

Management information failings and future requirements for dental commissioning groups

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Objective To examine existing secondary care management information systems for dental specialities, and to determine their completeness and suitability for supporting effective primary care led purchasing decisions.

Design An observational cross-sectional study of current information systems in selected secondary care provider units and the applicability of their data for contracting dental services. A comparative study of two information systems in two settings (primary and secondary care) and the utility of the data gathered for contracting for dental services.

Subjects Secondary care activity data was sought from the key secondary dental care providers (hospitals) in two dental total purchasing localities. Referral data were also collected directly from general dental practitioners.

Main outcome measures The integrity, quality and accuracy of current secondary care activity data in dental specialities, in comparison to data supplied from primary dental care.

Results The secondary care activity data was found to be incomplete, inadequate and inaccurate. It was found that due to data retrieval insufficiency, indicative budgets for secondary providers may be reduced to less than half of their actual entitlement. The data inflated individual dental outpatient attendance by 3.3 times between 1995/6 and by 2.5 times between 1996/7.

Conclusion Existing management information systems within secondary care providers are not structured in a way which will adequately inform future commissioning by the dental profession. Communication between primary and secondary care must be increased and data inputting methods in secondary care provider units must be substantially improved.

Total Purchasing (TP) was introduced in 1995 as a new method of allowing those in the 'front-line' of health service delivery to direct funding to the services they felt were most appropriate for the population under their care. It laid the foundation for the formation of the new Primary Care Groups (PCGs) and Primary Care Trusts (PCTs). Total purchasing allowed groups of General Medical Practitioners (GMPs) to 'purchase' hospital and community health ser-

vices from a budget devolved to them by their Health Authority (HA). All services, such as maternity care, mental health care and dental health care services were included. This gave the medical practitioners participating in TP tremendous purchasing power, and the ability to dictate which services would be available to their population. In April 1995 53 TP pilot projects were formed across England and these projects were evaluated by a National Evaluation Team.¹

The newly established TP sites were confronted with many difficult decisions about service provision. The sites therefore tended to concentrate on services which, if changed were thought to have the greatest potential to improve health care delivery. The sites attempted to improve efficiency without disrupting the existing structure of the services. The remaining services were returned to the HA to manage. This was known as 'blocking back'. As secondary dental care services were a minor proportion of secondary health care expenditure they were usually contained in the services 'blocked back' to Health authorities.² However, total purchasing GMPs did have the potential to control the availability of secondary dental care services and thus restrict clinical freedom of the dental profession, if they wished to do so.

The North West Regional Office (NWRO) of the NHS Executive recognised that dental practitioners formed an extremely important part of the health care delivered to communities. They therefore funded a two-year investigation in April 1996 to examine total purchasing and dentistry. The suitability and practicability of including dentists in the TP model of commissioning were assessed. This paper describes some of the findings of this evaluation and the potential implications for dentistry of the new Primary Care Groups which have evolved from the total purchasing model of health care commissioning.

The key aim was to assess the management information systems within secondary care services. Conclusions as to whether they could provide the information which General Dental Practitioners (GDPs) would need to make sensible decisions about which services to 'purchase' were then drawn. The data from secondary care services needed to be complete, accurate and timely, in order that GDPs could make decisions based on accurate information.³

Method

Two TP sites were selected for the evaluation, Ellesmere Port in South Cheshire and Ribblesdale in East Lancashire. They were chosen because the populations had different sociodemographic structures and levels of oral health. This diversity in the sites was needed so that the findings could be generalised to other communities. In both sites GDPs had expressed an interest in working alongside medical colleagues involved in the total purchasing of health care.

Ellesmere Port is an industrial town and had a population of 66,643 at the TP baseline year of 1996. Many of the residents work in the local car and petro-chemical manufacturing industries. The borough has some of the highest deprivation scores in Cheshire. In

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1995/6 wards in Ellesmere Port showed wide variance in dmft (decayed, missing and filled teeth) scores. The lowest dmft score was 0.86 and the highest 4.44, whilst the percentage of children suffering from tooth decay varied between wards, from 27% to 79%.⁴ In contrast, the other dental TP site, Ribblesdale had a population of 30,400 and the local population tended to commute to work in geographically dispersed areas. The ward dmft scores in Ribblesdale varied from 0.25 to 3.25 and the percentages of children with tooth decay varied from 20% to 88%. Thus in comparison to Ellesmere Port, Ribblesdale had less oral disease. The residents were also more affluent.⁵

It had previously been assumed that people were usually registered with a medical practitioner near to where they lived, and with a dental practitioner near to their place of work. If this were so it would influence referral patterns for secondary care. The difference between the employment structure of the two sites therefore allowed examination of whether management information systems maintained in secondary care providers were adequate for both commuting and resident populations.

