

Medical Emergencies – Core Skills

Catherine Rutland advises on managing some of the medical emergencies that can arise when treating patients in general practice.

Ongoing registration with the GDC requires dental nurses and other dental care professionals to undertake a range of continuing professional development (CPD). The dental nurse is, however, a busy person, making multiple complex clinical decisions while remaining alert to the hidden challenges their patients bring – so how do recognise the most appropriate training route to take?

One way to reconcile the need for CPD and the increasingly time-consuming role of the dental nurse is for them to undertake training in recommended Core Skills – such as medical emergencies. The following information will give you a taste of what you can expect from such training and how it can not only benefit you professionally, but also be a valuable string to your practice’s bow and, ultimately, a life-saving skill for your patients.

Being aware

Recent population data suggests that we now live longer and retain more teeth¹. Advancing age, however, rarely comes without medical challenges - suggesting that our patient base is becoming more ‘medicalised’. A recent survey of 1,800 medical history sheets from 20 dental practices in the southwest of England indicated that 60% of patients had received a medical diagnosis and 70% were taking some form of medication².

When faced with so many potential medical challenges the ‘WHITE’ principle question based approach may help address potential issues:

¹ Mid-year population estimates, Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency. Population projections for 2034 are ONS National Population Projections (NPP) 2008 based.

² Crean StJ, Hammond D *et al.* Designing a medical curriculum for dental students. Submitted Journal Dental Education (2010).

W	What is the medical condition?
H	How is it treated?
I	What Impact will this medical condition have on my treatment plan?
T	What impact will my Treatment have upon the medical condition?
E	Can I deal with this condition if it becomes an Emergency?

Faced with medical emergencies, any dental nurse who is not practising 'care guidelines' on a regular basis faces the challenge of adopting a reliable and effective management approach. With dentists likely to encounter a medical emergency only four to six times in a 40-year working life, you're unlikely to have many opportunities to practice the regimes, so you have to rely upon the CPD cycle to remain informed and ready to respond when required³. The number of potential acute illnesses which may prove a challenge are many and unlike the exam station, patients have a habit of becoming ill without letting you know their diagnosis!

Is it life threatening?

The first issue is to decide if the situation is life threatening. You may have very little experience in making these important judgements, but the public will expect an informed interpretation. Luckily, the body will probably provide signals the life is under threat, arising as a result of the activation of the SYMPATHETIC and inactivation of the PARASYMPATHETIC nervous system.

The sympathetic activation results in a release of adrenaline, resulting in:

- Increased heart rate
- Increased respiratory rate
- Pale, cold and clammy skin
- Dilated pupils
- Fear
- Eventually disturbed higher function such as visual disturbances and eventually loss of consciousness

³ Sproat C, Burke G and McGurk M. Essential Human Disease for Dentists. Churchill Livingstone Elsevier 2006. ISBN: 0-443-10098-5.

Inactivation of the parasympathetic system results in:

- Dry mouth
- Nausea
- Vomiting

Managing the unwell patient

The second issue you need to bear in mind is having a reproducible approach to managing the unwell patient. I'm sure you have all come across various techniques and easy to remember methods in the past, but I always found the ABCDER approach⁴ the easiest to remember:

A	Establish an effective A irway (head lift, chin lift, speech)
B	Establish whether the patient is B reathing normally (normal respiratory rate = 12-14 breaths per minute)
C	Assess the C irculation (capillary refill, nails)
D	D isability and neurological assessment – AVPU (A: alert and awake; V: responds only to verbal command; P: responds only to pain; U: unresponsive)
E	E xposure and environmental control (have a good look for any signs of life-threatening illness e.g. rash/swelling/bruising)
R	R epeat on a regular basis until help arrives as situations can change quickly.

Some payment plan specialists can offer a range of training days to help you cement this knowledge for future use as well as gaining that all-important verifiable CPD. These courses can focus on all the core skills required by the GDC, including ethics, complaint handling and medical emergencies, or you can ask for more specialist knowledge on a certain topic through a tailor-made event. They can also be undertaken either as a team at your practice, or with other people in similar roles at a local venue.

Main emergencies

Most patients know they have a condition and are great at letting you know that they have their medication with them, such as asthma inhalers or GTN spray or tablets etc. However, it is worth

⁴ Resuscitation Council (UK) Medical Emergencies and Resuscitation-Standards for clinical practice and training for dental practitioners and dental care professionals in general dental practice. www.resus.org.uk/pages/medental.htm

asking a patient where their medication is if you know they have a specific illness and it's not immediately clear.

