

Fig. 1. The number of patients referred from different sources by severity for the primary dentition.

GDP=general dental practitioner; EDS=emergency dental service; CDS=community dental service; HMS=hospital medical service.



Fig. 2. The number of patients referred from different sources by severity for the permanent dentition.

GDP=general dental practitioner; EDS=emergency dental service; CDS=community dental service; HMS=hospital medical service.

trauma to the primary dentition consisted of mostly severe injuries whilst in the permanent dentition the referral pattern consisted of mild to moderate injuries (Figs 1 and 2). Most of these referrals were from dental colleagues. The management of all trauma was deemed inappropriate in 56% of cases seen by both medical and dental HCP (Fig. 3).

**Discussion** The results of this audit suggest that, in cases of trauma to a primary tooth, it is the more severe injury types which are being referred to the hospitals for management. However with injuries associated with the permanent teeth all three categories of mild, moderate and severe injury are all being referred to the hospital with a higher percentage in the mild group. This may be due to a lack of knowledge amongst dental colleagues in the primary care setting regarding the acute management of dental trauma (especially mild). A lack of knowledge amongst medical colleagues as to where to refer dento-alveolar patients may also have accounted for a delay in patients receiving specialist dental care. In broad terms, the findings of this audit would suggest that national and international guidelines on initial management of dento-alveolar trauma are not always adhered to in the Pan Thames region.

Action plan (i) Dissemination of information regarding care pathways for children who sustain dento-alveolar injuries; (ii) improving the undergraduate teaching to dental students in the correct management of dental trauma, especially mild trauma; (iii) improving dissemination of trauma guidelines to all HCP, via © 2008 The Authors

## Management of dental injuries by medical and dental HCPs according to guidelines



Fig. 3. The appropriateness of management of dento-alveolar trauma and the source of referral. HCP = health care professional.

postgraduate education and Section 63 meetings; and (iv) education of medical colleagues on the initial management of dental trauma and where to refer children who have sustained dentoalveolar trauma.

### References

- Mackie IC. Management and root canal treatment of non-vital immature permanent teeth. Int J Paediatr Dent 1998; 8: 289– 293.
- 2 Gregg TA, Boyd D. Treatment of an avulsed permanent incisor teeth in children. Int J Paediatr Dent 1998; 8: 75–81.
- 3 Kinirons MJ. Treatment of traumatically intruded permanent incisor teeth in children. Int J Paediatr Dent 1998; 8: 165–168.
- 4 Flores MT, Andersson L, Andreassen JO, et al. Guidelines for the management of traumatic dental injuries I. Fractures and Luxations of permanent teeth. International association of dental traumatology. Dent Traumatol 2007; 23: 66–71.
- 5 Flores MT, Andersson L, Andreassen JO, *et al.* Guidelines for the management of traumatic dental injuries II. Avulsions of permanent teeth. International association of dental traumatology. Dent Traumatol 2007; 23: 130–136.
- 6 Skaare AB, Jacobsen I. Etiological factors related to dental injuries in Norwegians aged 7–18 years. Dent Traumatol 2003; 19: 304–308.

### Paediatric dental emergency referral patterns: before and after the new dental service contract ZAHRA KORDI, MINA VAIDYANATHAN & JACKIE SMALLRIDGE

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Introduction Under the 'fee per item' system, children undergoing dental treatment in NHS practice were remunerated under a Capitation Scheme. In this system children were defined as: under the age of 18 years or students under 19 years and in full time education. In April 2006, a new primary dental care remuneration system came into effect, a banding system (Table 1). This applies to both adults and children, with the dentist receiving a fee from the commissioning Primary Care Trust (PCT) for the treatment. Potentially, these changes may influence the number of patients being referred to the Paediatric Emergency Dental Department for routine work with or without pain. For example, if a young child

requires multiple fillings and extractions, the dentist will receive

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 Table 1. The different types of bands associated with the new NHS primary dental care contract 2006<sup>1</sup>.

Band 1 – this covers preventative dental work, such as scaling and polishing and the provision of oral health advice.

Band 2 – this covers simple treatment, for example fillings and extractions.

Band 3 – this covers complex treatment, such as bridgework, crowns or dentures.

Under this new scheme, patients will make one single payment for their course of NHS treatment. For example, a patient requiring a filling would pay a single Band 2 payment which would cover both the initial examination and the filling.

Patients currently exempt from paying dental costs, such as children, expectant and nursing mothers, and those on income related benefits, will continue to receive free dental care.

one fee regardless of time spent, complexity or quantity of treatment carried out. In 2006, the 'out of hours' Emergency Dental Service (EDS) at Guy's hospital was closed. After consideration of all the changes within the General Dental Service contract and reduction of local emergency services, we suspected that many child patients would struggle to access treatment from their local General Dental Practitioner (GDP). Therefore, we predicted that this would lead to an increase in the numbers of written referrals from GDPs for routine and extensive paediatric dental treatment.

