Poster (Non-Prize) Category

P1

Pathways to treatments for patients at risk of infective endocarditis

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Background: In accordance with recent changes to NICE guidelines, patients at an increased risk of developing infective endocarditis (IE) should have all episodes of infection investigated and treated promptly to reduce endocarditis risk.
Aim: To evaluate the efficiency of the current dental service provided for patients at risk of IE and consider any delays to treatment.
Method: This was a retrospective study using records of all patients at risk of IE who received treatment under general anaesthetic (GA) during a 9-month period, February to November 2008. Significant dates were recorded from the various stages of referral to treatment. Appropriate mention of the patient's cardiac history in the referral letter, indication of urgency and evidence of clinical infection were also recorded.
Results: Data for 16 paediatric cardiac patients were analysed (55% male; 45% female; mean age = 7 years; range = 4–15 years). The average time from initial referral to actual treatment was 22 weeks. 30% of these patients were categorised as 'urgent' however there was no significant difference in the waiting times for patients categorised as 'urgent' or 'non-urgent' ($P > 0.05$). Interestingly, all 'urgent' patients attended for their appointments. 44% of the remaining patients cancelled or failed to attend an outpatient and/or GA admission appointment resulting in double the average waiting time.
Conclusion: There is a need to create a formal fast-track pathway to expedite the treatment of patients at risk of IE. Patient-led delays are common and significant. It appears it may be beneficial to inform patients of their 'urgent' status.

P2

Dental anxiety in children re-attending for tooth extraction under general anaesthesia

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Background: Scotland has one of the highest rates of tooth extraction under general anaesthesia (GA).
Aim: To report the patient characteristics of children referred for tooth extraction under GA who had already previously experienced a dental GA.
Method: Following ethical approval, 80 children with previous experience of GA and their parents were recruited at their GA assessment appointment at Glasgow Dental Hospital and School. The child's age, gender, previous dental treatment, type of previous GA and type of teeth being extracted were recorded. Parents completed the Modified Dental Anxiety Scale. All children completed the Modified Child Dental Anxiety Scale, Facial Image Scale and Children's Fear Survey Schedule-Dental Subscale.
Results: The mean children's age at time of recruitment was 6.8 years. 64% had experienced GA for medical reasons, 30% for dental reasons and 6% for both. The median number of teeth extracted was eight (range = 2–16). 31% patients were due to have at least one first permanent molar extracted under GA. The parents were not found to be dentally phobic as the median score for the MDAS was 13 (range = 5–25). Parents scoring above 19 were considered highly dentally anxious. The median for the MCDAS for the children was 24 (range = 8–40). Children scoring above 26 were considered dentally anxious, 40% scored very sad on FIS, the CSFF mean was 32 (range = 15–75), patients scoring 32 and above were indicative of moderate to significant dental anxiety, patients scoring below 32 were considered of low dental anxiety.
Conclusion: The patients referred were more anxious than the normal population.

P3

Dental management of a child with Kostmann's syndrome

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Background: Kostmann's syndrome is a rare autosomal recessive disorder of the bone marrow, characterised by severe neutropenia. This disease is also known as Severe Congenital Neutropenia (SCN) and infantile genetic agranulocytosis. Affected patients are susceptible to bacterial infections and have an increased risk of developing acute leukaemia. Dental findings include aggressive periodontal disease, alveolar bone loss and oral ulceration.
Presenting problem: An 8-year-old boy presented to the paediatric dental department, at the Royal Manchester Children's Hospital, following referral from his general dental practitioner regarding his mobile primary teeth and sore gums. Clinical examination revealed all primary teeth to be mobile, with extensive bone loss resulting in root exposure. The erupted permanent dentition was noted to be hypoplastic.
Clinical management: Thorough oral hygiene advice was given and short-term use of chlorhexidine gluconate gel (0.2%) advised. The patient was prescribed antibiotics to relieve acute infection. A general anaesthetic was arranged in the Children's Hospital following liaison with the consultant haematologist. At this visit all the mobile primary teeth were extracted and the sockets packed with Surgicel. A deep ultrasonic scale was carried out on all the permanent teeth and Corsodyl gel placed in the deep gingival pockets. Future treatment will include close monitoring of the erupting permanent dentition with reinforcement of preventive advice.
Discussion: This case describes the typical findings of Kostmann's syndrome. We noted that the secondary dentition was hypoplastic. A review of the sparse literature did not reveal any other cases describing patients with this syndrome as having hypoplastic teeth.

P4

Dental Care for a child with Glanzmann's thrombasthenia

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Background: Glanzmann's thrombasthenia is a rare disorder of platelet aggregation which is inherited in the autosomal recessive pattern. Sufferers have a complete absence of platelet aggregation and tend to present in infancy or early childhood with bleeding, bruising following minimal or unrecognised trauma, petechiae or

ecchymoses. Epistaxis and gingival bleeding are also commonly seen.

Presenting problem: An asymptomatic 4-year-old girl, with no previous dental experience, presented with caries affecting her primary dentition, having been referred from the community dental services.

Clinical management: Following preventive advice, comprehensive dental treatment was provided under general anaesthesia. Haematological management included the administration of recombinant factor VIIa immediately pre-operatively, with two further doses at 2-hourly intervals post-operatively. Tranexamic acid mouthwash was started prior to surgery and continued for seven days. HLA-matched platelets were on standby in case of post-operative haemorrhage. Dental treatment included two extractions, three stainless steel crowns, a composite restoration and some fissure sealants. Oxidised regenerated cellulose was placed in the extraction sockets.

Discussion: Haemostasis was achieved and recovery was uneventful. The logistics of treating this girl, and her future management, will be discussed.

