Scottish Dental Practice Based Research Network

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Poster Abstracts

The Cost of Out-of-Hours emergency Dental Provision in Tayside: An assessment of the current situation and a proposal of a more cost effective system. ***June D Fraser*; C. Tilley; J. Clarkson; J. Newton Part time MDSc in Primary Dental Care*****.**

Background: The General Dental Services (GDS) contract of 1990 formalised the provision of emergency, out-of-hours treatment for NHS patients. If contacted outside normal surgery hours by a registered patient the GDP is required to offer advice and reassurance by telephone or to reopen the surgery. If seen out of hours, the GDP is paid a recalled dental attendance fee for re-opening the surgery at no cost to the patient. At present, for non-registered patients in Tayside, an emergency dental service (EDS) clinic runs at Ninewells Hospital over weekends and public holidays. During working hours on weekdays they can attend the Dental Hospital in Dundee. There is no dedicated out-of-hours dental provision for non-registered patients in Tayside. Throughout the region these people may also be seen by local Community Dental Offcers (CDOs), dental/medical practitioners, or at the A&E dept at Ninewells Hospital or Perth Royal Infirmary.
Aim: The aim of this project is to compare two different models of delivery of emergency (out-of-hours) dental treatment, and suggest which would be more cost effective and appropriate to the providers of this service.
Objectives: The project's objectives are to:-

1. Compare the cost of two strategies:
    - The current situation.
    - A proposed model whereby all emergency treatment for both registered and non-registered patients is provided at a central point.
2. Assess the opinion of the service providers and users towards these models.

Methods:

- Demographic picture of Tayside. Obtained from Scottish Dental Practice Board (SDPB) and Dental Health Services Research Unit (DHSRU).
- Cost of current system identified from data from SDPB annual reports, Management Information and Dental Accounting Systems (MIDAS).
- Cost of alternative strategy, estimated from projections of fixed and variable costs, of providing a service from a central point.
- A short postal questionnaire to obtain the current practice of patients and GDPs and their opinions towards a dedicated service.

Findings: Data collected to date are being analysed and results are in the process of being presented.

Relevance for Policy & Practice:
"Investing in Dentistry (1997)", the Minister of State for Health says "The government is committed to NHS dentistry- We intend to reduce the inequalities of oral health status and improve accessibility."[1]
In evidence based heath care there is a need for a cost efficient and practical service, i.e., there has to be a "determination of the mix of those services and procedures that maximise benefits and reduce risks for the available resources"[2]
References:

1. Alan Milburn (Minister of State for Health) in a letter "Investing in Dentistry" 9th September 1997
2. A.Cochrane; From Effectiveness to Efficiency.

Hepatitis B Immunisation and Monitoring for Scottish Primary Care Dental Staff. ***M. Anne Moore, Lorna MD Macpherson*, Catherine Kennedy and Jeremy Bagg.***

Hepatitis B virus (HBV) poses a significant occupational threat to dental surgeons, all of whom should be protected by immunisation. Provision of the HBV vaccine and testing for an adequate antibody response should ideally be undertaken via occupational health services (OHS).

This study examined relevant OHS systems in place for dental primary care healthcare workers (DHCW) across all Health Board Areas in Scotland.

It also explored the DHCWs' knowledge of, and access to, these systems in three Health Board Areas. Data from senior staff in all Scottish Health Boards and Primary Care Trusts were collected by self-completing questionnaires. Information from DHCWs was collected via telephone interviews with general dental practitioners and community dental officers in each of Ayrshire & Arran, Highland, and Lothian Health Boards.

Of the 105 DHCWs approached, 82 gave an interview. Thirteen of the 15 Health Board Areas had

comprehensive HBV vaccination and monitoring systems, but only 47% of these covered all DHCWs. Seven Health Board Areas provided vaccination and monitoring for Community Dental Officers only, leaving general dental practitioners to undertake these responsibilities for themselves. The telephone interviews showed major differences between Health Board Areas in relation to access of DHCWs to OHS. Community Dental Officers had greater access than general dental practitioners to OHS for provision and monitoring of HBV immunisation. Overall, 31% of DHCWs were not satisfied with the OHS available.

In order to safeguard both staff and patients, significant further work is required to ensure that all DHCWs in Scotland have access to appropriate OHS support for provision and monitoring of immunisation procedures and related functions such as management of sharps injuries.

A Review of Services for the Dentally Anxious Child in the Highland Health Board area of Scotland. ***Catherine E M Lush***

The publication of 'An Action Plan for Dental Services in Scotland (2000)' tasked each Health Board area to review services for the dentally anxious patient If the NHS in Scotland is to make progress in reducing inequalities in oral health, services may have to be re-designed to meet the needs of this patient group.