Aims The primary aim was to look at any changes in the written referral pattern of healthcare professionals to the Guys hospital dental emergency clinic following the introduction of the new contract. In addition, the audit sought to record the numbers of casual patients attending the emergency paediatric dental clinic without a written referral.

**Standards** There are no standards available for the number of written referrals that the department should receive. The authors are not aware of any similar audits or studies published to date.

Ideally, the majority of patients should be referred by letter as acute cases that cannot be treated in a practice or community setting. It is expected that a small number of patients will attend as casual patients suffering from acute pain or trauma arriving without a written referral. The Guy's and St Thomas' NHS Foundation Trust criteria states the role of the emergency dental service as 'Guy's provides an emergency service for children with acute pain and infection, bleeding from the mouth or those suffering from dento-alveolar injury requiring urgent care<sup>2</sup>.

**Methods** This was a retrospective audit. The details of all patients seen and treated in the department including hospital number, referral source and treatment are logged daily in the paediatric emergency daybook. This daybook was used to identify patients that attended during a pre-contract period December 2005 to February 2006 and post-contract period December 2006 to February 2007, so that the new contract implemented on 1st April 2006 was in full use.

From the daybook, patients referred to the department by letter were identified and patient notes subsequently requested. Information from the notes was recorded onto an Excel database; this included patient age, hospital number, age at referral, date of referral, referral source and reason for referral. The data were independently verified by two of the authors to reduce errors.

**Results** A total of 74 referrals by letter were recorded in the daybook during both the pre- and post-contract period. Of the 74 sets of notes requested, only 62 sets of notes were available for analysis from the dental records department. Inaccuracies in recording patient details in the daybook, prevented the majority of missing notes from being located. Due to the information gained from the daybook, these 12 sets of notes belonged to patients with

written referrals in the post-contract period. As they were incomplete, these 12 sets of notes were not been included in the audit. Others notes were unavailable due to misfiling, or were in use on patients currently undergoing treatment.

It was found that of the 62 sets of notes analysed, 32 written patient referrals were made during the pre-contract period, and 30 patient referrals were made during the post-contract period at the same time the following year. A total of 202 casual 'walk-in' patients were seen in the department during the pre-contract period and 289 in the post-contract period. Although the number of referrals by letter was similar pre- and post-contract, we noted the number of casual patients had increased by 43.1% compared with the same period the previous year.

It was noted that there was a reduction of 10% in written trauma referrals, an increase of 7% for caries, an increase of 50% for pathology (e.g. apthous ulerceration) and a reduction of around 50% for facial swelling in the post-contract period (Fig. 2). Overall, post-contract the mean age of children referred to the department was lower for all categories of referral (Fig. 1). For trauma and facial swelling written referrals, the mean age of patients was half of those referrals in the pre-contract period. Children with pathology had a mean age of 2 years post-contract compared to 6 years pre-contract. However, this initial audit had very small numbers of pathology referrals. In the pre-contract period, the majority of written referrals coming from hospital A & E departments. Post-contract all the written referrals were from GDPs (Fig. 2).



Fig. 1. The mean age of children referred by letter to a specialist paediatric dentistry center according to dental complaint.



**Fig. 2.** The distribution of written referrals prior to, and following, the new NHS primary dental care contract 2006 to a specialist paediatric dental centre.

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Discussion The focus of the audit was the patient referrals to the paediatric emergency dental department by letter. Overall, the number of written referrals was small (approximately 30) and similar during both periods. Furthermore, it should be noted that the 12 sets of missing records belonged to patients with written referrals in the post-contract period. Had these notes been included in the study, this would have demonstrated an increase of approximately one third of written referrals; compared to the pre-contract period. It is difficult to explain why the trend regarding referrals for trauma and facial swelling was lower and pathology was higher in the post-contract period. Interestingly, an increase in the number of written referrals for children with caries of a vounger average age was noticed. This may suggest that GDPs are reluctant to treat patients below the age of 6 years. However, caution should be exercised in interpreting this finding as the number of written referrals analysed for this audit was small.

It was noted that the majority of the patients attending the paediatric dental emergency clinic were casual attenders; possibly attending on the recommendation of another clinician. In conclusion, a small change in written referrals was noted between the preand post-contract time-frames. Due to the small numbers in the audit, it is not possible to determine the significance of this finding. However, the increase of over 40% casual 'walk-in' patients to the department cannot be ignored. The remit of this pilot audit cannot explain this 'snap-shot' increase and further investigation is warranted.

