



CNA HealthPro

Medical Emergencies

Medical emergencies in the dental office can take many forms, ranging from the common and relatively benign syncope to rare but serious sudden cardiac arrest. In between those extents of severity, we have received claims involving hematomas, burns, respiratory arrest, asthma attacks, excessive bleeding, allergies, and diabetic shock, to name but a few emergency medical events.

Medical emergencies are often not a result of any error or omission by the dentist or dental personnel. Emergency medical events can occur anywhere. Sometimes they occur in the dentist's office. Fortunately, our claim experience has shown that medical emergencies in the dental office are relatively rare and most often do not result in significant or permanent injuries. Cases that do involve significant or permanent injuries almost always include criticism of the adequacy and timeliness of both the recognition and the response of the dentist and dental team.

Most dental patients would reasonably expect that dental office personnel possess a minimal level of healthcare training, and are able to respond to medical emergencies in a basic fashion. Consequently, all dental offices should have medical emergency response plans which are documented in the office policy and procedure manual. Additionally, offices should hold regular training that reinforces the roles and responsibilities within the response plan. Failure to have an emergency medical response plan or adequate training may result in confusion and significant delays in providing emergency medical care.

This article is not intended to be a step-by-step reference on the management of medical emergencies in the dental office. There are numerous sources, including textbooks, manuals, and CE courses, that provide excellent references and discuss the specific steps of managing of medical emergencies. Rather, our goal is to highlight the importance of a reasonable understanding and expertise in the subject, for the purposes of both good patient care and good risk management. Therefore, we encourage you to consult your sources of choice and maintain the knowledge and skills necessary to respond to a medical emergency in your dental practice.

Identify the risks

The key to preparedness begins with knowing which patients are most at risk and which medical emergencies are most likely to occur within your patient population. Familiar patient populations at risk include:

- Patients with significant medical histories (for example, cardiac disease, hypertension, diabetes, etc.)
- Patients taking numerous prescription medications (this may include sedatives prescribed, dispensed, or administered by you)
- Older patients
- Patients under increased stress due to fear, pain, or anxiety
- Patients and procedures requiring longer appointments

The most frequent adverse event reported to CNA is the swallowing or aspiration of a foreign object by the patient, usually a crown. Among other medical emergencies, the most common include syncope, allergic reactions, angina pectoris, sudden cardiac arrest, respiratory distress (often caused by allergic reaction or asthma), and hypoglycemia.

Organize your medical emergency response

Prevention

The most important component of a medical emergency is prevention. Prevention can best be achieved by the dentist's thorough physical assessment of the patient. Your assessment should combine the review of a complete, written medical history obtained from the patient (or the parent or guardian in the case of a minor child) with findings from your clinical examination and evaluation of the patient. Take the time to discuss the medical history with the patient, as well as to investigate any responses that would be a cause for concern.

Prevention also can be practiced by preventing your patients from being subjected to adverse or dangerous situations related to their condition. For example, be certain to schedule diabetic patients early in the day, and query them – before beginning treatment – about their drug and eating regimens that morning. Hypertensive patients should have their blood pressure recorded at each visit. Exercise preventive measures in managing anxious patients and those with a history of fainting by suggesting they loosen tight clothing like collars and neckties and unbutton the cuffs of shirt sleeves. Since syncope is due to a period of cerebral ischemia, you can position patients with their feet slightly higher than their brain (about a 10 to 15 degree angle), thus promoting adequate cerebral blood flow. You can also suggest that patients move their arms and legs prior to an injection to reduce peripheral blood pooling in the musculature and precluding its flow to the brain.

Office Policy and Procedure

After the potential medical emergency conditions for your practice have been identified, the next step is to determine an appropriate office policy response for each such instance. Emergency policies and procedures should be based on a realistic assessment of the practice's capabilities. They should also suit the *type* of dental office, the clinical procedures performed, and the skill level of the office personnel.