P5

The use of intravenous propofol sedation for dental treatment in children

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Background: Management of children's dental anxiety has been identified as the most common reason for referral to specialist services. Propofol intravenous sedation (PIVS) in sub-anaesthetic concentrations provides a deep, controlled sedation with rapid recovery. Successful use of PIVS for dental treatment in children has been reported. A service has been established within Liverpool University Dental Hospital (LUDH), providing treatment for anxious teenagers.

Aim: To investigate the effectiveness of the PIVS service.

Standards: All children should receive treatment within an 18-week period from time of referral.

Process: Retrospective data were collated, following PIVS sessions, and entered onto a proforma.

Results: Twenty five case notes were assessed. Referrals were all from general dental practitioners, for a mixture of restorative dentistry and exodontia. Patients had a mean age of 15 years (range = 13–17) years old with a 2:1 female to male ratio. Teeth requiring treatment ranged from a single tooth, up to 12 teeth. Twenty three patients accepted treatment under PIVS and made a full rapid recovery, with no adverse side effects. One patient failed to attend and one refused treatment and was subsequently referred for treatment under general anaesthetic. There was an average of 8 months (range = 4–16) waiting time between referral and treatment.

Discussion: PIVS is successful for treating anxious children. However, due to the limited service, children were waiting for long periods of time to complete treatment.

Implementation of findings: A case is under preparation to commission more frequent services to provide PIVS for children in our area.

P6

Dental procedures under general anaesthesia: an audit of practice in an Irish paediatric hospital

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Background: Dental treatment under general anaesthesia (GA) is provided at Our Lady's Children's Hospital, Dublin, Ireland.

Aim: We audited our current practice by identifying referral sources, reasons for treatment, treatments provided and the co-morbidities of patients treated under GA in an effort to increase efficiency.

Standards: We aim to limit the provision of dental treatment under GA to those cases that cannot be treated elsewhere. This should target cases who have co-morbidities which necessitate the expertise available in the hospital and those under 2 years of age who require the services of a paediatric anaesthetist.

Results: Notes were available for 338 of the 343 patients who had dental treatment provided under GA during 2008. The mean age of patients was 93.3 months (range = 8–217 months). Community dental services referred most cases ($n = 192$), followed by in-patient referrals ($n = 71$) and referrals from other hospitals ($n = 30$). The most common reasons for treatment were dental caries ($n = 160$), pain ($n = 85$) and trauma ($n = 49$). The most common treatments carried out were dental extractions ($n = 300$) and restorative treatment ($n = 141$). Most patients ($n = 276$) had one co-morbidity, with 109 patients having two or more. Common co-morbidities included neurological impairment ($n = 80$), cardiac pathology ($n = 57$) and haematological and malignant conditions ($n = 52$). A few healthy children over 24 months of age ($n = 38$) were also treated.

Discussion: Most children who had dental treatment provided under GA had a significant medical history. However, there were children without a medical history who received treatment and it might be more efficient to provide treatment for such children in another setting.

P7

The effectiveness of dental therapists treating patients on a GA waiting list

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Background: All children waiting for comprehensive care under GA, were seen by dental therapists (DT) as part of the 18-week pathway.

Aim: This retrospective audit, from March to December 2008, assessed the outcome of DT in converting children away from the need for comprehensive care under GA.

Standards: There are no published standards.

Process: All patients placed on the waiting list for comprehensive care under GA were booked with DT. The parameters assessed were the outcome, number of appointments, which patients were successfully treated by DT and variables predicting the success.

Results: A total of 229 patients with mean age of 6.3 years (range = 2.3–16.9) were seen. Thirteen patients (13.5%) were treated successfully by DT. 46 patients (20%) are still undergoing treatment with DT. 132 patients (57.6%) were replaced on a GA waiting list for comprehensive care. 20 patients (7.4%) were discharged due to failed appointments. Patients who were older with mean age of 9.1 and those requiring few appointments (mean 3.3) had a better chance of completion of treatment with DT.

Discussion: Dental therapists play an important role within the dental team by providing preventive advice for all patients and conservative care for some. The conversion rate achieved was 13.5%. This could increase to 33.5% if all outstanding patients complete their treatment with DT.

Implementation of findings: Leeds Dental Institute has employed a DT to continue this role.

P8

Use of mineral trioxide aggregate in the management of complicated crown fractures

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Background: Dental trauma in the paediatric patient is common, fraught with potential clinical 'pitfalls' and long-term complications. Advancements in dental materials and techniques have significantly improved the management of these cases and their associated morbidity. This case describes the use of mineral trioxide aggregate (MTA) for the management of complicated crown fractures and highlights an associated complication with the material.
Presenting problem: A 9-year-old girl presented to the paediatric dentistry department following an accident two hours earlier. She had an unremarkable medical history and sustained complicated crown fractures to both her upper permanent central incisors. The patient had no experience of dental procedures and was anxious.
Clinical management: Inhalation sedation and local anaesthesia were administered and the injured teeth were isolated. Electrosurgery was necessary to remove the deeply fractured coronal fragment of UR1. 2 mm of exposed pulpal tissue was subsequently excised from both incisors, prior to irrigation with 2% sodium hypochlorite solution and the placement of white MTA direct pulp caps. A resin-modified glass ionomer cement 'seal' was placed overlying the MTA and the incisors were restored with composite resin.
Discussion: Since MTA's introduction in 1993, its clinical applications have been found to be numerous. Its 'sealability', favourable tissue response and regenerative properties make it the ideal biological material for direct pulp capping in partial pulpotomies, more so than the historically used calcium hydroxide. However, although white MTA was designed to improve the aesthetic impact the material had when used in anterior teeth, its long-term discolouration still proves to be a real disadvantage when used in these cases.