Action plan (i) The Paediatric Dental A & E daybook is crucial to finding patient details. To ensure that all the data required are recorded, we plan to re-design and update the departmental A & E daybook. A departmental meeting has already been held to re-train staff to complete the daybook more accurately and clearly; (ii) we plan to focus the audit data to include 'walk-in' patients to the paediatric dental emergency service to try and identify if they were they advised to attend by their GDP or another source; and (iii) the next stage of the audit cycle will be undertaken prospectively for the period December 2007 to February 2008. Data collection will be carried out daily to avoid the need to request large numbers of records at any one time.

#### References

- 1 DoH. A Guide to NHS Primary Dental Services from April 2006. London: DoH Publication, 2005.
- 2 Guy's Hospital Trust website, London, UK [www document] http://www.guysandstthomas.nhs.uk/services/ambulatory/dental/ paediatricdentistry.aspx.

# Referrals made to the dental hygienist from a specialist paediatric dentistry department

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**Introduction** This was a prospective audit of the referrals made to the dental hygienist in a 6-month period.

**Aims** The audit sought to determine whether: (i) the referral was appropriate; and (ii) the treatment to be undertaken had been accurately prescribed.

**Standards** Appropriate referrals were defined as those: (i) outlined in the GDC extended duties for dental hygienists and therapists<sup>1</sup>; (ii) consistent with the local protocol stating that the referral had to be prescribed by a Specialist Paediatric Dentist; and (iii) where the patient must have an increased dental need – e.g. medically compromised, cleft lip and palate, dental anomaly or trauma. **Methods** A proforma was used to record the patients referred to the hygienist. Information recorded included: patient age, medical history, dental diagnosis, reason for referral and referring practitioner. To aid the referrals, a quick-fill referral plan was incorporated into the process. The proforma was made available on the clinic and the appointments made. At each patient visit the hygienist and audit lead evaluated the referral, its compliance with the local and national standards and the quality of referral.

**Results** Fifty patients were referred with a mean age of 10.6 years (range 2–16). Forty six referrals had accurately prescribed the treatment for the hygienist to undertake, leaving four with no treatment plan. Ninety-two per cent were referred by a Specialist in Paediatric Dentistry (Consultant or Associate Specialist), the remaining 8% coming from SpRs in orthodontics. Medically compromised children made up 62% of the referrals. Children with dental anomalies/trauma made up 62% of patients seen. All the treatments that were prescribed were within the remit of a dental hygienist.

**Discussion** The majority of referrals were appropriate. Clinicians on the whole appeared to be aware that all treatment plans must be written in nature. When this is not the case, patients are kept waiting for their care whilst the hygienist seeks the referring dentist. The main source of inappropriate referral was the orthodontic SpRs, as they did not comply with the local protocol regarding route of referral and created an unfunded service.

Action plan (i) Training sessions will be arranged to ensure all staff are aware of the national and local protocols; (ii) the current and new orthodontic SpRs will be made aware that all referrals to the hygienist must be through a Specialist in Paediatric Dentistry and meet the requirements of the local protocols; (iii) the hygienist will monitor all referrals with the aid of a log diary and feedback to the department; and (iv) the audit is to be repeated implementing these changes.

### Reference

1 General Dental Council. Extended Duties for Dental Hygienists and Therapists 2006. London: General Dental Council, 2006.

### An audit of dento-alveolar trauma presenting to five international specialist paediatric dentistry centres GRAEME WRIGHT & RICHARD WELBURY

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**Introduction** Reporting of the incidence and the prevalence of dento-alveolar trauma varies worldwide. This variation is in part due to the varied methods of data collection<sup>1-6</sup>.

Aim The aim of this audit was to any variation in the presentation of dento-alveolar trauma at five international centres with standardized data collection.

**Methods** A retrospective case record study of clinical records was carried out. Data were collected using a machine readable data collection sheet in Brisbane (B), Melbourne (M), Sydney (S) and Dunedin (D) during student electives from Glasgow Dental School under the supervision of RW. Data were also collected in Glasgow (G) by GW. Dental trauma cases between 2002 and 2006 were included. A total of 858 clinical records were identified. Data collected included: gender, age at trauma, cause of trauma and classification of traumatic injury (WHO classification).

**Results** At all centres dento-alveolar trauma was more common in males (Fig. 1). Overall there were two age peaks identified at 0–4 years and 8–11 years for children presenting with dento-alveolar trauma, although there was variation between centres (Fig. 2). Most injuries occurred between July and September in Glasgow, January and March in Sydney, October to December in Melbourne and April to June in Dunedin. Allowing for the

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