A decision was taken in Highland, to conduct the review in two stages. The main priority for NHS Highland was to reduce dependency on general anaesthesia in children. Services for adults would be reviewed in 2002.

This study aimed to review services for anxious children and to determine their perceived adequacy. Views of stakeholders were sought on service modernisation and appropriate incentives for change. The first stage of the process involved a postal questionnaire survey of all primary care dentists in Highland. The response rate was 78%. The results demonstrated that services in Highland for anxious children are under developed, with only 7% respondents offering inhalational sedation. The majority of general dental practitioners (GDPs) claimed little interest in this patient group, whereas 69% of community dentists (CDOs) had an interest and wished to see services further developed. Although the Community Dental Service (CDS) was the main referral service for this group, it was generally not viewed as a specialist service by primary care dentists.

This study recommends that a specialist referral service for anxious children in Highland is developed which is multi-centred and operates to clear standards of care. In Highland, this role should be fulfilled by the CDS as there was little interest from GDPs in becoming involved with this patient group. Such a development would be consistent with the modernisation agenda for the NHS in Scotland, whereby services are designed to meet the needs of a vulnerable group of patients, complimenting services offered by GDPs and allowing the CDS to move towards becoming a specialised service.

Self-reported dental registration and attendance patterns among secondary school pupils in and around Motherwell, Lanarkshire. ***Penny McWilliams* and Elspeth Russell***

Background: Lanarkshire has some of the worst dental health in Scotland amongst 14 year olds, including the highest proportion of children with some teeth which have suffered from tooth decay. An oral health initiative for young people in the Motherwell North S.I.P. area was proposed, and baseline research was commissioned to explore access to NHS dental treatment.
Aims: To explore perceived levels of dental registration, and dental attendance within the previous year, among S3 (14-15 year old) school pupils in Motherwell North and surrounding areas.
Methods: Questionnaires were distributed to seven secondary schools, with a combined school roll of 1163 pupils, and were administered by teachers.
Findings/points of interest: Overall response rates was 70% (59-81% among the various schools).

- 70.4% of respondents thought they were registered with a dentist.
- 85.8% of respondents claimed to have visited a dentist within the last year.
- 18% of the completed questionnaires (60.3% of those who completed this particular question) gave 'no need for dental treatment' as the reason for not going to the dentist regularly.

The results were analysed according to Deprivation Codes, comparing the results from respondents from postcode sectors DEPCATS 1-3 with DEPCATS 4-7. The differences were very small.
Relevance for policy and practice: The high self reported levels of dental registration and attendance are not borne out by figures from Scottish Dental Practice Board, suggesting that initiatives to improve dental attendance may need to tackle the perceptions of the target group with regard to their oral health needs, rather than issues such as access.

A survey of the use and decontamination of matrix bands. ***A H Lowe*[1], J Bagg[2], FJT Burke[3], D MacKenzie[2] & S McHugh[4]***

Matrices are widely used during restorative procedures in dental practice. Currently there is no consensus regarding their cleaning and whether they

should be considered as disposable or reusable systems.

The aims of this survey were to demonstrate which matrix systems are commonly used in Scotland, to indicate the degree of reuse of matrix bands, and to determine, by laboratory investigation, whether currently accepted methods of cleaning are effective in decontamination of assembled matrix bands and retainers within general dental practice.

Data were obtained using a self-reported questionnaire completed by a sample of Scottish General Dental Practitioners, covering infection control methods, matrix system preference and issues relating to the reuse of matrix bands.

The Kastle-Meyer test was used to detect residual blood contamination on cleaned matrix bands and retainers. 479 (77%) questionnaires were returned. 59% of respondents used ultrasonic baths to clean instruments prior to sterilisation. 96% used the Siqveland matrix system with 7% changing bands after each patient. The main factors influencing reuse of bands were time (52%) and cost (39%).

Samples were obtained from 133 Siqveland matrix bands and holders. Of those cleaned using an ultrasonic bath, 4 bands and 2 retainers gave positive results compared with 24 bands and 23 retainers in the hand-scrubbed group, (p=0.000).

In Scotland the majority of dentist use the Siqveland matrix system with 93% reusing bands. Currently accepted cleaning methods are ineffective in the removal of residual blood contamination of assembled Siqveland matrix bands and holders. This investigation has demonstrated higher levels of residual blood contamination on hand-scrubbed Siqveland matrices compared with those cleaned using an ultrasonic bath, and may therefore support the development of guidelines for the reprocessing of used matrix bands or the introduction of single-use systems.

