The attitudes and awareness of UK emergency department (ED) physicians towards the management of common dentofacial emergencies

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Abstract

Background Dentofacial emergencies which are a common presentation to the emergency department (ED) and there is little data on how they are managed by non-dentally trained clinicians in the ED. **Aims**: To investigate the attitudes and awareness of ED physicians towards four common aspects of dentofacial emergencies and to explore potential barriers ED physicians may face in treating these emergencies. **Methods** A questionnaire survey involving 103 ED physicians largely from around the London region was employed. **Results**: Th**e** cohort included ED consultants (n=33), ED registrars (n=33) and ED juniors (n=37). 76.5% reported as not having any formal training in managing these emergencies. The study found that the percentage of participants who were confident in managing dental trauma was 20.4%, major facial trauma (40.6%), interpreting facial x-rays (69.3%) and facial suturing (86.3%). A subgroup of the cohort (n=58) were questioned on who they felt should manage maxillofacial and dental emergencies. 51.7% felt that dentists should manage dental emergencies and 67.2% thought that maxillofacial surgeons should manage maxillofacial emergencies in the ED. Only 12.1% and 22.4% felt that ED doctors should treat dental emergencies and maxillofacial emergencies respectively. When asked who they would like to be treated by in the event they presented to the ED with a traumatic dental injury (n=102) only 3.9% favoured ED as treating speciality compared to 23.5% treatment by a dentist and 72.5% by a maxillofacial surgeon. None of the participants opted treatment by an ENP. **Discussion**: Although based on a limited study sample the data suggests that ED doctors do not feel confident in managing some dentofacial emergencies. This may be attributed to a lack of training in this area as well as exposure to these types of emergencies. Furthermore the confidence level reported may not reflect actual competence and there is a need for greater awareness, validated guidelines and training resources for ED clinicians to treat dentofacial emergencies as well more research in this field of emergency medicine.

Key Words: Dental emergencies ; ED physicians; Dental trauma

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Introduction

Dental and maxillofacial emergencies comprise of a broad spectrum of clinical presentations which include trauma, dental pain, lost restorations, post operative complications, infections, haemorrhage and soft tissue lesions. Maxillofacial emergencies also include trauma to the facial skeleton as major infections involving the soft tissue structures of the head and neck. In reality the boundary between what can be classified as a 'dental' or a 'maxillofacial emergency' is often blurred and it may be useful to combine these emergencies under a unified description of 'dentofacial emergencies' which encompasses those emergencies relating to the dentition as well as the jaws and surrounding structures.

Dentofacial emergencies are a common presentation to the emergency department (ED). Although data on the attendance of patients with these types of emergencies are meagre, studies have shown that dental emergencies represent 0.3-0.4% of the overall patient workload in the ED (Patel and Driscoll 2002, Pennycook et al 1993). Conversely the percentage of patients presenting to the ED with facial injuries may be much higher and this figure may be as high as 4% (Hutchinson et al 1998, Trivedy et al 2007).

Unlike other emergencies that present to the ED, dentofacial emergencies are unique and are challenging for many reasons. Firstly the vast majority of UK ED physicians who are at the frontline for managing these patients have little or no formal training in clinical dentistry. As a result many ED clinicians may lack the knowledge or necessary skills to manage these patients safely. A UK study involving 102 junior doctors (senior house officers) from across the UK found that 52% had no previous training in examining the oral cavity and only 6% had any formal training in clinical dentistry as medical undergraduates (Patel and Driscoll 2002). Secondly, as NHS dentistry is not free in the UK, patients may present to the ED with dental complaints rather than seeing their own dentist due to financial constraints. This was highlighted in a survey involving over 5,000 patients carried out by the Commission for Patient and Public Involvement in Health in 2007 which found that over 20% of participants couldn't afford to see a dentist (Dental Watch Survey 2007).

Despite the large volumes of patients attending the ED with dental complaints there is little UK data on the knowledge base of non dentally trained staff in their management of dental emergencies. Table 1 demonstrates the wide variation in the knowledge on the management of dental trauma by non dentally trained personnel. The studies also show that the lay knowledge of managing dental trauma that non clinical professionals have is comparable to the knowledge of medically trained physicians.