P9

Do dental and hygienist-therapy students see different types of patient?

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Background: Experience in paediatric dentistry is a fundamental prerequisite in the education and training of dental undergraduates and hygienist-therapists. The opportunity to provide dental care to children, with the inevitable challenges that occur, is important for them to gain the knowledge, skills and competencies that are required.
Aim: To determine the profile of children seen for dental care by dental or hygienist-therapist students in the paediatric department of a dental teaching hospital.
Method: The case-notes of children who had completed a course of treatment provided by dental undergraduates or hygienist-therapy students in the paediatric department of the Charles Clifford Dental Hospital, Sheffield, were reviewed retrospectively. Demographic data including age, gender, significant medical history, and prescribed treatment were recorded.
Results: The case-notes of 46 children seen over a 6-month period were included. The mean age of children completing treatment with dental undergraduates and hygienist-therapists was 8.9 years (SD = 3.1) and 6.7 years (SD = 2.1) respectively, with a similar male to female ratio. Dental undergraduates saw more patients with a significant medical history (15.8%) than the hygienist-therapists (3.7%). For both cohorts, almost all the prescribed treatment plans included prevention (97.8%). The dental undergraduates were expected to carry out more restorations and extractions (57.9% and 21.1%) than the hygienist-therapists (40.7% and 15.4%), for whom a majority of the patients were seen prior to a planned general anaesthetic admission (77.8%).
Conclusion: The findings suggest that the profile of patients referred to dental undergraduates and student hygienist-therapists is different, which has potential consequences for training.

P10

Opinion and usage of the 'Hall Technique' amongst paediatric dental specialists in Scotland

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Background: The 'Hall Technique' is a novel method of restoring primary molars. The first randomised controlled trial to indicate its success was published in December 2007 and this is ongoing. However, there are no data available on its usage amongst paediatric specialists in Scotland.
Aim: To ascertain the usage and opinion of the 'Hall Technique' amongst paediatric specialists in Scotland, and to determine whether they consider it a viable treatment option which should be encouraged in general dental practice.
Method: All paediatric specialists in Scotland received a questionnaire ($n = 29$). A response rate of 69% was achieved.
Results: 95% of specialists indicated they currently use the technique (based on a 5-point scale with options from '*never*' to '*very frequently*'). When clinically indicated, 65% said it would be their first treatment choice; 15% would sometimes use it and 15% said they would not choose it as their first option. 100% of those who used the technique found it effective and 95% found it straightforward to perform. The specialists all indicated GDPs should receive more training regarding the technique and 70% were willing to participate with this. Preferred training options include Practical Section 63 CPD courses and DVD demonstrations.
Conclusion: The 'Hall Technique' is a popular treatment option among specialists and all agree it should be encouraged in general dental practice. Following the positive response, a study is currently underway to ascertain GDPs' interest in the technique and whether further training would be accepted.

P11

Effective provision of fissure sealants to children requiring care under general anaesthesia

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Background: Patients at high caries risk, such as those requiring extractions under general anaesthetic (GA), should receive enhanced prevention. The provision of fissure sealants (FS) is a highly effective means of preventing caries and should be prescribed for these children's first molar teeth.
Aim: To determine whether FS are being prescribed for permanent molar teeth of high caries risk patients who have been referred for extraction of teeth under GA.
Standard: Based on a number of UK guidelines, a standard of 100% prescription of sealants for high caries risk children was selected. A previous audit cycle reported 80% compliance.

Process: The records of patients over 6-years-old, who had been treatment planned and had their extractions carried out between September 2008 and January 2009, were identified and relevant details recorded on a piloted form.
Results: One hundred and eight patients who met the inclusion criteria were identified, of which 50 were randomly included. The mean age was 7.94 years (range = 6–14). Mean dmft and DMFT were 6.34 and 1.62, respectively. Fissure sealants were applicable for 52% of these patients and the prescription rate was 84.6%.
Discussion: A high prescription rate of FS was found which exceeded that reported for the previous audit cycle. However, it fell short of the standard therefore a more active promotion of sealing was instigated.
Implementation of findings: The documentation and patient journey has been altered to ensure FS placement before proceeding to extractions whenever possible.

P12

Factors influencing the attendance of paediatric patients to the undergraduate clinic

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Background: Attendance of children to undergraduate clinics is often poor. Missed appointments have an impact on teaching and use of staff and resources.
Aim: To evaluate the profile of children who regularly fail to attend appointments with undergraduates.
Process: The training portfolios of 60 final year undergraduates were analysed. Data were collected for children who attended all appointments (group 1), those who failed to attend some appointments (group 2) and those who failed all appointments (group 3).
Results: The mean age of children in G1 and G2 was 11 years compared to 9 years in G3. G1 patients attended between 1 and 12 appointments (mean = 4, SD = 2.92). 52% were referred from consultant clinics with 44% complaining of pain. 20% then underwent a general anaesthetic (GA) as part of their treatment plan. G2 attended between 1 and 9 appointments (mean = 4, SD = 2.29) but failed to attend an average of 5 appointments (SD = 1.22). 71% of G2 attended via self-referral to A&E, with 53% complaining of pain. 24% underwent GA and 75% of those failed all of their subsequent appointments. In G3, 70% attended via self-referral to A&E with 91% complaining of pain. 65% underwent GA.
Discussion: Children referred via consultant clinics appear to have improved attendance. Children attending dental A&E may not be the most suitable patients for referral to undergraduate clinics.
Implementation of findings: Parent information leaflets have been designed to encourage attendance. Consideration is being given to postponing elective treatment under GA until children have attended for preventive care.

