

# Patient presentation at medical practices with dental problems: an analysis of the 1996 General Practice Morbidity Database for Wales

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**Objective** To describe the characteristics of attendances and patients who present to family medical practitioners with oral or dental problems.

**Design** Secondary analysis of standard consultation data.

**Setting** 30 family medical practices in the General Practice Morbidity Database for Wales.

**Subjects** All patients who presented at the practices with an oral or dental complaint during 1996.

**Results** Of the 1,650,882 patient attendances at the 30 medical practices in the study year, 4,891 (0.3%) were for oral/dental problems. The frequency of these attendances varied considerably between practices (ranging from 0.02 to 0.67% of all attendances); 44.2% of the attendances included tooth-related problems, and 42.3% were for diseases of soft tissue, salivary glands or the tongue. On average patients with dental problems attended their doctor twice as frequently as other patients. The majority (75%) of oral/dental attendances were related solely to these problems. Patients with tooth-related dental problems were three times more likely to seek treatment at weekends than patients attending for other reasons.

**Conclusions** The rate of attendance for oral/dental problems varies substantially between practices, but is generally low. The higher rate of attendance for tooth-related problems at weekends suggests that some of the attendances for oral problems might be related to a perceived or actual lack of dental services at these times.

In a previous study of attendance at a dental hospital the number of unregistered patients attending for dental treatment free at the point of delivery increased markedly between 1989 and 1995.<sup>1</sup> There was evidence that substantial numbers of these patients had sought emergency treatment from family medical practitioners prior to attending the dental hospital.<sup>2</sup> While the Community Dental Service and hospital dental services have an important and recognised 'safety-net' role in providing emergency dental care, the role of family medical practitioners in treating patients with dental problems is uncertain.<sup>3</sup> The extent of this perceived problem is such that the General Medical Services Committee of the British Medical Association has published guidelines for family medical practitioners on the management of patients present-

ing with dental problems.<sup>4</sup> While there is evidence that patients with dental problems are presenting at family medical practitioners the scale of the problem and the types of presenting complaint have not been separately investigated.

The General Practice Morbidity Database was established in 1992 as an attempt to develop baseline information on morbidity at health authority, district and all-Wales levels, by aggregating data which are routinely collected by participating family medical practices across Wales. The data are essentially patient record data with the details of any consultations (such as the reason for attendance, or the prescriptions given) attached to each patient record. The 1996 dataset represents over a million attendances from the populations registered at 30 general practices, and therefore offers a unique opportunity to analyse in detail the problem of dental attendances.

The aims of this study were threefold. Firstly, to quantify the extent of the problem of dental attendance at general medical practices. Secondly, for the first time, to characterise the type of patient who generally seeks help from their doctor for oral and dental problems. Finally, the study sought to determine whether attendance at family medical practitioners with dental problems was related to area-level indicators of dental disease or the accessibility of local dental services.

## Methods

Data were analysed from the Welsh General Practice Morbidity Database. Participating practices included in the survey all satisfied the following selection criteria: fully computerised practices, all consultations recorded, with diagnostic data for at least 1 year, using a nationally-recognised coding system and agreement to share (practice and patient) anonymised data throughout the NHS in Wales. In 1996 this database represented a registered population of 313,284 (or 10.7% of the population in Wales) and with an age-structure similar to that of the overall population in Wales.<sup>5</sup> The data analysed represented 30 participating practices. Diagnoses were classified using the Read Clinical Classification System.<sup>6,7</sup> The computer systems at the practices employed AMSyS, Vamp, AAH Meditel, and EMIS software packages. Data extraction from the computers in the general practices was performed as previously described.<sup>8</sup> Data validation procedures were used to check the range of fields and comparisons with standard tables from the practice systems confirmed the reliability of the extraction methodologies.

Attendances were classed primarily according to whether the Read codes indicated an 'oral or dental problem' as one of the reasons for attending (Read code: 'J0...', ie 'Oral/Salivary/Jaw diseases'), and the sub-set of these attendances which included a 'tooth-related' reason for attendance. Where specific dental con-

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ditions were coded as 'examination/signs' (eg, code 2542 — dental caries) or 'history/symptoms' (eg, code 1913 — bad teeth caries) they were reallocated to the appropriate disease category. Table 1 shows which conditions fall into the main categories used in the analysis: 'oral/dental problems' and 'tooth-related problems'. Indicators of the level of dental services and dental disease in the area of each practice were obtained from the Wales Common Minimum Dataset;<sup>9</sup> they were: the number of Community Dental Service and General Dental Service sessions per week per 1,000 population, and the mean number decayed missing and filled teeth of 5-year-olds in the health district). All data were subsequently analysed using *SPSS for Windows*.