The health authorities and hospitals in each TP site were asked to provide data about secondary dental care inpatient and outpatient activity for the previous three years. Activity data were derived from hospital Core Minimum Data Sets (CMDS). The Community Dental Services (CDS) in each locality were also asked to provide data relating to patients referred to them who lived within the total purchasing sites.

A primary care referral log was established in each TP locality. All participating GDPs recorded the details of referrals to hospital, community or specialist dental service providers. A second form recorded when each referred patient's treatment was completed. The data was collected for a year. These data were compared with secondary care activity records. Secondary care activity for the total purchasing sites was extracted from hospital databases by selecting only those patients registered with a TP medical practitioner. This was because the total purchasing GMPs would be responsible for the payment to providers for activity generated by patients who were registered with them, even if that activity related to dental treatment.

Results

One HA was unable to retrieve data for outpatient attendance, as it was not routinely collected. Consequently hospitals had to be approached directly for this information.

It was found that medical and dental practitioners shared a similar patient catchment base in Ellesmere Port, whilst the Ribblesdale population, as was expected, often sought dental treatment from practitioners outside the area.

Activity information was successfully retrieved for patients registered with total purchasing medical practitioners in the Ribblesdale locality for the financial years between 1994 and 1997. Total inpatient and outpatient attendance is indicated in Table 1.

Table 1 Recorded total inpatient and outpatient attendance for dental specialities in the Ribblesdale locality

Year	Total Outpatient attendances	Total Inpatient attendance
1994/5	765	115
1995/6	936	150
1996/7	1062	173

Primary care logged activity for a year was a total of 284 referrals (includes both inpatient and outpatient).

In Ellesmere Port only one out of the three main hospital providers was able to produce the requested data. The information was only produced for the financial years of 1995/6 and 1996/7, as data integrity was poor before these dates. Table 2 shows recorded

activity levels generated by the TP site for dental specialities.

Table 2 Recorded total inpatient and outpatient attendance for dental specialities in the Ellesmere Port locality in one provider

Year	Total Outpatient attendances	Total Inpatient attendances
1995/6	2243	266
1996/7	1735	273

Primary care logged activity for a year was a total of 1586 referrals (includes both inpatient and outpatient).

Community Dental Services

In both localities, it was found that the paper based activity records of the Community Dental Services (CDS) did not record an individual's address or postcode. Consequently, in both sites it proved impossible to gain an indication of the level of referral from general dental practice to the CDS.

Primary Care Referral Logs

During the year of data collection 1586 referrals were recorded by Ellesmere Port primary dental care practitioners and 284 by those in Ribblesdale.

Data Integrity

When the hospital data were examined in detail and compared with the data retrieved from the primary care referral logs, the hospital patient administration systems were shown to be incomplete and inaccurate. This was a common occurrence in each site and was evident in all hospital providers' systems.

In Ellesmere Port a comparison between primary care logged referral, and information available from one hospital provider was made. This showed that, although there were 1586 referrals recorded by dental practitioners in Ellesmere Port, only 27% of these were to the main hospital provider. The remaining 63% of referred patients had been sent to other hospital providers, the community dental service or specialist practitioners. However, the two years of activity recorded by the hospital provider registered referral activity from the TP site to be considerably higher than the referral log showed.

A further examination of the hospital data showed single outpatient attendances were being duplicated as many as nine times. The way in which data fields such as diagnosis code, treatment code and where the hospital attendance was booked were recorded meant that, hospital administration system indicated that a single patient was in fact several individuals. When this duplication was corrected, it was shown that, in 1995/6 (Table 2) there were actually 676 attendances rather than 2243 attendances. Similarly in the year of 1996 to 1997 where attendance was registered at 1735, the correct figure was 682. Hospital provider data therefore inflated individual outpatient attendance by approximately 3.3 times between 1995/6 and 2.5 times between 1996/7.

For the Ribblesdale locality data duplication did not occur (Table 2). However, a common occurrence in each TP site was the failure of hospital providers to record a GDP's contract code when a dentist generated a referral. When a medical practitioner referred a patient, the identification code of the practitioner was found to be almost always registered by the hospital computer system. In contrast, a code for a dental practitioner was never inputted. Instead, a dental 'dump code' (which identifies that the patient was referred by a GDP with the prefix 'D', but does not have their contract number), vacant field, or GMP code were used inappropriately to complete data entry.