P13

Undergraduate achievements in paediatric dentistry: comparison of hospital and outreach experience

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Background: There are acknowledged limitations in a solely hospital-based training in ensuring dental undergraduates have adequate opportunity to carry out key paediatric dentistry procedures. Outreach placements in primary care settings are therefore being increasingly employed to address these shortfalls.
Aim: To compare the mean totals of paediatric dentistry procedures achieved by Sheffield dental students before, and after, the introduction of a 6-week outreach placement.
Methods: Clinical logbooks of students who graduated prior to, and following, the introduction of an outreach placement were examined to determine the total number of specific treatment items undertaken.
Results: Data were analysed for 2004 ($n = 49$) and 2008 ($n = 64$) graduates. There were some notable differences in the mean number of treatment procedures undertaken: 2008 graduates had carried out almost twice as many restorations (mean amalgams = 3.2; glass ionomers = 4.2; composites = 6.0) as 2004 graduates (mean amalgams = 1.8; glass ionomers = 2.4; composites = 2.4). With respect to preventive procedures, 2008 graduates had undertaken markedly more fissure sealants (mean = 17.4) and fluoride varnish applications (mean = 9.4) compared to 2004 graduates (fissure sealants = 7.9; fluoride varnish applications = 0.8). The mean number of extractions performed was similar for both years (2008 = 2.2; 2004 = 1.8). Experience in primary molar pulp therapy and preformed metal crowns were very low for both groups (less than 0.5 per student).
Conclusion: This study has shown that the number of clinical paediatric dentistry procedures carried out by dental students increased significantly with the introduction of an outreach placement. Sheffield Dental School has now introduced a 20-week outreach programme with the expectation that clinical experience and opportunities will be further enhanced.

P14

Waiting for the dentist: seeking children's perspectives

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Background: Clinic reception and waiting rooms should provide a welcoming environment and create a positive first impression, particularly for new and apprehensive patients. The area should also be comfortable and stimulating for children and their families, who may require multiple visits over a course of treatment.
Aim: This service evaluation sought the views and opinions of children who were users of a hospital paediatric dentistry waiting room.
Method: Children attending the paediatric department of the Charles Clifford Dental Hospital, Sheffield, completed a questionnaire-based evaluation. Each patient recorded their age, gender, attendance history and overall opinion of the waiting area. Participants illustrated or wrote in their own words some 'good' and 'bad' features, and provided suggestions for improvement.
Results: One hundred children responded over a 3-week period, in February 2009. The age range of participants was 2–16 years, with a mean of 9.3 years (SD = 3.4 years), and a similar male to female ratio. For a third (32%), it was their first attendance. Most children rated the waiting room as being '*okay*' (71%, $n = 57$). Themes commonly related to physical characteristics of the waiting area and the need for activities to prevent boredom. There was a perception that more space was required and toys or games should be more age-appropriate. Some children drew pets as a welcome addition to the waiting area!
Conclusion: The findings suggest the majority of the service-users were satisfied. Nonetheless, greater consideration should be given to providing toys and activities that appeal to the whole patient population.

P15

Multidisciplinary management of 14-year-old female with septo-optic dysplasia

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Background: Septo-optic dysplasia is a rare heterogeneous condition leading to a combination of pituitary gland hypoplasia, optic nerve hypoplasia and midline abnormalities of the brain. It is caused by spontaneous mutation of the gene locus 3p21.2-p21 that controls HESX1; an important regulator of pituitary development. Pituitary problems vary but the main feature is short stature because of lack or absence of growth hormone. Lack of ACTH in stressful situations or illness can precipitate an adrenal crisis and sudden death. Hypoplastic optic discs are usually present leading to blindness in one or both eyes and nystagmus. The majority of patients have some psychomotor impairment and thermoregulation may be deficient.
Presenting complaint: A 14-year-old female, unhappy with the appearance of her teeth was referred by her dental practitioner for the extraction of all first premolars for orthodontic treatment, which was complicated by her medical history.
Clinical management: Extra-oral examination revealed she was anxious and partially sighted. On intra-oral examination, she was noted to have molar-incisor hypomineralisation. Medically she had hypothyroidism, hypoglycaemia, took daily oral steroids and growth hormone injections and had an allergy to topical anaesthetic. She was seen for regular reviews at Great Ormond Street Hospital by a consultant paediatric endocrinologist.
Discussion: Liaison with her consultant was paramount prior to dental extractions. Dental extractions were planned under inhalation sedation and the use of topical anaesthetic avoided. Dental management also involved fissure sealing first permanent molars and consideration of treatment options regarding discolouration of her upper permanent central incisors, prior to orthodontic treatment.

P16

An audit comparing patients referred to hospital and community paediatric dental services

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Background: Few studies have looked at the nature of referrals to hospital-based paediatric dental clinics and fewer have studied referrals to a community-based, salaried dental service (SDS). This audit looked at a sample of patients referred to both services and compares the findings.
Aim: To look at the profile of new patients, the outcomes of their episodes of care and compare the differences between hospital and community based services.
Method: A randomly selected group of patients, seen during the same time period were audited in each setting. Data collected included age, gender, postcode and diagnosis. Information was also collected regarding the outcome of the consultation and any treatment requiring sedation or general anaesthesia (GA).
Results: The average age of SDS children was younger than those seen in the hospital. In both settings, more females were seen than males. A wider variety of diagnoses were recorded within the hospital population. Anxiety was the primary diagnosis in SDS, whilst in the hospital the highest referrals were for trauma and hypodontia. Patients referred to the SDS were much more likely to receive relative analgesia. The use of GA was similar in both settings (10% hospital, 8% SDS). The majority of patients received a complete course of treatment.
Conclusion: It is important to understand our patient profile in order to provide information to the local primary care trusts in order to commission services in the most appropriate setting. There is huge potential for developing specialist community based dental services.