Table 1: The knowledge of the management of dental trauma by non dentally trained professionals

Author	Country	Subjects	Sample size	% with knowledge or training regarding the management of dental trauma
Daiz et al 2009	Chile	ED staff	82	9.8
Subhashraj 2009	India	Non ED physicians	200	10
Levin et al 2007	Israel	Military physicians	80	17.4
Abu-Dawoud et al 2007	Kuwait	Non ED Physicians	30	3.4
Addo et al 2007	UK	ED doctors Teachers	17 62	63 60.8
Blakytny et al 2001	UK	Teachers	274	33.6
Walker and Brenchley 2000	UK	ED staff	33	33

Aims

The aim of this study was to explore the attitudes of emergency physicians to the treatment of dentofacial emergencies and highlight any barriers ED clinicians have in managing these types of emergencies. The study was a cross sectional survey of UK ED physicians' views and experience of managing dentofacial emergencies in the ED as well exploring their confidence in treating these emergencies.

Participants

The participants for the study were recruited over a three year period on two occasions in 2007 and 2010. The first cohort was recruited from the emergency department at St Thomas' hospital which is a teaching hospital in London. The cohort comprised 45 emergency physicians who gave their verbal consent to participate in the study. None of the participants who were approached by the principal investigator (CT) refused to take part in the study. An additional cohort 58 participants were similarly recruited by the investigators during a 2 week period in 2010. Forty seven (81%) of these were working in three London emergency departments (St Thomas', The Royal London and St Georges hospitals) The remaining 11 (19%) were emergency medicine trainees from across the UK who were recruited from an emergency medicine conference for trainees held in July 2010. The participants' grades and level of experience are shown in Table 2.

Table 2: Participants' amount of experience in emergency medicine

Length of experience of EM	Grade of EM doctor (n=103)		
	Consultant	**Senior trainee**	**Junior trainee**
Less than 6 months	0	3 (2.9%)	23 (22.3%)
6 months - 1 year	0	0	4 (3.9%)
1-5 years	3 (2.9%)	22 (21.4%)	1 (1.0%)
5-10 years	11 (10.7%)	3 (2.9%)	0
>10 years	13 (12.6%)	0	0
Missing	6 (5.8%)	10 (9.7%)	4 (3.9%)
Total	33 (32.0%)	38 (36.9%)	32 (31.1%)

Of these 33 were consultants who had completed their certificate of completion of training (CCT) in emergency medicine (EM), 38 registrars who were classified as those who were above ST3 in EM or were clinical fellows and were working on the middle grade rota and 32 junior doctors who were classified as being ST2 in EM or below.

The second cohort (N=58) completed the modified questionnaire containing additional questions. Of these 19 were consultants, 25 were senior trainees and 14 were junior trainees. The comparison between 2007 and 2010 cohorts showed no significant difference in grades or experience. For the purpose of analysis, we treat two cohorts as one dataset for most part of this paper. The results for the second cohort will be discussed separately where appropriate.

Methods

Questionnaire design

A questionnaire was developed and piloted to look at the demographics, experience, exposure, confidence and awareness regarding common dentofacial emergencies. The original questionnaire was developed by the lead author (CT) and piloted to 10 volunteers and revised before starting the main study. It examined the participants' demographics, level of experience in emergency medicine, and level of exposure and training in managing dentofacial emergencies. Self reported confidence in managing dentofacial emergencies was assessed using a three point scale (3=manages the emergency confidently without supervision, 2=manages under supervision or 1=not manage at all). Further questions elicited their views on which speciality in general should manage dentofacial emergencies presented to the ED, and which speciality they would like to be treated by if the participant was presented to the ED in the event of them sustaining a traumatic dental injury. The modified questionnaire was piloted in a similar fashion. Further questions explored the participants' opinions about what should be classified as a dental /maxillofacial emergency, acceptable

waiting times for specific emergencies in the ED, and useful resources for training ED staff on the management of dental and maxillofacial emergencies. Some of the participants did not complete every section requested on the questionnaire resulting in some of the data being incomplete. As a result some of the data presented does not equate to the total number of participants in the study.

Results

Access to maxillofacial support

The study looked at participants' access to specialist maxillofacial support. 59 (57.3%) had no access to an onsite maxillofacial opinion but had access to a specialist local unit which provided 24 hour telephone advice and referral service of these 45 were from a single ED (St Thomas' hospital in London). 4 (3.9%) had access to on site support between the working hours of 9-5pm and 30 (29.1%) had access to 24 hour on site support.