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Provision of Domiciliary Dental Care in Scotland: A Pilot Study. ***M Petrina Sweeney*, Sarah Manton, Lorna D MacPherson & Siobhan McHugh***

Provision of domiciliary care is essential, if equal access to primary care dentistry is to become a reality in Scotland. This pilot study examined Scottish dentists' attitudes to domiciliary dental care.

A postal questionnaire was sent to 20 general dental practitioners (GDP) and 20 community dentists (CDO) in Tayside, Fife, Greater Glasgow and Argyll & Clyde Health Authorities.

The response rate was 90%. Of the respondents, 25 practised in urban areas, five in rural areas and six in mixed urban and rural areas. The patient group most commonly requiring domiciliary care was the elderly, mainly for denture provision. The GDPs provided domiciliary dental care most often in a nursing / residential home setting, but CDOs more frequently provided treatment in the patient's own home. Some GDPs referred more complex treatment to the Community Dental Service, which they believed to be better equipped for domiciliary care.

Eighty percent of GDPs stated that the level of remuneration for domiciliary dental care was inadequate. Of the respondents, 85% had purchased equipment especially for use on domiciliary visits. Many felt that the NHS should fund specific domiciliary items, such as portable chairs and suction. Fifty-eight percent of dentists were unhappy to administer emergency drugs, although most had attended resuscitation training within the last year. Of the 42% who were willing to administer emergency drugs, most were CDOs from one Trust who had received specific training in this area.

There were disturbing findings linked to health and safety, including manual handling issues and poor practices in relation to the transportation of contaminated dental instruments, sharps and waste. These data form the basis of a grant application to examine formally the problems raised by this pilot study and to inform development of national guidelines.

Oral Health Outcomes Following Targeted Community Development Activity. ***Blair Y*, Macpherson LMD, McCall DR, McMahon AD, Stephen KW***

Background: An Oral Health Needs Assessment involving nursery school children in a socio-economically challenged district of Glasgow revealed startlingly poor dental health experience in 1995/96 and persuaded GGHB to invest special funding in an oral health improvement programme.
Aim: Development of future oral health improvement strategies for pre-5-year-olds living in GGHB's deprived communities.
Objectives: Design and implementation of multidisciplinary interventions to improve infants' oral health in the locality, monitoring and evaluation of oral health outcomes and identification of barriers to the establishment of effective integrated multidisciplinary networks to protect oral health of pre-5-yr-olds.
Methods: The determinants of poor oral health in young children were explored with the community, local primary care professionals and many agencies. Community development interventions interpreting

evidence regarding caries-risk factors and caries-avoidance strategies were devised from the dental scientific literature. A wide variety of process measures was recorded. Epidemiological assessment of programme outcomes involved blind and independent studies in matched and contrasting GGHB districts at baseline, after 2yrs & 4yrs.
Findings: Clinically and statistically significant improvements in dental health of infants were recorded in the pilot zone. Overall, at ages 3yrs, 4yrs and 5yrs of age, respectively, mean dmft decreased by 46%, 37% & 31% while the proportions of caries-free children improved. Meanwhile, the percentages of children with histories of tooth extraction decreased. However, no improvement in the proportion of mean dmft treated restoratively was evident.
Relevance for policy and practice: Following community development activity, significant oral health gains by infants were recorded using many indices. Evidence indicates very little restorative dental care was carried out and the absence of a restorative-care component to secure and maintain oral health was disappointing. Issues around access, perceived attitudes, local service structure, economics, payment systems and skill-mix arose which seem to mitigate against the ability of parents/carers and Dental Practitioners to ensure appropriate restorative care is received by infants in this community.

A Multidisciplinary Community Development Programme Designed To Improve Infants' Oral Health*Garton C, Muir A, Blair Y*, Macpherson LMD, McCall D*