P17

Development of a care pathway for management of autistic children

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Background: Children with autistic spectrum disorder (ASD) face many challenges; one of which is attending the dentist. Depending on where an individual is within the spectrum, new experiences and social interaction can be exceptionally difficult. Whilst this is widely reported in papers and on ASD supports websites, little seems to be done in preparation for meeting an autistic child.
Aim: A decision was therefore made to develop a care pathway for newly referred ASD children to the paediatric department, Birmingham dental hospital.
Method: All staff groups within the department were represented at a session to develop ideas. Staffs were divided into three groups to look at differing aspects of dental care and consider the specific impact on ASD patients, their relatives and staff.
Results: Feedback and comments from the session were brought together into a report which was circulated for discussion. The key findings were: (1) information should be collected prior to issuing an appointment; which would mean that a child could receive an appointment that would most suit their needs; (2) relatives should be provided with information to enable them to prepare their child; (3) staff needs to be aware of the considerations of the individual in advance.
Conclusion: A care pathway and an assessment tool have been produced for newly referred ASD patients. A dental nurse has been nominated to support this patient group by contacting relatives in advance, liaising with hospital administrators and linking in with clinicians who will provide care for the patient.

P18

Oral sedation service evaluation and follow-up of the possible side-effects

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Background: At King's College Hospital, London, oral midazolam sedation has been provided for children since June 2007. More than 350 sedations have been carried out ranging from simple extractions to minor oral surgery. Immediate side-effects have been noted; however no data have been collected regarding parent's satisfaction or post-sedation adverse-effects.
Aim: This audit was carried out to evaluate parents' satisfaction and to assess whether any adverse effects were noted following dental treatment provision for children under oral sedation.
Method: Parents of paediatric patients receiving dental treatment under oral sedation were given a questionnaire at recovery. Questions were asked regarding their views on the information given prior to the sedation visit and their level of satisfaction with the method of oral sedation. This was followed by a telephone enquiry, two days later, to assess their views on their child's amnesia and anxiety levels, any differences in behaviour, mood changes, sleeping pattern or any adverse physical side-effects.
Results: The majority of parents were satisfied with the information given prior to sedation. They confirmed that children

experienced amnesia relating to the dental treatment. Physical side effects were noted such as mood changes, over-activity and drowsiness. The main cause of distress for the children was the numbness of the lip and the feeling of drowsiness (which lasted less than 3 hours).
Conclusions: Although oral midazolam is a safe method of conscious sedation, parents must be given adequate information of potential adverse side-effects. The results of this audit provided us with new insights which will be included in our information leaflet.

P19

Service evaluation of paediatric dental general anaesthesia in Yorkshire and the Humber

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Background: The provision of dental treatment under general anaesthesia (DGA) in the U.K. has changed considerably over the past few decades. In 2000, the General Dental Council recommended that after 31st December 2001, all DGA should take place in the hospital setting. Today, more than 7 years after implementation of this major change in policy, there appears to be a lack of published information available about DGA services for children.
Aim: To evaluate the availability of paediatric DGA services in Yorkshire and the Humber and to investigate the frequency of lists and treatment provided as well as the annual number of children undergoing DGA.
Method: A postal questionnaire was sent to all potential DGA service providers within Yorkshire and the Humber Strategic Health Authority.
Results: All those contacted responded, and a further two DGA centres were identified. There were 24 DGA service providers, running 75 regular DGA lists on which children could be seen. There was an average of 60.3 lists per week or 2410 lists per 40-week-year, with an average of 12,050 children undergoing DGA per year.
Conclusion: DGA provision varied widely within the region in relation to waiting times, pre-operative assessment and types of treatment available. Distance to travel appeared to be a limiting factor in the uptake of DGA services.

P20

The reasons and patterns of failed appointments in the paediatric dental department

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Background: Key performance meetings at King's College Dental Institute (KCDI) highlighted that the failed appointment (FTA) rate within the paediatric dental department was above the target set by the trust. FTAs are detrimental to the delivery of patient care.
Aim: To establish reasons for and patterns of FTAs in the paediatric dental department.
Process: A prospective qualitative audit of patients that failed dental appointments between April and July 2008 was carried out. A telephone enquiry was carried out with parents/guardians to establish reasons for children failing appointments. Retrospective data were collected from case notes regarding previous FTAs and whether FTA and discharge protocols were being followed.
Results: Eighty parents/guardians were telephoned. Three refused to participate and of the remaining, 55% were successfully contacted. Main reasons given for FTA were; '*forgot*', '*child was unwell*' and '*appointment was inconvenient*'. FTA letters were sent to 13% of FTAs. No discharge letters were sent out.
Discussion: A high proportion of parent/guardians were un-contactable. Of those contacted the commonest reason for FTA was forgetting the appointment. FTA and discharge protocols were infrequently followed.
Implementation of findings: Findings prompted the implementation of protocols to: encourage parents/guardians to update contact details; ensure patients leave with a convenient appointment; provide more effective appointment reminders, and introduce a dedicated answer phone for cancelling appointments. Awareness of current departmental FTA and discharge protocols was raised at staff and student meetings. Re-audit will be undertaken in 6 months to assess whether there has been an improvement to the service.