Level of training received

The participants were asked about the type of education they had received on the management of dentofacial emergencies as a part of their training in emergency medicine. This included formal certified training course, clinical attachments in maxillofacial surgery, informal teaching from colleagues, tutorials or opportunistic shop floor training. The results showed that the majority of the cohort 78 (75.7%) had received informal training on managing dentofacial emergencies. Only 11 (10.7%) received any formal training and 12 (11.7%) had no training on managing these emergencies at all.

Exposure to maxillofacial emergencies

The study looked at the cohort's exposure to common maxillofacial emergencies and the results are summarised in Table 3.

Table 3: The exposure of the participants to aspects of common maxillofacial emergencies over a three month period

	Dental avulsion	**Facial x-rays**	**Major facial trauma**	**Facial suturing**
Frequency of exposure (cases)	**No (%)**			
Whole cohort				
0	63 (61.2)	9 (8.7)	41 (39.8)	17 (16.5)
1-10	31 (30.1)	40 (38.8)	33 (32.0)	42 (40.8)
11-20	5 (4.9)	13 (12.6)	2 (1.9)	7 (6.8)
>20	1 (1.0)	37 (35.9)	24 (23.3)	32 (31.1)
Missing	3 (2.9)	4 (3.9)	3 (2.9)	5 (4.9)
Total respondents	103	103	103	103
Consultants				

0	14 (42.4)	2 (6.1)	7 (21.2)	8 (24.2)
1-10	15 (45.5)	11 (33.3)	11 (33.3)	9 (27.3)
11-20	3 (9.1)	4 (12.1)	0	1 (3.0)
>20	0	14 (42.4)	13 (39.4)	11 (33.3)
Missing	1 (3.0)	2 (6.1)	2 (6.1)	4 (12.1)
Total respondents	33	33	33	33
Senior doctors				
0	17 (44.7)	1 (2.6)	12 (31.6)	2 (5.3)
1-10	16 (42.1)	12 (31.6)	14 (36.8)	18 (47.4)
11-20	2 (5.3)	5 (13.2)	0	3 (7.9)
>20	1 (2.6)	18 (47.4)	11 (28.9)	14 (36.8)
Missing	2 (5.3)	2 (5.3)	1 (2.6)	1 (2.6)
Total respondents	38	38	38	38
Junior trainees				
0	32 (100)	6 (18.8)	22 (68.8)	7 (21.9)
1-10	0	17 (53.1)	8 (25.0)	15 (46.9)
11-20	0	4 (12.5)	2 (6.3)	3 (9.4)
>20	0	5 (15.6)	0	7 (21.9)
Total respondents	32	32	32	32

Table 3 shows some relationship between grade and exposure, for example higher exposure to avulsion in senior grades (X^2 = 26.7, P<.001). A similar pattern was found for X-ray and trauma but there was no significant difference across experience/ grades for suture where exposure was broadly similar.

Level of confidence in managing common dentofacial procedure

In order to gauge how confident the participants were in relation to aspects of managing commonly presenting dentofacial emergencies all of the subjects were asked to grade their confidence in the management of four common presentations. These results are shown in Table 4.

Table 4: ED physicians self reported levels of confidence in managing common dentofacial emergencies

	Dental avulsion	**Facial x-rays**	**Major facial trauma**	**Facial suturing**
Level of confidence	**No (%)**			
Whole cohort				
Confident	21 (20.4)	70 (68.0)	41 (39.8)	67 (65.0)
Attempt under supervision	42 (40.8)	27 (26.2)	43 (41.7)	10 (9.7)
Not attempt	40 (38.8)	4 (3.9)	17 (16.5)	25 (24.3)
Missing	0	2 (1.9)	2 (1.9)	1 (1.0)
Total respondents	103	103	103	103
Consultants				
Confident	12 (36.4)	29 (87.9)	24 (72.7)	30 (90.9)

