Emergency medicine training

Sir, it is essential that emergency medicine hospital staff have a basic understanding of dental and maxillofacial pathology. We analysed the local trauma data at Derriford Hospital from March–May 2020 using the emergency department software. Searches in treatment summaries were used to identify cases where dental and oral and maxillofacial surgery trainees were requested to give input to a patient's care.

We then designed a training package that covered the in-demand areas and the most prevalent referrals. This consisted of a lecture with various visual aids based around anatomy, diagnosis and treatment delivery. This was delivered on several occasions, both in person and remotely, to clinicians of various seniorities within the emergency department from consultants to nurses. The training was enthusiastically received on all occasions as evidenced in subsequent feedback.

We feel that the targeted training package has addressed many of the deficits and there is significant room within the emergency medicine training programme to measure, focus and develop such content to the needs of junior doctors.¹

We hope to encourage other dental and oral and maxillofacial surgery departments to get involved in training within their respective emergency departments and recognise that this can bring benefits in the form of improved co-operation, reduced referral load for minor conditions and better patient care.

M. Bosov, K. Skorko, Plymouth, UK

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Dental education

Dental teacher training

Sir, historically healthcare accepted that knowledge and experience translated to competent teaching, but the disparity can be vast. Medicine recognised the professional obligation for all to teach, subsequently adopting it as a core role for doctors. Similarly, dental educators acknowledged

the need for teacher training (TT), but the profession persists with limited guidance and no mandate for it. Would dentistry benefit from mandatory TT, or would the barriers to implementation overshadow progress?

A sophisticated student body has emerged following the increase in tuition fees and rise in graduate entry standards, culminating in a shift towards higher teaching expectations. The literature has long documented concerns from students and educators over teaching standards in hospitals, demonstrating desire to change. The positive impact regular TT has on student learning is recognised and highlighted by employees' requests for teacher experience. Collectively, this illustrates that a system-wide desire and argument for TT exists, suggesting that no change to current practice could be detrimental to the profession.

Possible solutions addressing shortfalls in TT have been identified in the literature, bestowing responsibility on clinicians, institutions and regulatory bodies alike. Favourable outcomes have been reported with the integration of specific programmes, increased funding, protecting teaching time and modifying attitudes towards teaching.

Despite recognition from all parties of TT's positive impact, a number of challenges would limit mandatory implementation. All solutions demand increased time and economic input, in an era where there is an ever-growing pressure to reduce costs, a downward trend of teachers compared to students and an increase in patient numbers, it seems unrealistic that significant changes could be made soon. Furthermore, reliable methods of measuring the impact of TT remain elusive and there is conflicting literature on the long-term effectiveness of teaching qualifications. This creates uncertainty for institutions in justifying budgetary allocations to this domain.

The presumption that clinical expertise alone can fulfil dental teachers' educational obligation is no longer tenable and the benefits of formal TT are understood. The conflicting demands of clinics, teaching and administration, economic and time constraints create a complex situation. Further research is needed to conclude mandatory TT's overall impact, but input from the dental regulatory bodies could be a step in the right direction.

H. Hawrot, Leeds, UK

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Infection control

PW-I for all? Not yet

Sir, I read with interest the recent paper on the recommendations to use povidone iodine mouthwash as part of routine infection prevention and control (IP&C) measures in dental practice.¹

There are several limitations in the methodology of this study that should be considered when assessing this recommendation. The manuscript implies that the British and European Standard BS EN 14476² was fully complied with in testing this disinfectant; this was not the case, for example:

- Concentration tested: BS EN 14476 specifies that products can only be tested at a concentration of 80% (97%, with a modified method for special cases)
- Controls used: The standard recommends using a well characterised disinfectant (such as formaldehyde) as a control of the test system. This was not used. A negative control comprising the mouthwash diluent ie iodine as the active ingredient removed, is a more appropriate control than water
- Neutralisation effectiveness evaluation: The authors highlight quite rightly the importance of disinfectant neutralisation to ensure '...that there were no after effects of the test product beyond the specified contact time.' However, no validation of this method was presented, invalidating the authors' results
- Activity in the presence of soiling: To be fair the authors did use concentrations specified in EN 14476, however, these are not relevant to the oral cavity. The standard specifies that 'the interfering substance shall be chosen according to the conditions of use laid down for the product.' A relevant contaminant for an oral rinse product is mucin.

