



## **The management of unexpected events in a general dental practice**

**Ngeow WC, Lim D, Ng CS, Chai WL.**

Faculty of Dentistry, University of Malaya, Malaysia

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### **ABSTRACT**

Medical emergencies or unexpected events are situations that all dental practitioners are trained to face, yet none hope they become a reality. Although they occasionally happen, the prevalence is rather low. This special article will touch on three aspects: before, during and after an unexpected event happening in a general dental practice. Emphasis will be given on the 'during and after' phases, which includes the activation of basic life support when necessary, and the documentation that a dental practitioner needs to prepare in the event of adverse outcome despite of efforts made to prevent and manage it.

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### **INTRODUCTION**

Medical emergencies or unexpected events can occur anytime, anywhere and to anyone. The incidence of medical emergencies happening in a dental practice is rare but not nil. A study by Girdler and Smith (1) fifteen years ago showed that prevalence of medical emergencies is rather low (Table 1).

Table 1: Prevalence of medical emergencies in the United Kingdom (Source: Girdler and Smith, 1999) (1)

Emergency situation	Patients affected per million per year	Cases per dentist per year	Average no. of years before a dentist will see a case
Vasovagal syncope	794	1.9	0.5
Angina	71	0.17	5.7
Epileptic fit	56	0.13	7.2
Hypoglycaemia	72	0.17	5.6
Asthma	26	0.06	15.1
Choking	36	0.09	11.2
Anaphylaxis	5.3	0.013	75.5
Hypertensive crisis	9.3	0.023	43.1
Myocardial infarction	2.6	0.006	151
Cardiac arrest	1.3	0.003	302
Unspecified collapse	10	0.026	37.6

These unexpected events can range from simple vasovagal syncope to as serious as anaphylactic reaction and myocardial infarction. They estimated that throughout the professional life of a dental practitioner, a dentist might most probably have at least an encounter with vasovagal syncope, angina, epileptic fit, hypoglycaemic event, asthmatic attack, and choking. Despite being uncommon, some of these emergencies are real life-threatening situations that need immediate attention. Having a patient who collapses and passes away in the dental clinic is the most unfortunate incident that can happen to the patient and the practising dentist.

## **SO, HOW SHOULD A GENERAL DENTAL PRACTITIONER REACTS DURING AND AFTER THIS INCIDENT?**

Some countries mandate that the dental practitioners are certified in basic life support and this requirement is enforced in other countries. However, our current Dental Act 1971 does not spell out this requirement. So, are we ready and well equipped to face these rare yet life threatening emergencies in our clinics when it really happens? This special article will touch on three timelines: before, during and after the incident. Emphasis will be given on the 'during and after' phases, which includes the activation of basic life support when necessary, and the paper works that a practitioner needs to deal with in case where adverse outcome occurs despite all the effort to prevent and manage it.

### **BEFORE ADVERSE INCIDENT**

Be Prepared. This Scout motto is relevant in daily dental practice. At bare minimum, the practitioner and his staff shall be trained in performing basic life support, with recertification every 2–3 years in order not to lose touch with the current practice. Nowadays under the Private Healthcare Facilities and Services Act 1998 and its Regulations 2006 (The Act), every new clinic will be inspected by the Unit Kawalan Amalan Perubatan Swasta (UKAPS), a governing body that controls the quality of practise of private dental facilities, before commencing service. According to Regulation No.75 of the Act, all private dental clinics need to provide emergency care services in accordance to its capabilities. Thus it is necessary to have the equipment to do so should such a situation arises.

However, if the dentist plans to do more invasive and potentially "risky" dental procedures such as implant treatment with sinus lifting

and bone grafting, or sedation, it is advisable to be well versed in resuscitation by having proper equipment and training. A practitioner must ensure that all equipment is regularly inspected for functionality. The practitioner would need to familiarize himself and his staff on the use of various drugs available.

The law in Malaysia requires the dentist to prepare an incident book and a death book. So, please keep these two books in the clinic. Most importantly, the dentist and his associates are advised to subscribe to a professional indemnity policy. Although it is not compulsory to subscribe in order to renew one's annual practicing certificate in Malaysia, but it is wise to do so.

