

RISK MANAGEMENT ARTICLE

Checklist for Dental Emergencies

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No matter how carefully dentists screen patients, unexpected emergencies can occur, ranging from an allergic reaction to cardiac arrest from ventricular fibrillation triggered by a myocardial infarction. Because emergencies do not commonly occur, it can be challenging and anxiety-producing for dentists and their staffs to respond to them. The associated stress can diminish recall of emergency protocols, making it difficult to treat patients effectively.

To manage stress, dentists might want to consider adopting a tool that is being used more widely in hospital settings for emergencies: crisis checklists.

Crisis checklists are an example of a cognitive aid, which can be used to help clinicians manage emergency situations when a rapid response is essential to prevent patient morbidity and mortality. These checklists have their roots in aviation and other industries where the stakes are high. Crisis checklists help clinicians retrieve rarely used information in high-stress situations, facilitating dentists' ability to focus on assessment, organization of the team, and management.

A review article by Stuart Marshall in *Anesthesia & Analgesia* reported several studies using simulation found that technical performance improved with use of cognitive aids. However, not all research results have been positive, indicating the importance of thoughtful implementation of checklists.

Lay the groundwork

Dentists in a group practice should work collaboratively to evaluate the potential of adapting checklists available from other sources, or to create their own. Those in solo practice may want to contact other dentists in the community to create a working group.

Typically, multiple checklists are used, with each one addressing a specific type of emergency. For example, the American Society of Regional Anesthesia and Pain Medicine has developed "Checklist for the Treatment of Local Anesthetic Systemic Toxicity," available at www.asra.com/advisory-guidelines/article/3/checklist-for-treatment-of-local-anesthetic-systemic-toxicity.

Unfortunately, emergency checklists specific to the dentist office are rare, but checklists designed for other settings, such as the operating room, can still be helpful. Access free checklists at:

- Stanford Anesthesia Cognitive Aid Group's Emergency Manual (<http://emergencymanual.stanford.edu>)
- Project Check (www.projectcheck.org/crisis.html)
- Anesthesia Informatics and Media Lab (<http://aim.stanford.edu/project/cogaid/>)

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Dentists should evaluate checklists and adapt as needed to fit their practice environment. Consider these properties of an ideal checklist, identified by Marshall:

- Its content must be derived from best practice guidelines or protocols.
- Its design should be appropriate for use in an emergency situation.
- It should be familiar—in a format used in practice and training.
- It should also help other team members to perform their tasks in a coordinated manner.

If creating a new or adapted checklist be sure to follow basic principles to enhance effectiveness (see *Creating a checklist*).

A key to success is ensuring that checklists reflect the most recent evidence as opposed to personal preference. This approach will improve outcomes and protect the dentist in case of legal action by providing evidence that he or she was following standards of care.

Even if dentists choose not to create or adapt emergency checklists, they can consider identifying other cognitive aids such as mnemonics and acronyms to keep readily available. One example is the CANAL acronym that facilitates remembering causes of emergencies: Cardiac, Airway, Neurological, Allergic and drug reaction, and Loss of consciousness. Access the complete acronym at www.dentistrytoday.com/emergency-medicine/6767-emergency-drug-kit-strategies-for-the-dental-office.

Educate staff

Dentists should educate staff about the role of checklists in an emergency situation, explaining that they are helpful in keeping people focused and ensuring that key steps are not forgotten. To keep staff (and themselves) well prepared, dentists should periodically hold simulations of emergency situations so everyone can practice using checklists and acting as a team. All education sessions should be documented to provide evidence in case of a legal action.

Consider how to access and use the checklist

Where to keep the checklist depends partly on the preferences of those who are going to use it. If the office is highly technically oriented, it may be stored on the computer or even as a PDF that can be accessed on a smartphone. However, it is important to keep in mind that a paper copy stored in a specific location has the advantage of being readily available to everyone.

Creating a checklist

Creating a checklist requires time and skill, but can be rewarding. One resource is the "Checklist for Checklists" at www.projectcheck.org/checklist-for-checklists.html.