P21

The consent procedure for children having dental extractions under general anaesthetic

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Background: Recent guidelines regarding use of general anaesthesia (GA) in paediatric dentistry state that written consent is required for children undergoing procedures under GA.
Aim: To examine the consent procedure for children undergoing exodontia under GA. Standards: Children undergoing dental GA should have a clearly written consent form, which is signed by both the clinician and the child's legal guardian.
Process: Data were collected retrospectively from 50 case notes of children who underwent extractions under GA.
Results: All cases had a written consent form, which was signed within an average of 2.6 weeks (SD = 2.7) from the date of GA. Patient details were accurate on all forms. The proposed procedure was stated on all forms. However, for 28 cases there was no understandable written description of the type or number of teeth planned for extraction. In 22 cases, risks of GA were not included in the risks section. All forms were signed by a clinician however in one instance the clinician's name and job description were absent. 22 forms were signed by mothers, three by fathers, two by the local authority, and 21 had no clear description of the person signing the consent. Discussion: Although written consent was obtained in all cases, more attention is required to details and the language used. It is also vital that the relationship of the person signing the forms should be clearly documented.
Implementation of findings: These findings will be disseminated to all staff to improve the quality of written consent.

P22

A profile of patients who do not attend dental appointments

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Background: The paediatric department at Birmingham Dental Hospital (BDH) is developing a protocol aimed at reducing patient non-attendance. Patients most likely to fail appointments should be targeted, maximising hospital resources.
Aim: To create a profile of patients who fail appointments.

Method: 80 case records were selected from patients who, between January and March 2008, were recorded on the hospital computer system as did not attend (DNA). Data collected included: age, gender, distance from home to BDH and appointment history.
Result: Seven patients were recorded as DNA in error. Of the remaining 73, the mean age was 10.97 years (range = 3–17 years), 50.7% (37) were female, and patients lived on average 11.3 miles from BDH (range 1.1–81.7 miles). Five patients failed new patient appointments and were discharged. The remaining 68 had a total of 668 scheduled appointments, of which 21.3% (n = 142) were not kept. On average, each patient failed 28.9% of their appointments (range = 4–66%) and 52% (n = 35) DNA multiple appointments. Patients most frequently failed their second appointment (32% of patients). Ultimately, 38.4% (n = 28) patients were discharged from the department. Of patients discharged following DNA (n = 24), 52.6% had completed treatment, 26.3% were mid treatment and 21.1% had not started treatment. Male patients and those aged below 5 years failed a higher proportion of their total appointments than females and older age groups. The distance a patient lived from BDH had no apparent relationship to attendance history.
Conclusion: Patients who are male, aged below 5-years or who have failed previous appointments are most likely to DNA. The second appointment is most often missed.

P23

Social judgements made by adolescents in relation to traumatised incisors

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Background: Our previous investigations have shown that 11–12-year-old children make negative social judgements about other children with visible incisor trauma.
Aim: This further study sought to determine whether older children make similar dental appearance-related judgements.
Method: Year 10 (14–15-year-olds) pupils were invited to look at colour photographs of four different children's faces and to make a social judgement about these children (the subjects). Four classes were randomly allocated pictures of children with visible incisor trauma, and four classes were given pictures of the same children whose photographs had been digitally modified to restore incisor aesthetics. Using a previously validated child-centred questionnaire, participants rated subjects using a four-point Likert scale for three negative and six positive attributes.
Results: 171 children with equal gender distribution completed the questionnaires. Subjects with visible incisor trauma were viewed significantly more positively than the same child with normal incisor appearance ($P < 0.05$, independent t-test). Girls tended to rate all subjects more favourably than did their male peers.
Conclusions: These findings are the converse of those for 11–12-year-olds, suggesting that age has a significant effect on how children and young people reportedly view each other. It is acknowledged that high levels of self-monitoring are exhibited by teenagers, which may have caused participants to modify their responses to what they considered to be more socially acceptable. Further qualitative enquiry would be necessary to explore this theory, but investigators who conduct research with adolescents should be aware that high levels of self-monitoring behaviour may manifest as social acceptability bias.

P24

Audit of caries risk assessment recording

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Background: Dental caries is a common disease amongst children in the UK. However, its distribution is skewed in the population. By identifying those individuals who are at greater risk, resources can be targeted at preventing its development with subsequent significant health benefits.
Aim: To determine compliance with published guidelines on caries risk assessment and prevention by staff in a paediatric department of a dental teaching hospital.
Standard: Caries risk status should be documented in the case-notes of all patients (100%).
Process: The case-notes of children referred to the paediatric department of the Charles Clifford Dental Hospital, Sheffield, were reviewed retrospectively for the documentation of caries risk, oral hygiene instruction, and prescription of fluoride or fissure sealants. Following dissemination of results the audit cycle was repeated.
Results: The case-notes of 100 children assessed between October 2007 and January 2008, repeated for the same period 1 year later, were included. For the first and second cycles, the mean age of participants was 7.2 years (SD = 3.1 years) and 6.9 years (S.D = 3.4 years), respectively. A caries risk assessment was recorded initially for a minority of children (11%) and improved to over a quarter (27%). Prescription of fissure sealant remained unchanged (82%), while prescribing of fluoride increased (16%–25%) and recording of oral hygiene declined (7%–44%) between audit cycles.
Discussion: Strategies are required to continue the improvements seen and address the issues raised. The findings reflect the difficulties in altering practice.
Implementation of findings: To develop a local protocol and enhanced staff training.

