Do not assign blame but a sincere and honest explanation of the event helps everyone involved handle the emotions
- Debrief the team after emergency
 - Ensure the log/paper work is completed accurately
 - Make appropriate notes of facts and events
 - Preserve anything that may have a contributing factor to the event
 - Equipment, medications administered, etc.
- Team members may need to seek medical help to deal with poor outcomes for emotional well being.

THE END

THANK YOU