

App designed for dental teams offers step-by-step guidance in an emergency

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In a crisis, a checklist can bring clarity over confusion. First widely adopted by the U.S. military after the fatal crash of an early-model B17 "Flying Fortress" in the years before World War II, checklists have since

become a staple for fields such as aviation, nuclear energy, and medicine.

"Remember Captain Sully?" asks Morton Rosenberg, D74, professor emeritus at Tufts University School of Dental Medicine (TUSDM), referring to pilot Sully Sullenberger who famously landed a distressed airliner on the Hudson River in 2009. "He was an experienced pilot. But the first thing he did was open his list and keep repeating [the steps] to his copilot. Because while people may have been trained on the right thing to do in an emergency, sometimes they jump from one thing to another."

So when Rosenberg and a group of dentists set about creating a digital tool to help guide their colleagues through emergency situations, they turned to the checklist.

Rosenberg, an expert in the field of anesthesiology, was part of a team from the Anesthesia Research Foundation of the American Dental Society of Anesthesiology that developed a [free app](#) called [10 Minutes Saves a Life](#) for use by dentists and other members of the dental team. The app presents step-by-step instructions for responding to anything out of the ordinary that might occur in a dental office, from an anxious patient who hyperventilates to a patient experiencing cardiac distress.

"Medical emergencies don't usually happen in dental offices," Rosenberg says. "They don't usually happen in airlines or nuclear power plants, either. But we need cognitive aids for when things go bad."

The app can even be used to direct-dial 911. In fact, Rosenberg says, the name of the app comes from the finding that 10 minutes is the average time for medical emergency personnel to arrive at a dental office after an emergency is declared.

Since it debuted in 2018, the app has been downloaded more than 100,000 times, and translated into German, Russian, and Japanese. It has approximately 900 daily users. The dental anesthesiologists were joined by physician colleagues to produce a video based on the app, since much of the content can also be used by physicians who administer moderate sedation.

The app has been incorporated into the curricula of several dental schools and is used in the clinics where patients receive care at TUSDM. "It has been really helpful for us," says TUSDM Assistant Professor Jonathan Stephens, the school's chief medical officer.

Tufts dental students are trained and certified in CPR and basic life support and are educated on emergency procedures both before and after they begin treating patients in the clinic in their third year, Stephens says. Practicing dentists and dental hygienists are also required to be certified in those lifesaving skills.

State licensing boards require dentists to have specific emergency drugs and equipment on hand—such as inhalers for asthma, or EpiPens for allergic reactions, as well as a defibrillator for cases of cardiac arrest. These requirements vary depending on the level of sedation the practice offers, Rosenberg says.

The most common emergency in a dental setting is syncope, or fainting, most often from anxiety or fear—but it can sometimes indicate a more serious problem. While most patients recover quickly from a fainting spell, "it can be scary when you're [a dental student] first starting out," Stephens says. The 10 Minutes app walks users through the steps to help determine what is happening and how to proceed.

As the population ages, Rosenberg says, dentists will likely see more patients with chronic health issues that make them more susceptible to

emergency complications. Dentists also see many patients who have neglected [dental care](#) due to finances or phobia, "and eventually when they do go to the [dentist](#), a lot of them need advanced sedative techniques to get through the procedures," he says. For them, the app can help calculate anesthesia dosages based on age and weight.

The best way patients can assist their dentist in being prepared for an emergency is by providing a medical history that's as complete as possible, including all medications, Stephens says.

"Patients come in and we'll start off by taking their medical history. And occasionally they'll say, 'Why do you need to know that? You're just a dentist,'" he says. "We're not asking these questions to check a box. It really does matter. And in the unlikely event that there is some kind of emergency, we're going to be able to respond."

Provided by Tufts University

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