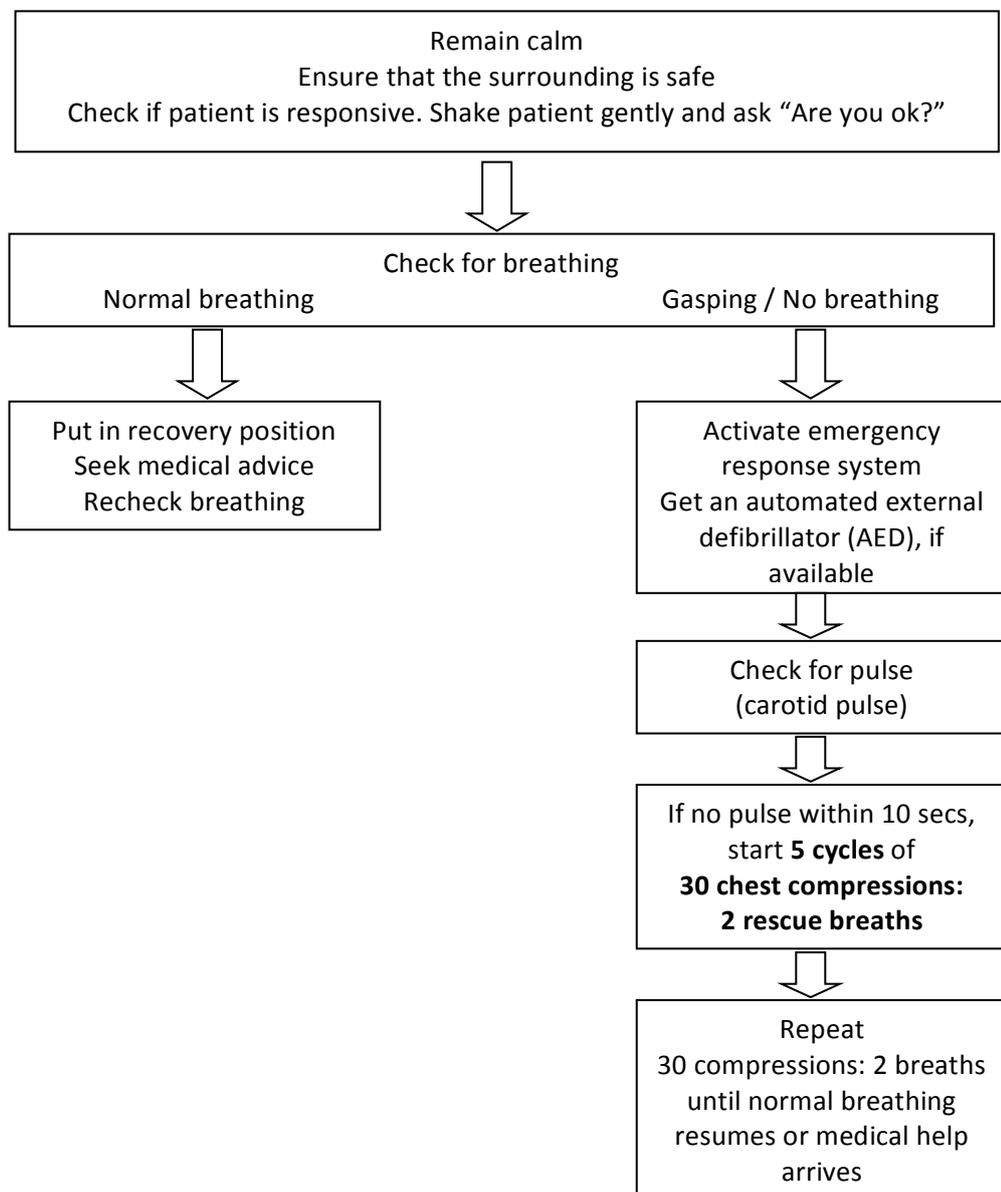
#### **WHO ARE AT RISK?**

The older population in Malaysia aged 65 or over will double from 7% in 2020 to 14% in 2043, according to Prof Dr. Tengku Aizan Tengku Abdul Hamid, Director of Institute of Gerontology, Universiti Putrajaya Malaysia (UPM) (2). Thus, dental practitioners in Malaysia will be expected to treat more senior citizens in the future. The occurrence of death in the dental clinic may become a reality as more and more of their patients are elderly, and perhaps not medically fit. It is important that dental practitioners are able to recognize patients at-risk. To identify this, a thorough medical history needs to be taken. By recognizing this group of patients, treatment plan may be modified or the patients may need to be referred to specialist centres with adequate medical support. Drug history and records should be updated on every visit.