## Results

In the study year, the 4,891 'oral/dental' consultations represented 0.3% of all consultations at the 30 medical practices (Table 1). The rate of attendance for oral/dental complaints varied considerably between practices from 0.02% to 0.67% of all attendances (mean = 0.32%, SD = 0.14). There were 3,620 attendances for dental or oral problems alone, and a further 1,271 for several problems (ie for an oral or dental problem and other medical problems). Therefore, three-quarters (74%) of these attendances were not associated with other medical problems but were for oral/dental problems only. For the sub-set of 'tooth-related attendances' the pattern was more definite with 81% of these attendances being for those problems only. Oral/dental and tooth-related attenders were more frequent attenders than attenders for all reasons. Table 2 shows that during 1996 the median number of attendances (for all reasons) of oral/dental attenders was twice that of all attenders. Using the date of attendance allowed an analysis of the attendances by day of the week (Fig. 1). Oral or dental attendances were more than twice as likely, and tooth-related attendances more than three times as likely to take place at weekends.

The percentage of tooth-related attendances was negatively correlated with the practices' registered population ( $r = -0.44$ ,  $P = 0.015$ ). There was no significant ( $P < 0.05$ ) correlation with any of the other selected variables representing local population, and dental service characteristics. The other variables were: the district population density (as a crude measure of urban/rural community), a district indicator of dental disease (mean decayed missing and filled teeth of five-year-olds), and the number of General Dental Service and Community Dental Service sessions per week per 1,000 population in the district.)

Compared with all attenders, oral/dental attenders were much more likely to be children under the age of 5 years, and adults of working age (16–64 years-old). These two age-groups accounted for

71.5% of attendances with tooth-related problems, compared with 56.4% for attenders for all reasons. It is worth noting that 96% of patients attending with disorders of tooth development/eruption were under sixteen years-old, and almost all 0–4 year-olds attended with teething syndrome. Females were slightly more likely than males to attend for oral/dental and tooth-related problems, the same as for people attending for any reason.

Diseases of the teeth (Read codes J01 and J02) and oral soft tissue diseases (J08) together accounted for 61.6% of all attendances with oral/dental codes (Table 1); the Fourth National Study 1991–1992 of Morbidity Statistics from General Practice (MSGP-4) showed that in England and Wales, the equivalent disease codes (ICD groups 521,522 and 528) similarly accounted for 61% of consultations for diseases of the oral cavity, salivary glands and jaws.<sup>7</sup> The specific diagnoses or conditions coded most frequently within the various categories were: teething syndrome within 'tooth development/eruption disorders'; periapical abscesses and dental caries within 'teeth - hard tissue disease'; temporomandibular joint disorders within 'dentofacial anomalies'; and oral aphthae within 'oral soft tissue diseases'.

