

# Referral patterns and the referral system for oral surgery care. Part 2: the referral system and telemedicine

P Coulthard,<sup>1</sup> I. Kazakou,<sup>1</sup> R Koran<sup>2</sup> and H. V. Worthington,<sup>1</sup>

**Objective** To investigate GDP opinions of the current referral system and to investigate the need and demand for telemedicine in oral surgery referrals.

**Design** Postal questionnaire.

**Setting** 400 GDPs in Greater Manchester.

**Results** 84% participation rate. 48% were not satisfied overall with the service of their current specialist oral surgery referral site. The principal reason was the length of the waiting time for consultation and treatment. Distance for patients to travel to the specialist unit was also of concern, even though most patients (89%) travelled short distances (return journey of twelve miles or less). 23% of respondents wished to improve their ability to communicate with the oral surgeon and 70% wanted involvement in the patient consultation. Both of these requirements were more likely in younger practitioners.

**Conclusion** There is a need and demand for change in the referral system for oral surgery specialist care. Telemedicine could conceivably be one way to improve access to specialist oral surgery care.

The system whereby a British GDP refers a patient for specialist hospital care is well established.<sup>1</sup> The GDP writes a letter to the consultant or department giving details of the patient's clinical problem and requesting management of the patient. The patient will then be sent an out-patient clinic appointment for consultation, following which he or she may be given a further clinic appointment, placed on a waiting-list for surgery or discharged back to the referring GDP. The patient may actually have several appointments before definitive treatment is instituted.<sup>2</sup> In urgent cases, the GDP may telephone the consultant and arrange for a patient to be seen more quickly but these referrals are rare.

The referral system is fairly tightly controlled in Britain, in that few consultants will see a patient without a letter of formal referral from the GDP or other health care professional, however, it does have a number of perceived disadvantages.<sup>3</sup> These include:

- The inability for the patient to receive specialist attention quickly.
- The need for the patient and his family to travel long distances in order to obtain specialist services. Transport and parking may not be straightforward.
- There is a lack of opportunity for the primary care practitioner to be involved in the diagnosis and development of the treatment program of the patient.

Several recent innovations may lead to changes in the referral system. NHS Direct, a nurse-led 24-hour advice and information helpline, is intended to help the public gain easier and faster advice and information about health, illness and the NHS.<sup>4</sup> There are already concerns that nurses are driven down protocol pathways that err towards the conservative safety net and suggest a visit to the GP too frequently.<sup>5</sup> It is not yet clear from the preliminary data whether demand for other services will increase or decrease. Within dentistry, the introduction of the specialty of surgical dentistry may well ease access to specialist services or patients may still enter a referral system equivalent to that currently used by hospital consultants. Telemedicine may offer a way to improve access to specialists whether they be in hospital or the high street.

## Telemedicine

Telemedicine is an emerging technology that seeks to use advanced telecommunications equipment to enhance medical care. There are two basic technological systems: live interactive video and still image. Telemedicine programmes have been in existence since the 1960's, but only in the last few years have they begun to proliferate.<sup>6</sup> The Integrated Services Digital Network (ISDN) brings a way of communicating that is flexible and efficient and allows an exchange of images, sound and data, with high quality and security.<sup>7</sup> A patient consultation may be conducted via a video conferencing system with the patient and referring practitioner in the practice and the specialist at a remote hospital site. Radiographs may be electronically transmitted as still images. Indeed, most experience in telemedicine has been gathered in diagnosis, especially with respect to teleradiology and telepathology; however an increasing number of institutions have obtained experience in teledermatology, telepsychiatry, telecardiology and telesurgery.<sup>8</sup>

The great technological advances of the past 25 years are having a profound impact on the practice of medicine. Combined with the ever-present demand to decrease costs and improve quality driven by the managed market, telemedicine has emerged as a possible method to at least reach more people and to improve the quality of care.<sup>9</sup> The American College of Physicians (ACP) is the largest speciality society in the United States with over 83,000 Internal Medicine physician members. The ACP seeks to be the foremost comprehensive education and information resource for all internists in support of its mission 'to enhance the quality and effectiveness of health care'. Medical Informatics and telemedicine is an integral part of the American College of Physicians' strategy to achieve its goals.<sup>10</sup>

Telemedicine in medicine has been shown to have the following effects:<sup>11</sup>

- It enable a patient to receive medical attention more quickly
- It avoids the need for the patient and his family to travel long distances and to obtain specialist services.
- It enables the primary care physician to be involved in diagnosis and development of a treatment program

<sup>1</sup>Manchester University Dental Hospital, Higher Cambridge Street, Manchester M15 6FH <sup>2</sup>Present address: Charles Clifford Dental Hospital, Wellesley Road, Sheffield, S10 2SZ

\*Correspondence to: P. Coulthard

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No such studies have been undertaken in dentistry. Telemedicine has the potential to improve the availability of services and advice from dental specialists to GDPs and their patients but is there a need for improved services or demand for such change?

**Study objectives**

- To investigate general dental practitioner opinions of the current referral system
- To investigate the need and demand for telemedicine in oral surgery referrals

**Methods and Materials**

Four hundred GDPs were randomly selected from the Central Manchester NHS Trust Computation Department database of all 900 GDPs registered with the NHS in Greater Manchester. A questionnaire was sent by post to each practitioner in the study.

The questionnaire consisted of three sections, these are described below.

**Section 1**

This section, described in part 1 of this study, collected general information, including practice experience and type of practice. Information about postgraduate oral surgery training and level of confidence in performing oral surgery procedures was also requested.