Attempt under supervision	16 (48.5)	2 (6.1)	8 (24.2)	2 (6.1)
Not attempt	5 (15.2)	1 (3.0)	1 (3.0)	1 (3.0)
Missing	0	1 (3.0)	0	0
Total respondents	33	33	33	33
Senior doctors				
Confident	7 (18.4)	30 (78.9)	16 (42.1)	35 (92.1)
Attempt under supervision	16 (42.1)	5 (13.2)	16 (42.1)	2 (5.3)
Not attempt	15 (39.5)	2 (5.3)	4 (10.5)	1 (2.6)
Missing	0	1 (2.6)	2 (5.3)	0
Total respondents	38	38	38	38
Junior trainees				
Confident	2 (6.3)	11 (34.4)	1 (3.1)	2 (6.3)
Attempt under supervision	10 (31.3)	20 (62.5)	19 (59.4)	6 (18.8)
Not attempt	20 (62.5)	1 (3.1)	12 (37.5)	23 (71.9)
Missing	0	0	0	1 (3.1)
Total respondents	32	32	32	32

As can be seen from Table 4, confidence in managing the four conditions is closely related to grade/ seniority with a Kruskall Wallace test showing significant results for all four conditions (P<.05 for suture and P<.001for X-ray, avulsion and trauma; X^2 range 5.3- 35.66).

Choice of service provision

When the participants from the second cohort were asked their opinion regarding which of four specialities should take the key responsibility for managing emergencies presenting to the ED. The results are shown in Table 5.

Table 5: Participants' opinions about which specialists should manage dental and maxillofacial emergencies

	Who should be responsible for managing emergency in ED?				
	Dentist	EM physician	EM nurse practitioner	Maxillofacial specialist	
Type of emergency	No. (%)				Total (N=58)
Maxillofacial	4 (6.9)	13 (22.4)	1 (1.7)	39 (67.2)	57 (1 missing)
Dental	30 (51.7)	7 (12.1)	1 (1.7)	15 (25.9)	53 (5 missing)

A clear and significant relationship emerged whereby dentists were preferred for managing dental emergencies and maxillofacial specialists for maxillofacial emergency (X^2 = 30.519, p<.001)

In addition, the participants were given a scenario where they were asked to indicate who they would like to be treated by in the ED in the event that their front tooth had been traumatically avulsed assuming the injury was straightforward and there were no contraindications for replanting it. The same pattern emerged. Nearly the third quarters of respondents (72.5%) preferred maxillofacial specialist, while the quarter (23.5%) would choose a dentist. The same group was asked to answer the grade of a clinician. Not surprising, a maxillofacial specialist consultant was preferred to a registrar or a SHO.

Participants' perceptions of emergencies

The same group of participants were asked to comment on whether they felt a selection of common dentofacial emergencies were genuine emergencies or not. They were also asked about their perceptions on an appropriate waiting time in the ED before they were seen for each condition. The findings are shown in Table 6.

Table 6: Participants opinions about dental emergencies and acceptable waiting times

Type of emergency	Viewed as a genuine dental emergency No. (%)	p-value	Mean time in minutes, when viewed as emergency (SD)	Mean time in minutes, when viewed as non-emergency (SD)
Facial trauma	52 (89.7)	NS	104.2 (75.5)	150 (42.4)
Soft tissue laceration	53 (91.4)	NS	118.3 (68.9)	180 (n.a.)
Post operative complication	50 (86.2)	NS	83.1 (67.7)	140 (91.7)
Tooth avulsion	50 (86.2)	p<.05	76.7 (84.5)	200 (69.3)
Dental abscess	44 (75.8)	NS	108.2 (78.6)	180 (69.3)
Dental bleed	21 (36.2)	NS	108.8 (87.6)	166 (79.3)
Toothache	18 (31.0)	p<.01	93.8 (73.1)	181.9 (67.9)
Lost filling	7 (12.0)	p<.05	120 (49.0)	190 (62.6)
Mouth ulcer	5 (0.9)	NS	162 (83.8)	180 (58.0)

The general trend detected was that when respondents viewed a certain condition as emergency, they gave a lower threshold for acceptable waiting times prior to treatment. This applies to all types of condition. Significant results were found for three types of conditions (i.e. avulsion, toothache, and filling). Non significant results were due to the overall consensus among the respondents about what should be viewed as emergency (most notably, laceration).

Neither prior exposure to trauma/ avulsion (nor confidence in approaching these conditions with/ without supervision) was predictive of the length of time allowed before treatment of these conditions in an emergency or otherwise.

Participant's choice of learning resources

When questioned about their preferred learning resources, 42 (72.4%) of those who responded among the second cohort indicated a preference for practical hands on courses for managing dentofacial emergencies. 12 participants (20.7%) preferred to have secondments attached to a maxillofacial unit. Only 3 (5.17%) preferred videos demonstrating practical skills and 1 (1.7%) of the participants preferred to learn more about managing these emergencies from approved guidelines.

