With erythrocyte membrane deformation and disordered microvasculature leading to multi organ failure in sepsis, the consequences following inaccurate arteriolar oximetry are seldom less than catastrophic²

3. Maintaining SpO₂ as a sign of sepsis is novel, but requires a pulse oximeter, which not every dental practice has. NICE helpfully recommend maintaining 40% FiO₂ (inspired oxygen fraction) as a sepsis-sign.⁴ FiO₂ is calculated by adding the volume of 100% O₂ given, to the volume of air inspired: 21% O₂ (each breath being: 0.7 X body weight in Kg) and dividing these by total volume of O₂ and air
4. Being cool, calm, collected then calculating in an emergency is a rare skill. Thankfully, patients with COPD at risk of hypercapnic failure carry alert cards and colour-coded Venturi high flow oxygen filters, commonly: Blue (24%) and White (28%).⁵ Should a dental patient at risk of sepsis with COPD become hypoxic, ascending from Blue, to White then the Red (40%) Venturi visibly declares an emergency and an ambulance is called
5. With the Red Venturi, the patient's respiratory demand is safely exceeded with a titrated high-flow ventilation volume of 12 L/min O₂ (50 L/min O₂:air volume), matching higher ventilatory demands, reducing immediate risks from tissue hypoxaemia, delaying risks from atelectasis, pulmonary vasoconstriction and pulmonary perfusion:ventilation mismatch causing respiratory acidosis.⁵

Certainly, giving oxygen in a dental practice is neither free, nor free from risk, especially in patients who may have both conditions. The decision to use oxygen at 15 L/min reduces the risk from sepsis, but may present a risk to those with COPD. Decisions in any emergency are based on evidence, experience and not least respiratory medical practices being developed during the COVID crisis.

J. Laszlo, London, UK

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<https://doi.org/10.1038/s41415-020-2465-y>

Clinical audit

Avoiding a 'tick-box' exercise

Sir, as a dental core trainee (DCT) it is mandatory to have completed an audit for successful completion of the training year, and also two-cycle audit completion is assessed during the application process for specialty training.

The Care Quality Commission outlines certain mandatory audits for dentists working in primary care, including audits related to infection prevention and control, radiographs and accessibility to facilities.¹ Hospital trusts also have specific mandatory audits which must be completed.

Due to the short amount of time DCTs spend in their training posts, audits and service evaluation projects are often limited or restricted to these mandatory projects, or as an alternative, a second cycle completion of a previous audit. This is severely restricting to a DCT in terms of completing two-cycle audits, and also less likely that a completed project would be suitable for poster presentations which are also essential for career progression.

I would request that as well as the mandatory audits, if possible, dentists and dental care professionals could consider other audits, perhaps of a more novel and unique nature.

Potential audits and research projects to consider could include:

- Assessment of mental capacity and compliance with the Mental Capacity Act
- Management of dental trauma and compliance with the up-to-date dental trauma guidelines
- Management of medical emergencies
- Proportion of two-week wait referrals that were for patients that actually had malignant pathology.

Audits and service evaluation projects should result in improved clinical quality and efficiency. In the General Dental Council's *Standards for the dental team*, Principle Seven states that members of the dental team must 'provide good quality care' and 'update and develop professional knowledge and skills'.² These projects are one way of achieving this.

It is important that health professionals have a positive attitude towards such projects, and avoid limiting clinical audit to the mandatory topics, to avoid box-ticking.

S. Acharya, Liverpool, UK

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<https://doi.org/10.1038/s41415-020-2466-x>

Emergency dentistry

Simple measures

Sir, we recently completed an audit assessing the appropriateness of patients presenting to the adult emergency department (ED) at the Bristol Royal Infirmary with pain and/or facial swelling of dental origin.

Mayor stated that one in every 140 visits to the ED is for dental issues.¹ The following conditions warranted emergency dental care:

- Uncontrollable dental haemorrhage following dental extractions
- Rapidly increasing swelling around the throat or eye of dental origin, and may be associated with acute systemic illness and/or trismus
- Injuries to the face, mouth or teeth.^{2,3}

These were used as the audit gold standard and 134 patients presented to the ED with a dental complaint during the two-month audit period: 24% (32/134) were deemed to be appropriate and met the emergency dental/oral care criteria set above. The majority presented with toothache (45%) and facial swelling (26%) and 66% attended between 08:00–20:00 when dental and out-of-hours facilities are typically open, suggesting barriers to accessing dental care. The ED managed 38% of cases; the oral and maxillofacial surgery (OMFS) team managed 35% of cases with 12% managed by the ED but with an opinion obtained from the OMFS team. The remaining 15% of patients self-discharged post registration. Interestingly, 60% of patients were managed by a combination of analgesia, antibiotics and advice.

Most patients were seen by clinicians or healthcare professionals who were not dentally qualified in ED, a setting where definitive care

could not be provided. Factors contributing to ED attendance for a dental complaint include cost, lack of knowledge of services available and difficulty accessing urgent dental care.² As an education resource, we created a leaflet to be distributed to patients attending the ED detailing information on their dental condition, potential treatment options and how to access appropriate urgent dental services. Additionally, we plan to organise teaching sessions to aid our colleagues in assessing and managing such patients and identifying those who warrant assessment and intervention by the OMFS team.

Patients attending inappropriately to an ED for a dental complaint ultimately represent a misuse of hospital resources and already limited clinician time. Simple measures, such as those we have implemented, may contribute to more effective management of these patients, and provide support to our colleagues in ED especially in the current pandemic.

S. Mohamed, A. Mohamed, Bristol, UK

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<https://doi.org/10.1038/s41415-020-2467-9>

Holistic dentistry Strokes and dental anxiety

Sir, a 46-year-old male was referred from the stroke ward of the neighbouring hospital to an urgent dental care (UDC) unit. The patient had very recently suffered a stroke and was, coincidentally, due to have a tooth taken out by a GDP the following Monday under local anaesthetic (LA). He was accepted by the UDC unit with a treatment plan to extract the tooth under LA.

However, he refused to have the tooth extracted under LA, advising that he was too dentally anxious and required the tooth to be extracted under general anaesthetic (GA). It was explained that a GA was not appropriate given his recent stroke and also the simplicity of the extraction. Following further discussions

and given that the patient was not in acute pain with no signs of spreading infection, the decision was made to delay treatment.

Initially clinicians were surprised at the patient's adamant decision, having previously agreed to treatment under LA just days previously. However, some research into recovery post strokes revealed that an increase in anxiety is one of the most common psychological problems.¹

Given the significant impact that strokes have on an individual's life and the physical injury that is suffered to the brain, it should be unsurprising that an increase or new onset of dental anxiety is a consequence. It is worthwhile for clinicians to have a heightened awareness and sensitivity of this. In addition to appropriate use of LA and management of anti-coagulants or antiplatelet medications, this will help in achieving a holistic approach to treating patients with a history of stroke.

S. Pahal, Birmingham, UK

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<https://doi.org/10.1038/s41415-020-2468-8>