## WHAT CAN THE PRACTITIONER DO IF A PATIENT COLLAPSED IN THE DENTAL CLINIC?

A sudden loss of consciousness and collapse can vary from syncope or fainting to the more serious cardiac arrest. Among other causes of collapse are hypoglycaemia, adrenal crisis, anaphylaxis and seizure. The algorithm in Figure 1 can be adopted in the event of a collapse happening in the dental clinic.

Figure 1: Algorithm of response



Act promptly and calmly upon the first sign of patient distress. Clinic staffs need the leadership of the principle dental practitioner during this moment of crisis. Ask the staff to call for ambulance without delay. If there are more than one trained personnel in the clinic, the second rescuer should activate the emergency response system and get the automated external defibrillator (AED) if available, while the first rescuer start cardiopulmonary resuscitation (CPR) immediately (Figure 1). A two-rescuer team is very useful to deliver uninterrupted and effective CPR. Remember to ask an assistant to clock the time of events. It is also important to inform patient's next of kin immediately.

### **HOW TO PERFORM EFFECTIVE CHEST COMPRESSION? (3)**

- Push hard and fast
- Depth of compression should be at least 2 inches (5cm)
- Rate of compression must be at least 100/min
- Allow full chest recoil before the next compression

### **WHAT CAN BE DONE IF THE DENTAL PRACTITIONER WANTS TO AVOID MOUTH-TO-MOUTH BREATHS?**

A few alternatives that can be used are mouth-to-mask and bag-mask. The use of Ambu bag definitely will make it easier and convenient to provide room air to the patient. Using these alternatives reduce the risk of infection from CPR.

### **WHAT TO DO WHEN HELP ARRIVES?**

When the ambulance arrives, inform the paramedic what happened and what medication(s) that have been given to the patient, if any. If pulse is still detected, the patient shall be taken to a nearby hospital. The dental practitioner should follow the ambulance if possible. If the patient subsequently passes away in the hospital, an autopsy will be

conducted to determine the cause of death. It is important for the dental practitioner to brief the next of kin as soon as possible.

Do note though, if the patient is pronounced dead by the paramedic, the ambulance will not take the body to the hospital. Thus, the dental practitioner will need to lodge a police report. The investigating police officer will then determine whether an autopsy is required. Most of the time, an autopsy is inevitable. The body will be transferred using a police vehicle to a nearby hospital mortuary.

Nowadays, nearly everyone has a smartphone with the capability of video recording. The dentist has to make sure that no one takes photo or video recording of the resuscitation, or even worst, of the deceased. Not even the clinic staffs are permitted to do so as the patient's dignity need to be preserved. Internet circulation of such footage is unacceptable to the grieving family and has dire consequences for both parties.

### **THE AFTERMATH**

After the adrenaline rush, it is now time for the dental practitioner to properly calm himself and gather all the details about the incident. He may need to talk to his staff to verify the timing and sequences of how the event unfolded. It is necessary to complete the consultation notes if it is not done earlier. The dental practitioner needs to write a detailed report in the incident and death record book as required by the law. He would need to write the time and date of entry in the record book. He may add on later if he recalls some details but again, it is important to put in the date and time of the latest entry.

If the dental clinic has CCTV, please do not delete the recording or let it get deleted automatically. The dental practitioner needs to secure it as evidence and investigation purpose. Again, it is the dental practitioner's duty to ensure against leakage into the Internet.

It is important for the dental practitioner to contact his professional indemnity insurance following this incidence for legal advice. If a dental practitioner in Malaysia does not have professional indemnity insurance, the next best thing to do is contact the Malaysian Dental Association to see if they can provide some assistance and/or advice.

Dental practitioners must be mindful that the current Act requires them to report the death incident to the Director General of Health (DG) as soon as possible (Figure 2).

However, what details should be included in the report is not clearly stipulated in the Act. Here are some suggestions that the dental practitioner may want to include in his report.