That said, medical emergencies are, let's face it, unpredictable by nature. However by gaining the best possible understanding of the emergencies which dental teams come across most regularly, you are putting yourself in the best possible position should these occur in your own practice.

Some of the most common emergencies a dental nurse must be ready to deal with include:

Fainting

Stop all work. Place the head below the heart and administer oxygen (10-15l/min). Loosen any tight clothing and give the patient a sugary drink when they have recovered. Repeat every ten minutes and ensure the patient is cared for on leaving the practice.

Epilepsy

Stops all work and make sure the patient and the environment is made safe. Do not restrain the patient, but take care to ensure they don't come to any physical harm. Administer oxygen if possible.

If fitting does not cease firstly check to see if the pulse is over 40 to rule out hypoxic fits (when the body is starved of oxygen and the patients loses consciousness). On recovery, give the patient a sugary drink and ensure they are taken home (no driving!). They should also be looked after for 24 hours by a relative/responsible living partner. If it was the patient's first fit, if there is a risk of recurrence, if they are difficult to monitor or if they have injured themselves, they must be taken to an Accident and Emergency for review. If fitting continues for more than five minutes (Status epilepticus) then CALL AN AMBULANCE and while waiting for them to arrive administer 10mg of buccal or nasal midazolam. Keep them monitored.

Cardiac chest pains

If pain is central and crushing, radiating down the left arm, into back and/or upper-central region of the abdomen consider an ischaemic heart event (angina). After stopping work, provide oxygen (10-15l/min) and 500micrograms (two puffs) of GTN spray sublingual. Repeat once after five minutes if needed. If this does not work again and the patient has pale skin, sweaty skin, nausea or vomiting then CALL AN AMBULANCE. While the ambulance is coming support the patient, make them comfortable and give them oxygen (10-15l/min) a soluble/chewable aspirin (300mg) and keep an eye on them to ensure they do not suffer a cardiac arrest.

Hypoglycaemia (blood glucose <3mmol/l)

If you recognise a hypoglycaemic reaction, give the patient a sugary drink while they are cooperative (10mg glucose, or half a can (150ml) carbonated drink). If they refuse to drink this try glucogel (formally hypostop) which is also 10mg of glucose in gel form, squeezed into buccal sulcus. Both should be repeated every 10 minutes to ensure full recovery. However, if the patient loses consciousness then 1mg of glucagon should be injected in the anterolateral thigh. If this does not work within two minutes then CALL AN AMBULANCE.

Anaphylaxis

Early recognition is vital – CALL AN AMBULANCE straight away. Then place the patient in the head-down position and apply oxygen (10-15l/min). Also administer 0.5mg adrenaline IM and repeat if necessary every five minutes. If wheezing is noted then 400micrograms (four puffs) of salbutamol (via spacer) may help. Keep monitoring the patient for any signs of deterioration.

Asthma

This terrifying event requires early recognition (inability to complete sentences in one breath). Work should cease and 400micrograms salbutamol (via spacer if necessary) administered. If after 10 minutes it does not work, CALL AN AMBULANCE. While waiting, repeat the salbutamol

up to 600micrograms every 10 minutes, if the patient can tolerate it (palpitations and tremors).
If they recover, ask the patient to take a bronchodilator prior to their next visit.

Addisonian crisis

Suppression of the adrenal gland by exogenous steroids will prevent the release of cortisol in response to stress such as significant oral surgery. If suspected in a collapsed patient - CALL AN AMBULANCE. Then put the patient in the head-down position and administer oxygen (10-15l/min) until help arrives.

The information above is only a short summary of the kind of medical emergencies you may come across in your career, but the ability to respond to these various situations is a vital core skill for all dental nurses. Ability will only arise from regular practice and revision, so it's a good idea to make time for this in your working year. The need to monitor these skills regularly is also key and this is where appropriate training and development can really help. How you go about this, I will leave in your very capable hands!

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1,689 words

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Catherine qualified in dentistry, BChD, in Leeds in 1992. After gaining three years postgraduate experience at Leeds Dental Institute and Newcastle Dental Hospital, she decided to expand her career into general dental practice. She is now Practice Principal at Broadway Lifesmiles in Berkshire and has been Dental Advisor at Denplan since 2010.