In order to calculate indicative budgets, the referring practice code had been used to estimate the activity generated by the total purchasing site. Since this data field was incomplete for dental specialities, 53% of outpatient, and 50% of inpatient contacts, could

not be taken into consideration. In Ribblesdale the budget and expectation of service usage was therefore considerably lower than it actually was, as data duplication had not occurred. It was found in Ribblesdale due to data retrieval insufficiency, indicative budgets for secondary care could be reduced to 43% below the actual entitlement. In contrast, GDPs in Ellesmere Port had an inflated expectation of service usage as data duplication overcompensated for the failure to retrieve half of the site's secondary care attendances.

Discussion

A possible explanation for the difference between primary and secondary care recorded referral activity was the fact that patients may have several appointments for advice and treatment and this activity would not be captured by the primary care referral log. This possibility was examined, yet it was revealed that on average patients attended the hospital once a year for oral surgery and orthodontic appointments.

The inaccurate data retrieval and recording mechanisms had created misconceptions within the secondary care providers, about the source of demand for dental specialities. Prior to the evaluation, hospital management and clinicians believed that medical practitioners, tertiary referral and admittance through the accident and emergency department generated most of the activity for dental specialities. Thus, the need for secondary dental services generated by referral from dental practitioners was considered to be almost inconsequential by the provider units.

The above assumption had underpinned the argument that GDPs were not relevant to decisions about secondary care providers. A key concept of primary care commissioning is that the professional closest to the patient is best able to decide upon the effective and efficient use of available resources. Incorrect data generated the belief that GDPs were not well placed to purchase services for dental patients as they seemed to refer only a very small number of patients. This study has demonstrated how this misconception came into being.

Both medical and dental TP pilots did not receive adequate management information from secondary care providers.⁶ This dental TP pilot evaluation revealed data deficiencies which medical counterparts were not aware of, because they had not evaluated the integrity of the information being used. The data inadequacy has highly significant implications for both budget setting and informed primary care service decision making.

Hospital management information systems could quite easily be made accurate and complete. Patient attendance for medical specialities had been charged back to medical practitioners who had opted to become 'fundholders'. Secondary care data for these specialities was therefore needed to identify and charge referring GMPs. This information was therefore complete, as hospital providers would otherwise lose a proportion of their revenue. Since dental speciality attendance was not paid for by fundholding GMPs the management of this information was less stringent. Some dental departments within hospital providers actually maintained a 'stand-alone' computer to record information, as they did not think their hospital patient administration system was reliable. As this practice led to a duplication of data entry it encouraged incomplete records on the hospitals' database.

Information support for the commissioning of dental services by GDPs can be improved without any major expense or upheaval. Current shortfalls in data are due to neglect rather than an inadequate core system. The data duplication in one provider was addressed by ensuring that differing codes for the same attendance were not inputted in fields such as the 'diagnosis code' and 'hospital site code'. Dental practitioners in both TP sites agreed to adopt standard referral forms to help providers to record dentists' identification codes correctly. Secondary care providers for medical referrals automatically input this primary care practitioner identification data. However, in each site there was considerable reluctance to do this for dental referrals without additional payment for the increase in workload to hospital information departments. This made it extremely difficult for the dental TP pilots to accurately ascertain service usage or for the GDPs to adopt and monitor referral protocols. Thus, it is vital that the dental profession ensures that secondary care provider's dental departments correctly record the source of patient referral. This will help improve communication between primary and secondary dental care and promote 'appropriate' referral, as well as allowing true estimates to be made regarding the importance of different referral sources.

Total purchasing is considered to be the closest model of commissioning to Primary Care Groups (PCGs) and Primary Care Trusts (PCTs). These groups allow primary care practitioners to purchase all services, including dental care provision.⁷ Unlike TP, participation in PCGs is mandatory and although GMPs will dominate such groups, representation is also sought from other health care workers. Although there is no planned formal dental representation on PCG boards, it is hoped that the dental profession will be approached for advice on oral health strategies. For these PCG organisations to function effectively in the commissioning of health care it is essential that accurate and complete data is available to the PCGs. This study revealed that information on secondary dental care activity needs to be substantially improved in both hospital and community service providers. Budget allocation to the dental TP groups had been set at incorrect levels, and the data available misinformed the primary dental care practitioners who were trying to participate in total purchasing decisions. The consequence of allowing these data problems to continue could be that the hospital services needed by referring dental practitioners could become unavailable. Unless the dental profession ensures that their patients' secondary care needs are recognised, PCGs risk making inappropriate choices on dental service provision for the localities they represent because of data inadequacy.

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