P25

General anaesthetic management of two autistic patients attending for dental treatment

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Background: Children with autism often receive dental treatment under general anaesthesia (GA). The challenges of autism, including desires for an unchanging environment, ritualistic behaviour, and maintenance of personal space can precipitate high levels of anxiety for patients, carers and staff. The successful implementation of our previously described autistic care pathway is illustrated by the cases described.
Presenting problem: Two autistic boys were referred into our community dental service, neither suitable for treatment under local anaesthetic or inhalation sedation. Boy X aged 9: was moderately autistic; understood some verbal commands and PEC symbols; showed anxiety on waiting and in unfamiliar environments, and examination was possible with a dental mirror.
Boy Y aged 12: was severely autistic; had no communication abilities and no response to commands; was aggressive in unfamiliar environments, and examination was only possible using clinical holding skills.

Clinical management: Pathway principles, applied at the assessment appointment, resulted in very different management. Boy X: had a later booked start; was pre-prepared using a picture book; had a separate quiet waiting area and watched a favourite video; and was given pre-medication of oral midazolam in a blackcurrant drink in his own cup.
Boy Y: was intolerate of oral or nasal premedication or EMLA and was managed by pre-preparation of separated ward area to allow intramuscular ketamine induction, given immediately and safely after arrival.
Discussion: The contrasting carefully planned management of these differing cases both resulted in successful treatments with high-reported satisfaction, and a relatively stress free experience for patient, carer and staff.

P26

Assessment of anaesthetists' management of dental trauma secondary to endotracheal intubation

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Background: Dental trauma is a recognised complication of endotracheal intubation. A literature review found the incidence to vary from 0.17% to 12.1%. The incidence was widely reported, as were preventive measures, however there was limited information regarding the emergency management of avulsion injuries.
Aim: An avulsion of a permanent central incisor during intubation at Great Ormond Street Hospital (GOSH) was the starting point of this audit. The aim was to gauge the awareness of the anaesthetic team regarding dental trauma and its management.
Standard: All anaesthetic staff should be aware of the emergency management of avulsion injuries.
Process: A dental trauma questionnaire was designed and circulated to all anaesthetic staff at GOSH. These were anonymous to ensure confidentiality but respondents were asked to indicate their grade e.g. consultant.
Results: Approximately 75% of anaesthetic staff reported they had witnessed dental trauma during intubation and 50% claimed to be aware of the correct emergency management. However, of these respondents, less than half gave the correct responses in the questionnaire; therefore the standard was not met.
Discussion: The results showed that there was much confusion regarding the management of dental injuries amongst anaesthetists and there were no clear documented guidelines at GOSH.
Implementation of findings: A flow chart was designed and presented at a teaching session for all anaesthetic staff at GOSH. This is now displayed in all anaesthetic rooms in the hospital, which provides a quick reference guide in the event of an avulsion injury. This will be re-audited in 6 months.

P27

Prognosis of endodontic fillings in non-vital immature permanent incisor teeth: preliminary findings

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Background: There are very few published studies on the prognosis of endodontic fillings placed in immature permanent incisors.
Aim: To assess the 8-year survival rate of endodontic fillings placed in immature permanent incisors.
Standard: 85% survival of endodontically filled immature permanent teeth in keeping with the British Society of Paediatric Dentistry guideline for 5-year success rates.
Process: A retrospective case series was undertaken of a cohort of patients treated in a hospital paediatric department in the year 2000. Phone interviews with the patient or their general dental practitioner (GDP) were conducted to determine whether treated teeth were still present. If the tooth was present at the time of interview this was considered a treatment success. Analysis of apical closure and method of obturation were also recorded.
Results: Data were available for 24 patients with a mean age 10.8 years at time of treatment. The GDP was contacted in 14 cases and the patient in three cases giving a 71% (n = 17/24) response rate. Overall, 88% (n = 15/17) teeth were reported as still present after 8 years. Obturation methods used were custom gutta percha points or cold lateral condensation.
Discussion: This audit provides evidence that cold lateral condensation and custom gutta percha points for endodontic treatment in non-vital immature permanent incisors results in a success rate which meets the standard.
Implementation of findings: Preliminary findings are positive and we therefore plan to expand the audit to enable calculation of 5–10 year survival. The results will also be used to compare success of obturation using injection moulded thermoplastic gutta percha which is now available in the department.

P28

Evaluation of training needs for a paediatric dental network involved with 'looked after and accommodated children'

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Background: A well established paediatric dental network exists within Greater Glasgow and Clyde (GG&C) health board. In 2006, a rapid referral pathway was established for 'Looked After and Accommodated Children' (LAAC) within designated community dental clinics (European Archives of Paediatric Dentistry 2006; 7:19).
Aim: To assess the need for training within GG & C's paediatric dental network regarding LAAC and the LAAC dental service.
Method: A questionnaire, assessing the knowledge of staff regarding LAAC, the LAAC dental service and the need for training, was disseminated and collected prior to an annual paediatric training day.
Results: Of the 30 questionnaires returned, 83% were completed by paediatric dentists and 17% were completed by dental nurses. 80% of respondents had an accurate understanding of the term 'Looked After and Accommodated Children'. Only 10% stated they had received training on LAAC and 13% had training on the designated LAAC dental service. More than two-thirds of the respondents supported further training on these topics. Three reasons were consistently reported as barriers to good oral health in LAAC: low priority for good oral health, increased access to a cariogenic diet, and a lack of continuity of care within this mobile population. 73% of respondents were aware of the existence of LAAC dental clinics.
Conclusion: Within GG & C's paediatric dental network a majority have an understanding of LAAC. However, a minority have received specific training regarding LAAC and the designated LAAC dental service. Further training on these topics is indicated.