The checklist, created by Dr. Atul Gawande, the Brigham and Women's Hospital Center for Surgery and Public Health Dissemination Team, and Dan Boorman of Boeing, divide the process into three parts: development, drafting, and validation, with questions for each part.

Development includes questions that help determine the quality of items written, such as, "Is each item actionable, with a specific response for each item?"

Drafting includes the overall look of the checklist, asking questions about font, length, and size of text.

Validation asks questions such as, "Does the checklist fit the flow or work?"

Source: Project Check. <http://www.projectcheck.org/checklist-for-checklists.html>.

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Establish a time frame for reviewing checklists and a process for replacing old checklists with revised ones. Otherwise, the incorrect checklist could be used, creating legal risk if the patient outcome is poor.

Another decision to make is whether to have someone read aloud the items on the checklist. This has the advantage of reducing confusion, although each person responding to the situation should feel empowered to raise issues during the emergency to ensure response is optimal.

Remember the basics

Checklists are simply one tool to manage emergencies. They do not substitute for the basics, such as ensuring that everyone knows how to dial 911 or other emergency numbers (see *Preparing for an emergency*). Dentists and staff members should not hesitate to call for help promptly. Waiting too long can result in patient harm and place clinicians in legal jeopardy.

It is also vital to be prepared with the correct equipment, such as an automated external defibrillator, and emergency medications. Check—and document—functioning of the equipment on a regular basis. Create an

emergency drug kit and check it regularly for completeness and to be sure drugs have not expired. One resource is a document that lists emergency drugs for local anesthesia, mild sedation, moderate sedation, and deep sedation/general anesthesia, which is available at www.dentistrytoday.com/emergency-medicine/6767-emergencydrug-kit-strategies-for-the-dental-office. Dentists should also periodically review their knowledge of emergency drugs.

Preparing for emergencies

These strategies can help reduce the likelihood of an emergency and ensure a prompt response if one occurs:

- Obtain a medical history on the patient's first visit and update it every visit, including verifying allergies and current medications.
- Ask the patient to provide information about whom to contact if an emergency occurs.
- Give instructions about medications when reminding patients about their appointment. For example, ask patients with asthma to bring their inhalers with them.
- Check vital signs before a procedure to help identify those at risk.
- Be sure each staff member knows his or her role in an emergency by creating an emergency plan, practicing the plan, and providing feedback.
- Post emergency numbers near phones.
- Ensure staff can identify signs of an emergency and know where to obtain emergency equipment.
- Create a form for documenting steps taken during an emergency so that actions such as medication administration are not inadvertently repeated.
- Debrief with staff after the emergency is resolved.

Another vital basic step is to ensure staff maintains cardiopulmonary resuscitation (CPR) skills. In October 2015, the American Heart Association released new guidelines for CPR, so check that staff receives education about the changes. (Access "Highlights of the 2015 American Heart Association Guidelines Update for CPR and ECC" at <https://eccguidelines.heart.org/wp-content/uploads/2015/10/2015-AHA-Guidelines-Highlights-English.pdf>.) Document the staff's training in their employment records.

During an emergency, document actions taken, including medications administered and defibrillation, as well as the patient's response. Detailed documentation will protect the dentist and his or her staff in the case of legal action. After the emergency, it is important to debrief with staff to determine what worked well (and what did not work well) and make adjustments as needed.

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Not just for emergency use

Although this article focuses on emergency checklists, dentists may also want to consider checklists for other aspects of care. For example, authors of an article in the *Journal of Clinical and Experimental Dentistry* proposed a Checklist for Endodontic Treatment, which was inspired by the Surgical Checklist from the World Health Organization. The proposed checklist contains 21 short items divided into two sections: those to be verified before the endodontic treatment begins and those to be verified after it is completed, but before the patient leaves the dental office.

Krombach and colleagues, writing in an article in *Anesthesia & Analgesia*, note that checklists in aviation originally began as tools used for routine flights to avoid error. The same principle could apply to the dentist office.

Delivering quality care

Crisis checklists can be a valuable tool in managing emergencies in the dental office when combined with basic principles of adequate oxygenation, CPR as needed, and medications as indicated. Checklists promote a smooth response to a crisis, giving the patient the opportunity for the best possible outcome.

RESOURCES

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