Discussion

This is the first study that has conducted an in depth assessment of the attitudes and awareness of a small cohort of UK ED physicians towards dentofacial emergencies. The sampling was based on a limited number of participants who were selected from a small number of sites around the London region over a period of three years and 43.6% of the participants were from a single ED which did not have an onsite access to maxillofacial support the results should be interpreted with these limitations in mind. Therefore the opinions may not be truly representative of the attitudes and awareness of the ED physicians across the UK. In addition the data is based solely on the participants self-reporting their experiences and this again may differ from their actual ability to manage these emergencies in clinical practice.

Main findings

However, the strength of the responses from ED clinicians confirms the generally held belief that medically trained physician are not confident in managing common dentofacial emergencies presenting to the ED and have little formal training in managing these emergencies. Only 20.4% of the cohort felt confident in replacing an avulsed permanent tooth without supervision and 40.6% were confident in managing major facial trauma unsupervised. Several reasons may contribute to this. Firstly in this study only 10.8% of the cohort had any formal training in dealing with these emergencies and this is comparable to the data in the literature (Table 1). These findings are not surprising given the lack of formal training emergency physicians have in managing these emergencies and that clinical dentistry does not form any part of the UK undergraduate medical curriculum. Although there is a lack of recognised UK courses for ED clinicians in this field, the College of Emergency Medicine (CEM) has included dental and maxillofacial emergencies in the syllabus and these topics have been examined in the college membership exams. Furthermore it is possible that ED clinicians who do not have access to an onsite maxfac team may not have the opportunity to learn and practice these skills under supervision of their maxillofacial colleagues. This view is supported by the data that 40.8% and 42.6% of the participants felt that they were not confident in managing dental and major facial trauma respectively under supervision. In contrast the study found that the cohort was fairly confident in interpreting facial x-rays (69.3%) and facial suturing (86.3%) without any supervision. A further explanation for this is the amount of exposure ED clinicians have to these types of emergencies and the data from Table 3 supports this as the percentage of participants who had no exposure to traumatic dental injuries and major facial trauma

over the previous three month period was high (63.6% and 40.8% respectively) when compared to only 8.2 % and 17.5% of the cohort who had no exposure to interpreting a facial x-ray or performing facial suturing in the previous three month period. However it is important to note that in the context of this study confidence levels may not necessarily equate to actual competence and though the self reported confidence levels in managing the emergency may be high the skill still may be performed poorly or vice versa. It is difficult to extrapolate what impact low confidence may have in managing dentofacial emergencies in terms of their clinical outcome.

The cohort as a whole did not regard toothaches, dental bleeds, lost fillings as genuine emergencies which needed to be seen in the ED. Whereas dental abscesses, post operative dental complications, facial trauma; facial lacerations avulsed teeth were all felt to be genuine dental emergencies. There was a wide variation in the proposed waiting time for each emergency with all the respondents reporting a maximum wait of four hours. The UK national clinical guidelines for paediatric dentistry (Gregg and Boyd 1998) recommend a maximum time of sixty minutes from the time of injury for avulsed teeth to be replanted in order to get the maximum prognosis for survival of the tooth. However, other studies have shown a worsening prognosis after a period where the tooth is out of the mouth for more than 20-30 minutes (Andreasen and Hjorting Hansen 1966, Andreasen et al 2002). The study found that 69% of the participants would have seen the emergency within the hour in accordance to the guidelines (Gregg and Boyd 1998).

Although there is no comparative data in the literature on what constitutes a genuine dental emergency a model proposed for managing dental emergencies in primary dental care defined the following criteria for triaging dental emergencies. Haemorrhage following a tooth extraction, trauma to the teeth and jaws, swelling around the eye or which results in difficulty in swallowing or breathing should be seen within four hours of making themselves known to a dentist and these were classed as dental emergencies. Severe toothaches and facial pain not controlled by over the counter analgesia were considered as dental urgencies, which could be seen by a dentist within 24 hours (Evans 2001). The authors proposed a telephone triage model manned by a dentist or trained dental nurse that would screen the cases and triage them appropriately for treatment in primary dental care. In this context the proposed waiting times for some of these dental emergencies presenting to the ED is comparable to the proposed primary care out of hours model although there is a risk that the clinical outcome for traumatic dental injuries and dental haemorrhage may be affected by a prolonged waiting time.