P29

Dental extractions for cardiac patients: the impact of NICE guideline CG64

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Background: RBHSC provides a dental extraction service under general anaesthetic (DGA) for paediatric patients with a significant medical history, including cardiac patients. In March 2008, the National Institute for Health and Clinical Excellence (NICE) published guideline CG64 '*Prophylaxis against infective endocarditis*.' This guideline stated that antibacterial prophylaxis was no longer recommended for patients undergoing dental procedures.
Aim: To establish the impact of guideline CG64 on patterns of referral and to measure compliance with this guideline.
Standard: Baseline data from all cardiac patients attending for DGA in 2007. Patients should not receive antibacterial prophylaxis for dental procedures.
Process: A retrospective audit was conducted of cardiac patients who had DGA July–December 2008. A data collection sheet was designed and completed for 42 patients.
Results: There was no change in the proportion of patients presenting for DGA with a cardiac history. There was an increase in referrals from community dental service from 2007 to 2008 (40.5% vs. 33.3%) but a decrease in referrals from paediatric cardiology clinics (14.3% vs. 24.1%). A proportion of patients (11.9%) had received antibacterial prophylaxis following guideline publication.
Discussion: This audit suggests that, following implementation of CG64, there is a trend towards increased referrals from the community dental service and a decrease in referrals from cardiology clinics. Some patients are still receiving antibacterial prophylaxis on the advice of consultant paediatric cardiologists.
Implementation of findings: To continue to reinforce the importance of dental health for paediatric cardiac patients. To re-audit to confirm changes in patterns of referral, compliance with and reasons for non-compliance with CG64.

P30

Blue chromogenic dental staining in child with no oral intake

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Background: Tooth discoloration is caused by multiple local and systemic conditions. Extrinsic dental stains are caused by predisposing factors and other factors such as dental plaque, foods and beverages, chromogenic bacteria, metallic compounds and medications. Studies have reported correlation between the colour of extrinsic staining and caries risk.
Presenting problem: A 4-year-old boy with West Syndrome, which is characterised by epileptic seizures and severe muscle spasm, was referred to our paediatric dentistry clinic. He had a PEG-gastrotomy and had no oral intake. The presenting complaint was parental concern of trauma to oral tissues from epileptic fits. Examination revealed an unusual navy-blue staining to his teeth which appeared extrinsic in nature. He had evidence of toothwear of his primary dentition, and marked calculus deposits. No caries was detected.
Clinical management: A further dental examination and treatment was carried out under general anaesthesia. The lower central incisors were extracted due to imminent pulp exposure from bruxism, and were sent for histopathology to determine the nature of the staining. A moderate growth of *Pseudomonas aeruginosa*, a blue pigment producing bacteria usually implicated in chronic pulmonary infections, was recovered from a swab sample.
Discussion: The patient had no oral intake attributing to his low susceptibility to dental caries despite limited oral hygiene practice. His extensive lists of medications were not found to have extrinsic dental staining as a possible side-effect. However, these may have altered the oral flora such that growth of pigmented bacteria, normally absent from the oral cavity, was favoured, causing generalised extrinsic staining.

P31

Trends in referral of children with enamel defects to a hospital service

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Background: Clinical impressions suggest that there is an increasing demand for cosmetic treatment of visible enamel defects amongst children and young people.
Aim: This study sought to determine whether there had been any change in the incidence of referral of children with enamel defects to a hospital service over a 5-year period.
Method: A database was compiled of all paediatric dentistry patients who had been referred as new patients to Sheffield Dental Hospital in 2003 and 2008. A random selection of 130 patients was then undertaken for each year. All children who had enamel defects involving their permanent incisors were identified from their clinical records. Referral letters and dental notes were also reviewed for documentation of any appearance-related concerns or reported teasing.
Results: Only 2.3% ($n = 3$) of the 130 new patient referrals in 2003 were due to developmental enamel defects. However, in 2008, the case-mix relating to enamel defects had increased to 9.2% ($n = 12$). These patients had a mean age of 10 years (range = 6–16) and a similar gender distribution. Overall, 60% of children expressed concern about their dental appearance and 13% stated that they had been teased about their teeth. 13% of letters from general dental practitioners also documented dental appearance-related teasing as a reason for referral.
Conclusions: This study found an increase in the referral of children with enamel defects for treatment in a hospital setting. This may, in part, be explained by a heightened awareness of children's appearance-related concerns and a greater demand for aesthetic dental treatment.

P32

Audit of dental services for 'Looked After and Accommodated Children' in Glasgow

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Background: In 2006, a rapid referral pathway was established for 'Looked After and Accommodated Children' (LAAC) within designated community dental clinics.
Aim: To evaluate the uptake of dental services provided by the Salaried Dental Services for LAAC in Glasgow over a 3-month period.
Standard: 100% attendance following request for an appointment. All treatment plans to be completed or ongoing.
Process: Retrospective audit of LAAC patients referred to four primary care clinics between August and November 2008. The attendance, treatment required and completed was recorded.

Results: In total, 21 LAAC patients had appointments during this period of time. Of all appointments, 39% were kept, 16.4% failed to attend and 42% were cancelled over the phone by the children's unit, and 2.5% of children had been relocated.

Each patient required an average of three restorations and one in three patients required an extraction. Unfortunately in 76% of cases, treatment was not completed.

Discussion: LAAC have a high level of dental disease and need to access regular dental care. This audit showed that, regrettably, the uptake of the dental care had declined in comparison to a previous audit[1].

Because only 24% of the necessary treatment was completed there is a need to continue to develop links between the Oral Health and LAAC services.

Implementation of findings: An Oral Health Action Plan now includes designated Liaison Officer to develop links between Oral Health and LAAC.

Reference:

1. LAAC / Young people in residential care within Glasgow . City. Dental Health Audit April 2007. NHS GGC.