Background: North and East Glasgow districts are some of the most homogenous socially-disadvantaged DEPCAT 7 areas in Glasgow. The associations between dental disease and deprivation are well established. Oral Health Needs Assessment in both districts revealed very high proportions of children affected by dental caries at age 3yrs, 4yrs and 5yrs of age.
Aim: To establish a targeted multidisciplinary community development programme following the tenets of the WHO Primary Healthcare Approach and to effect oral health improvement for infants living in socio-economically challenged circumstances. Objectives were to beneficially impact on the determinants of poor oral health, initially in the pilot North district and subsequently after the favourable 2yr evaluation to roll-out similar methodology to the East district to assess transferability.
Methods: Educational interventions at individual, group and community level raised awareness of oral health issues, interpreted and disseminated information from the public health data set and recruited a wide range of people from the community, health, education and social-care professions and volunteers to participate in sustained programmes of targetted community development. Key themes encouraged and enabled: decreased ingestion of sugar, especially frequency, reengineering of eating patterns, promotion of twice daily application of topical fluoride from dentifrice via regular toothbrushing and registration of infants with a General Dental Practitioner by the time of eruption of the first tooth.
Findings: Oral health was promoted in many settings via multidisciplinary community networks which enabled: Breakfast Clubs, group and home toothbrushing with 1000ppm F- dentifrice, support for early dental registration of infants by provision of free dental registration incentive packs to GDPs, community health fairs, sugar-free medicine campaigns, snack and meal policies in primary and nursery schools, parenting support via "Baby Club", fruit distribution schemes to schools and nurseries, an infant bottle-swap scheme and weaning and toothbrushing information delivered via health visitors etc.
Relevance for policy and practice: The practice of a Primary Healthcare Approach towards health improvement is an effective strategy for sustaining targetted multidisciplinary oral health promotion when organised at district level. The establishment of LHCCs throughout Scotland provides an opportunity to extend and further develop this type of activity.

The role of primary care dentistry in the management of patients with eating disorders. *Dr Maura Edwards*

Anorexia and bulimia nervosa with associated self-induced vomiting are aetiological factors in toothwear. It is significant that dentists are involved in the early diagnosis of eating disorders, as prompt intervention can prevent the development of a more serious illness. Specialist referral centres, with associated referral pathways, are considered the gold standard for treatment of eating disordered patients. It is, therefore, important for primary care dentistry to feed into such a pathway. The aims of this study were to gain information on current awareness of eating disorders amongst primary care dentists and to establish current practice. A questionnaire was sent to all general dental practitioners and community dental officers in Greater Glasgow Primary Care Trust. The pro-forma included questions on awareness of eating disorders and management of these patients, as well as the relevance of a recognised referral pathway.

The questionnaire response rate was 67%. Only 16% of dentists described their level of awareness of eating disorders as high. Half (51%) of the respondents had diagnosed patients with eating disorders in the last year, but the numbers diagnosed by each dentist were small (under 5). Many dentists (59%) had suspected an

eating disorder in a patient but had been unable to elicit any information with many patients either denying or refusing to discuss their problem. Only 6% of dentists had contacted a patient's doctor concerning an eating disorder. Eighty-four per cent thought a recognised pathway of referral would be useful and reported they would feel more inclined to question patients about eating disorders if they knew of such referral pathways. Clinical governance and effectiveness issues demands high quality care, integrated between medical and dental disciplines, to improve outcomes for patients. Dentists should be given support to aid the management and referral of eating disordered patients through the production of guidelines and patient information leaflets.

Focus group research and your practice. ***A L McGowan *[a], M C Murray *[a] and R S Barbour *[b].***

Qualitative research and focus groups in particular have been little used in dentistry to date[1]. These techniques are invaluable because they aim to promote understanding of health-related behaviour in everyday situations. This insight into populations may allow improved formulation of methods to produce change.

A focus group study was undertaken in Glasgow to find what might encourage more frequent dental attendance[2]. Six groups from pre-existing groups were recruited to take part in a discussion about dentistry. Discussions were convened in Community venues and were tape recorded for later analysis. The researcher facilitated the groups and all subjects completed a questionnaire about their dental attendance, age, occupation and postcode. The data was transcribed onto a word processor and analysed manually. The groups varied in age and social status.

Well-known barriers to dental attendance were identified: anxiety; cost; lack of perceived need and access issues. All wanted kindness and understanding and good communication was sought. Different groups had different priorities however. The elderly saw no reason to attend, those in middle age attended to prevent unexpected problems and the young were all motivated by appearance. The school children and elderly felt being accompanied helped them to attend. The students and young adults wanted reminders and incentives such as toothbrushes. The young mums in a deprived area wanted free treatment. The middle-aged professionals wanted convenient appointments and parking.

The novice facilitator was able to encourage all the subjects to take part and data was generated with ease. The focus group proved an effective and non-threatening way to elicit interesting insights. Information is relevant in the context of those who generate it but will be applicable to others of similar populations and backgrounds.

In conclusion this was an effective method to establish views on dentistry. This technique could be used in your practice area to suggest ways to alter the behaviour of your own patients. There may be scope for practitioners to run focus groups, perhaps employing an independent researcher in their locality, and to share the findings. As with all information, if this is put to use in practice the effect must be monitored. The focus group participants were happy to share their views and we as professionals can surely gain by listening.

1. Newton T. Qualitative research and evidence-based dentistry: linking evidence to practice. Evidence Based Dentistry 2000; 2:104-106
2. McGowan A. What might encourage more frequent dental attendance? - A focus group study. Thesis. University of Glasgow, 2001.

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