## Discussion

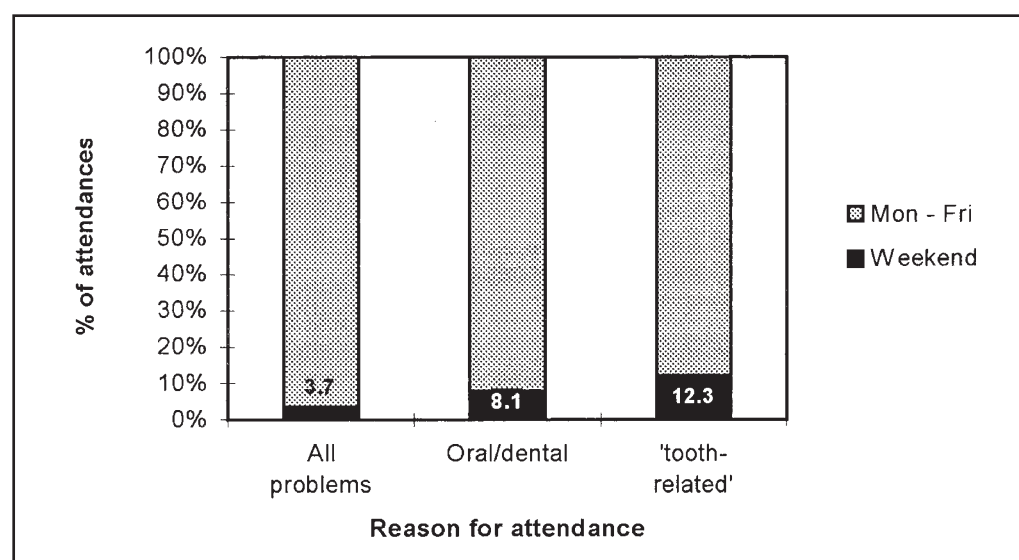
When analysing routinely collected consultation data the validity and reliability of the information should always be carefully considered. The General Practice Morbidity Database is a large, demographically representative dataset with more than 1.6 million attendances at 30 practices, representing more than a tenth of the registered population of Wales in 1996. Although the final database has been validated against the practice records, a potential source of bias in the data is the reliability and accuracy of consultation codings. Most doctors have not been specially trained in the diagnosis of dental conditions, and there has been no training or calibration to ensure that the coding system has been used in the same way by different family practitioners or different practices. Of course, at the level of distinguishing between oral/dental and non-oral problems, family practitioners' codings are likely to be reliable. An exception might be diagnoses for teething syndrome, a diagnosis which may sometimes be used as a 'catch-all' diagnosis for distressed babies where there is no other observable cause. Although all practices in this study claimed that all consultations were recorded, another possible source of under-recording of oral/dental attendances is if out-of-hours or telephone consultations go unrecorded.

It cannot be assumed that all or most oral or dental attendances were inappropriate (ie problems which should have been taken to a dentist rather than a doctor). The analysis therefore separately identified 'tooth-related problems' for which, in most cases: (a) a dentist

**Table 1 Attendances for oral and dental problems by diagnosis**

| Main oral diagnosis                               | No.   | No.   | %     | % of all attendances* |
|---------------------------------------------------|-------|-------|-------|-----------------------|
| Tooth dev./eruption disorder                      | 293   |       | 6.0   |                       |
| Teeth — hard tissue disease                       | 1,479 |       | 30.2  |                       |
| Gingival/periodontal disease                      | 278   |       | 5.7   |                       |
| Other dental disease/condition                    | 111   |       | 2.3   |                       |
| Consultations for tooth-related problems          | 2,161 |       | 44.2  | 0.13                  |
| Dentofacial anomalies                             |       | 274   | 5.6   |                       |
| Diseases of the jaws                              |       | 109   | 22.3  |                       |
| Salivary gland diseases                           |       | 288   | 5.9   |                       |
| Oral soft tissue diseases                         |       | 1,535 | 31.4  |                       |
| Diseases of the tongue                            |       | 275   | 5.6   |                       |
| Other post-operative                              |       | 176   | 3.6   |                       |
| Other oral                                        |       | 73    | 1.5   |                       |
| Consultations for non-tooth related oral problems |       | 2,730 | 55.8  | 0.17                  |
| All consultations for oral or dental problems     |       | 4,891 | 100.0 | 0.30                  |

\*All attendances at the 30 medical practices during 1996,  $N = 1,650,882$



**Fig 1 Consultations at medical practices by day of the week**

would have greater knowledge and experience than a doctor, and (b) patients would be expected to associate the problem with the work of dentists. This sub-classification also coincides with the view of the majority of doctors that soft tissue oral conditions are an appropriate reason for attendance.<sup>3</sup> Overall 'tooth-related problems' were presented in (2,161) 44% of oral/dental attendances, or 0.13% of all attendances. However, for approximately a fifth of these attendances the tooth-related problem was brought to the family practitioner along with other non-oral (general medical) problems. Also, many patients may visit their doctor not knowing that their symptoms are of dental origin.<sup>3</sup> In both these situations it cannot therefore be assumed that the tooth-related problem was the main reason for attendance.