Finally, the concept of a pre-procedural anti-viral rinse as part of IP&C protocols has recently been considered by a number of groups³ and insufficient evidence has been noted to recommend its routine use, principally, the washout effect of saliva would negate any potential anti-viral effect shortly after application unless the active agent demonstrated substantivity. The use of an anti-viral mouthwash as an IP&C measure is an interesting concept but the data from this

publication for this product fail to provide sufficient evidence of its potential and there is no compelling case for its routine use.

A. Smith, Professor & Consultant Microbiologist,
Glasgow, UK

Pouya Hassandarvish responds: Thank you to Professor Smith for reviewing the article and raising key concerns on the study methodology. We reviewed the questions and hope to clarify some of them.

‘Concentration tested: BS EN 14476 specifies that products can only be tested at a concentration of 80% (97%, with a modified method for special cases)’

Response: The reaction mixture that was used to carry out this study consisted of eight parts of product that were tested, one part of virus and one part of Dirty/Clean condition formula. Therefore, the product was tested at a concentration of 80%.

‘Controls used: The standard recommends using a well characterised disinfectant (such as formaldehyde) as a control of the test system. This was not used. A negative control comprising the mouthwash diluent ie, iodine as the active ingredient removed, is a more appropriate control than water’

Response: The assay was performed with a negative control to demonstrate that the virus did replicate in the absence of disinfectant signifying that the product had the ability to demonstrate antiviral efficacy. We were not trying to compare with a known disinfectant, rather we wanted to demonstrate that the product was effectively able to neutralise the virus compared to the negative control. We do agree that the best negative control would have been the formulation without iodine. However,

due to the seriousness of the pandemic and lead time required to generate a stable iodine free formulation, we decided to use water as a control. Water is also used for gargling routinely in several geographies and we believed that it could be a negative control.

‘Neutralisation effectiveness evaluation: The authors highlight quite rightly the importance of disinfectant neutralisation to ensure “...that there were no after effects of the test product beyond the specified contact time.” However, no validation of this method was presented, invalidating the authors’ results.’

Response: We agree that this is a very valid comment. We did perform neutralisation assay and the same was effective. We did not present the neutralisation data in the publication since these were a part of assay optimisation. Moreover, PVP-I product has been tested previously by experts using the same methodology against other coronaviruses and the product has demonstrated efficacy and these articles have been published in peer reviewed journals.

‘Activity in the presence of soiling: To be fair the authors did use concentrations specified in EN 14476, however, these are not relevant to the oral cavity. The standard specifies that “the interfering substance shall be chosen according to the conditions of use laid down for the product.” A relevant contaminant for an oral rinse product is mucin.’

Response: Thanks for raising this point. We agree that mucin would have been a better choice as an interfering substance since this is an oral product. We used BSA and sheep erythrocytes since these were routinely used

for EN 14476 testing methodology as an interfering substance in line with previous studies.

‘Finally, the concept of a pre-procedural anti-viral rinse as part of IP&C protocols has recently been considered by a number of groups³ and insufficient evidence has been noted to recommend its routine use, principally, the washout effect of saliva would negate any potential anti-viral effect shortly after application unless the active agent demonstrated substantivity.’

Response: There has been data on PVP-I demonstrating lasting effect after applications. In some of our other internal studies that have been performed with the use of PVP-I gargle there was a decrease in bacterial loads immediately after gargling with lasting effect up to three hours, after which there was increased repopulation of the bacteria in the oral cavity. Thereby, despite salivary washout the effect of PVP-I seems to last for three hours post gargling, supporting the use of this product for pre-procedural mouthrinse.

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