There is little data or consensus on what ED clinicians feel about who should be treating dentofacial emergencies and in particular which speciality should have the ownership for their initial management. There was no clear consensus on who should manage these emergencies although just over 50% of the participants felt that dental practitioners should manage dental emergencies and over 67% felt that maxillofacial surgeons

should manage maxillofacial emergencies. A smaller proportion (12-24%) advocated ED clinicians in managing dental and maxillofacial emergencies respectively. This data supports a belief held widely in emergency medicine that the ED should not be managing these emergencies and reflects the views, which are openly expressed on popular doctor's internet forums (Trivedy 2010). The fact that only 4 /103 (3.9%) participants in the study opted to be treated by a member of the ED team if they presented to the ED with a dental injury strengthens this point of view. In comparison 72.5% of the participants preferred to be treated by a maxillofacial specialist and the remaining 23.5% would opt to see a dentist. The participants also indicated that given a choice they would prefer to be treated either by a maxillofacial consultant (51.8%) or registrar (28.6%) which is unrealistic as many ED's do not have maxillofacial surgery on site and those that do are commonly serviced by the more junior members of the maxillofacial team.

It is often assumed that dental specialists are better positioned to manage dental emergencies however there is data that shows that this may not always be the case. A survey of 417 general dental practitioners in the Northeast of England found that only 46% of the respondents were confident in managing traumatic dental injuries with 31.8% being unsure and 22.2% not being confident (Jackson et al 2005). Furthermore additional studies that have shown that general dental practitioners have low levels of knowledge in managing acute dental trauma and have low levels of postgraduate training on how to manage these emergencies (Yeng and Parashos 2008, Kotsopoulos and Duggal 2005, Hu et al 2006, Hamilton et al 2007). Data from this study suggests that the confidence levels of ED practitioners have in managing dental trauma is not too dissimilar to their general dental practitioner (GDP) colleagues and this is a problem that crosses professional boundaries.

The data clearly identifies a knowledge gap in this area despite these emergencies contributing to a significant amount to the ED workload. This knowledge gap may partly be due to the exclusion of clinical dentistry from the mainstream medical curriculum and a feeling that dental emergencies are not the responsibility of the ED team. This is further compounded by the lack of validated training resources for ED physicians. This may result in patients with dental emergencies receiving poor standards of care in units where there is no onsite maxillofacial support.

Conclusion and policy implications

The findings have large policy implications, particularly as there is the question of access to dental care. Despite the emergence of out of hours (OOH) emergency dental services (Austin et al 2009) the access to these are limited and there is concern that ED's have become the surrogate service for patients who cannot either register with NHS dentist or get access to NHS dentistry outside normal working hours. Furthermore as 50% of the UK population have not seen a NHS dentist in the previous 24 months, pressures on out of hours dental services and the constraints of access may see an increase in the number of patients presenting with both minor and major dental complaints to the ED (NHS information centre 2011). The authors believe that

there is an urgent need for a review on the issues regarding the resources, manpower and training of medical and dental staff to manage common dental emergencies. As it is not clearly practical or cost effective to have dental specialists providing a 24/7 service in all areas it may be possible to train ED staff to a level of minimum competency to treat basic emergencies safely. The authors believe that the first step to achieving this is urgent recognition form the dental and medical professions of the lack national standards or guidelines, which would ensure standardised quality of care for patients presenting to the ED with dental complaints. These may include a maximum tooth to replantation time for appropriate dental avulsion injuries, standardised care referral pathways for patients requiring a maxillofacial opinion and fast tracking of patients with dental emergencies to primary care dental services. These would help to create a seamless process where patients presenting to the ED with a dental emergency could be treated and referred appropriately. It is also important to consider whether it is cost effective in training all ED staff or focusing on a selected group such as the ENP's who are increasingly managing a large number of minor injuries, which present to the ED although the current study suggests that ED doctors feel strongly about the role of ENP's managing these emergencies. However this requires greater collaboration between the medical and dental professions on how the ownership of these emergencies should be managed as there are many doctors who feel they should not manage dental emergencies as well dentists who feel the same way. What this study shows is the urgent need for further research in this area looking at the barriers to providing a high quality of service to these patients whose care is currently lost between the dental and medical profession.

Competing interests: None

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