For example, a small general dental office may decide to handle all medical emergencies by calling 911 and doing basic CPR. However, an oral surgeon may be reasonably expected to be familiar with more advanced resuscitation techniques than a general dentist. Similarly, dentists who provide intravenous sedation or general anesthesia will likely be held to a higher level of knowledge and skill. These dentists are expected to manage medical emergencies due to the additional training they are required to undergo by many state dental boards. In addition, the staff members of different types of practices may have more or less training in medical emergency procedures and access to different types of emergency equipment depending on the practice activities.

One of the critical components of emergency medical response is the ability to recognize a medical emergency. Do you and your staff know the warning signs for sudden cardiac arrest, or that of an IgE-mediated allergic reaction? Can you tell when a diabetic patient needs glucose? Do you and your staff know that frequent symptoms of syncope include palpitations, hyperventilation, nausea, vomiting, and a fainting feeling? The faster a medical emergency can be identified, the more efficiently it can be managed and the less likely the patient is to experience an adverse outcome.

Two tragic cases in the news this year involved young children who died following sedation in the dental office. In each case, the dentist was criticized for not recognizing respiratory arrest and taking appropriate action. One dentist was reported to have written in the chart that the child was "alert and responsive" just moments before her mother found her unresponsive and in respiratory arrest in the dental chair. The state dental board suspended the dentist's license, citing an inadequate level of patient monitoring during the sedation procedure. Clearly, proper electronic monitoring is one means of enhancing the ability to identify a developing medical emergency.

Response training

Once potential medical emergencies have been identified and their warning signs learned, personnel should then be trained to respond. All personnel should know to dial 911 to activate an emergency medical services response. Additionally, personnel who will respond in a given manner to specific events should be identified. The designated job responsibilities and specific responses should be documented in the office policy and procedure manual. No matter how simple your response plan, regularly scheduled medical emergency drills can help staff members develop the habits and reflexes to act expeditiously and smoothly.

Regularly review your system of reacting to medical emergencies in the dental office. The following is a summary of steps for emergency preparedness:

1. All staff members practice specific preassigned duties. You may opt to do things differently, but here's one example of preassigned duties for a significant medical emergency:
 - You notify the receptionist of the emergency.
 - The receptionist calls 911.
 - The dental assistant helps you position the patient properly, then brings the emergency kit (if applicable), the portable oxygen (if needed), and assists as directed.
 - You monitor vital signs, secure airway, begin CPR, if needed, and supervise sequence of actions.

Similarly, the response for a syncopal event would be far simpler, since syncope often can be easily managed by adjusting the chair position to promote adequate cerebral blood flow.

2. Verify that all staff members have current CPR certification. CPR certification should be renewed annually in accordance with current American Heart Association guidelines. New CPR guidelines were published in November 2005.
3. Conduct periodic emergency drills to test preparedness at least quarterly.
4. Place emergency phone numbers for police, ambulance, and local physicians prominently by each phone.
5. Check oxygen tanks and the oxygen delivery system regularly to ensure that they are in good working order.
6. Check all emergency medications monthly to assure replacement of outdated medications. Assign a specific staff member to ensure that this is done and documented.

In order to ensure the orderly and efficient handling of a medical emergency, you and your staff should spend several sessions studying and practicing these procedures so that medical emergencies can be handled in a calm and capable manner.

Emergency medical equipment and drugs

It is not necessary for most dentists to purchase elaborate emergency medical supply kits. Emergency equipment on hand should be appropriate for the patient population and nature of your practice, and correspond to descriptions in your policy and procedure manual.

While emergency kits, or "crash carts," are available from a variety of vendors, it may be optimal if you create your own kit, tailored to your practice and your own emergency management abilities. The process

of creating your own kit creates a familiarity with both the equipment and the drugs you select for inclusion. If your crash cart contains medications that are not used during an emergency due to your inexperience with them, an allegation may be asserted that you failed to properly manage your patient's emergency care.

Therefore, it is prudent to maintain only those drugs and instruments which you are comfortable using. Commercial emergency kits often contain equipment and drugs that most dentists either don't know how to use or have reservations about using. For example, if you do not plan to start intravenous medication drips in response to a medical emergency, then do not purchase an elaborate kit that includes IV equipment and drugs.