Although patient attendance at general medical practices is often perceived to be a major problem, in this study only 0.3% of attendances were for oral or dental health problems. The MSGP4 study revealed a similarly low prevalence of oral/dental problems amongst family practitioner patients (185 consultations per 10,000 person years at risk).<sup>7</sup> However, the MSGP4 study reported aggregate fig-

ures only, and our data showed that the level of attendance for oral and dental problems varied substantially among the 30 practices. Are there local or practice-related reasons for this variation? Interestingly, the level of tooth-related attendances was correlated with the registered population of each practice: larger practices generally saw fewer tooth-related attendances than one would expect. This is difficult to explain but might reflect that larger practices - those with registered populations of over 10,000 patients — tend to be in areas where other health services, including dental services, are also geographically concentrated.

Oral/dental or tooth-related attenders are principally in the 0–4 year-old and 16–44 year-old age groups, these ages accounting for over half (53%) of oral/dental attenders and almost two-thirds (64%) of tooth-related attenders. It is likely that the age-distribution of oral and dental conditions largely accounts for this. For example, the concentration in the 0–4 year-old age group is almost exclusively because of teething syndrome. This pattern of attendance may be associated with the fact that family practitioners and their nursing staff are often the prime providers of other post-natal healthcare.

**Table 2 Patients attending for 'tooth-related', oral/dental, and all problems**

|                                                     | All problems       | Oral/dental problems | 'Tooth-related' problems |
|-----------------------------------------------------|--------------------|----------------------|--------------------------|
| Number of patients                                  | <i>n</i> = 237,201 | <i>n</i> = 4,263     | <i>n</i> = 1,943         |
| Mean number of consultations per patient per year   | 7.0*               | 11.4                 | 10.1                     |
| Median number of consultations per patient per year | 4                  | 8                    | 7                        |
| Age-band:                                           | %                  | %                    | %                        |
| 0 - 4                                               | 6.6                | 11.8                 | 16.8                     |
| 5 - 15                                              | 12.9               | 10.5                 | 8.7                      |
| 16 - 44                                             | 38.4               | 41.6                 | 47.6                     |
| 45 - 64                                             | 23.4               | 21.3                 | 20.3                     |
| 65 and over                                         | 18.7               | 14.8                 | 6.6                      |
| All                                                 | 100                | 100                  | 100                      |
| Sex                                                 | %                  | %                    | %                        |
| Male                                                | 44.9               | 41.7                 | 45.0                     |
| Female                                              | 55.1               | 58.3                 | 55.0                     |
| All                                                 | 100                | 100                  | 100*                     |

\*Including 'administration codes' (for those contacts not requiring the patient's attendance at surgery). Analyses excluding these codes suggest a mean number of consultations per patient in 1996 closer to 6.<sup>5</sup>

The higher concentration of oral/dental attenders in the 16–44 age-group is harder to explain. As well as the age-distribution of dental disease, it may be that this is also the age-group for which there are the fewest people with exemptions from charges for NHS dental treatment. The weekly pattern of oral/dental attendances compared to all attendances reveals a disproportionate number of attendances at weekends for oral/dental and tooth-related problems. This may be related to a perceived or actual lack of dental services at weekends, or the age-structure of dental attenders. However, although tooth-related attendances are almost three times as likely to occur at weekends (than for attendances for all reasons), they still only account for 0.4% of 'face-to-face' attendances at the weekend.

The results also showed that the average person who attends their family practitioner with oral or dental problems visits twice as frequently as the average patient who attends only for general medical problems. This finding may simply reflect the fact that dental diseases and conditions are often associated with general ill health. However, it might also reflect that patients who visit their family practitioners more regularly have a stronger relationship with their family practitioner, and are therefore more likely to seek advice from them than a dentist whom they see far less. To better explain the variations in the observed levels of oral and dental attendance more research is needed which asks people directly why they attend different primary care settings for particular problems, and which attempts to measure other possible constraints on their ability to access dental services.

## Conclusions

Analysis of the General Practice Morbidity Database for Wales has shown that the overall level of attendance for oral and dental problems is low. The rate of attendance for these problems varies substantially between practices, with smaller practices generally seeing more patients with tooth-related problems than one would expect. Also, a higher rate of attendance for tooth-related problems at

weekends suggested that some of these attendances might be related to a perceived or actual lack of dental services at these times. Even by identifying a subset of 'tooth-related problems', the burden to the NHS and individual practices — and ultimately assessment of the 'appropriateness' of these attendances — cannot be easily judged without further research into the quality of the advice and treatment provided for these patients.

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*Mike Grace, Editor*