- The name and personal details such as age, gender, race and nationality of the patient.
- Patient's medical history that has been recorded.
- Patient's dental history.
- What dental treatment the patient was receiving at that time of the incident? Please provide the time-line of that fateful day. What medication (e.g. analgesic, antibiotics, local anaesthetic agent, sedative etc.) was given to the patient during dental treatment? And of course, what was the dosage?

**Incident reporting**

13. (1) Any unforeseeable or unanticipated incident that has occurred at any private medical clinic or private dental clinic shall be reported in writing by the private medical clinic or private dental clinic to the Director General or any other person authorized by the Director General in that behalf the next working day after the incident occurred or immediately after the private medical clinic or private dental clinic has reasonable cause to believe that the incident occurred.

(2) The reporting of unforeseeable or unanticipated incident shall include, at a minimum, the following information:

- (a) deaths of patients of the private medical clinic or private dental clinic from unexplained cause or under suspicious circumstances that are required to be reported to police;
- (b) fires in the private medical clinic or private dental clinic resulting in death or personal injury;
- (c) assault or battery of patients of the private medical clinic or private dental clinic by staff; or
- (d) malfunction or intentional or accidental misuse of patient care equipment that occurs during treatment or diagnosis of a patient of the private medical clinic or private dental clinic and that did, or if not averted would, have significant adverse effect on the patient or staff of the private medical clinic or private dental clinic,

whichever is relevant to the incident.

Figure 2: Relevant extract from the Private Healthcare Facilities and Services Act 1998 and its Regulations 2006 (The Act).

If the emergency did not occur in front of the dental practitioner, please provide details such as the first person to inform the dentist about patient's distress. When did it happen? What were the distress signs and symptoms? What was emergency treatment provided or administered? When did the dental practitioner instruct his nurse to call for help/assistance? When was the next of kin contacted if the patient came alone? When did the paramedic arrive? When did the paramedic announce the time of death (if this happens)? If possible, please substantiate the time with evidence such as the clinic

management programme record, detail from phone bill or even CCTV footage recording.

Please submit the nurse's written statement about the incident. She needs to sign the statement. The dentist may also include her subsequent interaction with the deceased's next of kin if it is deemed to be important.

The dental practitioner can search the Director General of Health's office phone number through the website <http://www.moh.gov.my/>. The DG office will inform the dentist on “how and to whom” to submit the report via email or normal mail. The dental practitioner needs to provide them with his contact number. Do note that the above requirement is only applicable to private dental practitioners. Dental surgeons practicing in a government setting have different requirement to follow, and it is best that they familiarize themselves with the protocol of the dental clinics or hospitals they are working at.

### **THE INVESTIGATING PROCESS**

An UKAPS investigating team will come to the dental clinic once a report has been filed. All staffs will be interviewed and their statement recorded. The investing officers will take photographs of the clinic, computer screen, copies of incident and death record book, and the patient consultation record. They will view the unedited CCTV footage carefully. All details in the submitted report will be verified, especially the time of events. The dental practitioner will be asked to walk them through the event.

The investigating team will submit its report to the Director General who may give further instructions to them if necessary. There are several possible outcomes of the UKAPS investigation, namely:

- 1) No further action if no law is broken and no misconduct is found.
- 2) Suggestion of prosecution if the law is broken. The dentist or clinic will be charged in court.
- 3) Forward the report to Malaysia Dental Council to take further action if negligence, misconduct or unethical practice is found.

Regardless of the outcome of the UKAPS investigation, it is important for the dental practitioner to be aware that he may face civil litigation from the deceased's next of kin. Legal advice should be sought as soon as possible. The authors hope that this article will be of use to private dental practitioners if they are faced with such an unfortunate incident.

#### **CORRESPONDING AUTHOR**

Associate Professor Dr Chai Wen Lin  
Faculty of Dentistry,  
University of Malaya, Malaysia  
[chaiwl@um.edu.my](mailto:chaiwl@um.edu.my)

#### **REFERENCES**

1. Girdler NM, Smith DG. Prevalence of emergency events in British dental practice and emergency management skills of British dentists. *Resuscitation*. 1999; 41:159–167
2. Loh Foon Fong. The Star 9/8/2015, Silent 'epidemic' of aging.
3. Hazinski MF (2013). BLS for healthcare providers. American Heart Association. USA