Sources vary in the equipment, drugs, and supplies for recommended availability in every dentist's emergency arsenal. The following is *not* a CNA-required list, but merely a sampling of commonly cited items in emergency management sources:

- Oxygen tank and the ability to deliver positive pressure oxygen (the nitrous/oxygen nasal mask does NOT provide adequate pressure)
- Blood pressure cuffs of various sizes (automatic or manual) for different sized arms
- Epinephrine (and syringes) and antihistamines for allergic reactions
- Reversal agents for sedatives
- Sugar source for hypoglycemia
- Ammonia inhalant
- Bronchodilator inhaler for asthma attacks
- Nitroglycerine for angina pectoris

You may choose to add additional items based on the nature of your practice, your patients' anticipated emergency needs, and your level of competence with the item.

All staff should be trained in the use of this equipment and regular refresher sessions should be held to maintain a high state of readiness. Emergency medical equipment must be stored in a readily accessible location, and personnel should be assigned to check and maintain the equipment on a routine basis. Medications, for example, must be checked regularly to identify and replace expired emergency drugs. Other types of equipment may need routine calibration. Instruct staff members who examine the emergency kit to initial and date their maintenance checks.

The automatic external defibrillator (AED)

The only treatment for sudden cardiac arrest (SCA), a leading cause of death in the United States, is the rapid delivery of a specific electrical shock within a critical time period. We are often asked if dentists are required to have an AED on hand to meet the standard of care for medical emergency management.

Many municipalities have placed AEDs in airports, parks, and public buildings. Some health clubs have chosen to have them available, knowing that many people suffer SCA during exercise. If most physicians were asked whether they have an AED in their offices, the probable answer is "no." Even though the ADA has suggested that dentists consider purchasing an AED as part of their emergency kit, most dentists do not have one. In most states, there is neither a licensing nor a legal requirement nor any duty to keep an AED in a physician's office. Therefore, it may be asserted that a dentist can choose to not have one and fulfill the standard of care for emergency medical response by other means.

However, we are aware of one state dental board that has amended its dental practice act to require every dental office to have an AED, stating “Any dentist practicing after [the implementation date] without an automatic external defibrillator on site shall be considered to be practicing below the minimum standard of care.” In this state, Florida, as well as any other that may enact similar changes in the future, all dentists should comply with the dental practice act and purchase an AED. Dentists in other states would be permitted to opt against the purchase of an AED.

So, if not required to do so, should you purchase an AED or not? That becomes a personal decision for each dentist. Numerous dentists at our risk management seminars have suggested that the person in the office most likely to need the AED is the dentist!

The factors to consider when discussing AEDs should relate to the nature of your practice. Assess how often you treat patients at risk of sudden cardiac arrest, and how often you treat patients who are medically compromised or have significant medical histories. How often do you perform surgical procedures, including extractions? How often do you sedate patients? How long does it take your local EMS to respond to your practice location? What is your perception of your level of risk, both of having an AED as well as *not* having it? Of course, any moral and ethical views you may have regarding the need for an AED should be considered as well.

If you decide to purchase an AED, be certain *all employees* are trained in its proper use, including non-clinical personnel. According to the manufacturer, the “defibrillator is intended to be easy to use for minimally trained responders.” The ADA has suggested that “the user should have received training at a recognized course in CPR and AED use, such as those offered by the American Heart Association or the American Red Cross, or be certified in basic life support, advanced life support or other physician-authorized emergency medical response.” The expectation of the American public is that healthcare personnel are, at least, “minimally trained.” If a person walking through the airport can grab an AED off the wall and use it properly, you and your staff should be able to do so as well.

Putting it all together

Similar to the other risk management efforts in your practice, the management of the risk of a medical emergency begins with advance planning. It requires the adequate training of both you and your staff, as well as the ability to both prevent and recognize medical emergencies, and to respond accordingly when necessary.

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