**Section 2**

In this section, described in part 1 of this study, GDPs were asked to indicate their number of oral surgery referrals, reasons for referral and place of referral.

**Section 3**

GDPs were asked their opinion of the current referral system including expectations of early patient consultation and desire to be more directly involved with patient consultation.

**Results**

**Response rate**

From 400 questionnaires mailed to GDPs in Greater Manchester, 336 replies were received, giving a participation rate of 84%.

**Personal details**

Half (48%) of the practitioners were in the 20–40 year age range and half (52%) were in the 41–70 year age range. Two hundred and thirty eight (71%) of respondents were male and ninety-eight (29%) were female and a greater proportion of the younger age range group were female.

**Satisfaction with specialist service**

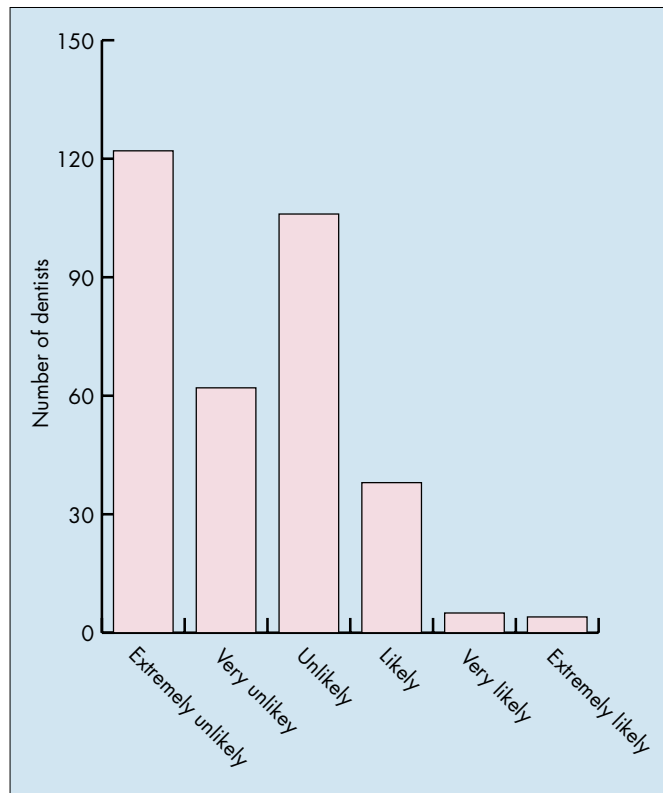
One hundred and forty-two (42%) of respondents stated that they were not satisfied overall with service of their current specialist oral surgery facilities. Dentists were invited to offer any reasons for any dissatisfaction. One hundred and nineteen (84%) of these gave the length of the waiting list for consultation and treatment as their principal reason. The remainder gave no reason. Other reasons given were the distance patients had to travel and the time required to attend a specialist facility. There was no association between dentist dissatisfaction and age or gender of the dentist or whether they worked in a single or multi-handed practice or whether or not they had undertaken post-graduate training.

Dentists were invited to comment on whether their patients expressed any reluctance to being referred to a hospital unit rather than to be treated in general practice, and sixty-two (19%) of respondents perceived that their patients were reluctant. Reasons given included waiting time for treatment, availability of transport,

cost of transport, difficulty in parking and reluctance to be treated by students.

**Perceived likelihood of early consultation with specialist**

Respondents were asked how likely it was that their patient would receive an appointment for an oral surgery consultation within one month of the referral request being received by the specialist. Most dentists perceived this to be unlikely as shown in Figure 1. One hundred and twenty four (37%) thought it extremely unlikely.



**Fig. 1 Dentists perceptions of the likelihood of patient receiving specialist consultation within one month.**

**Distance to specialist provider unit**

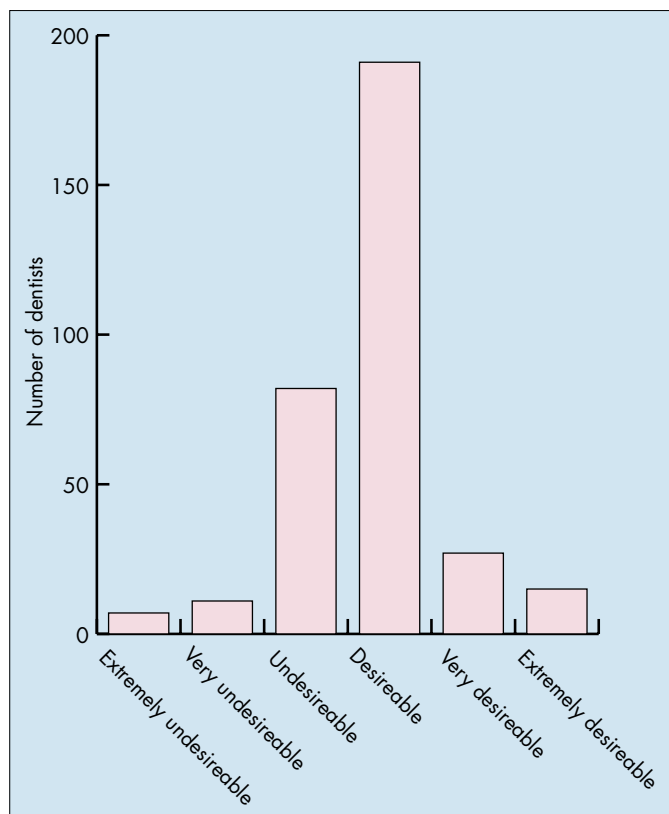
One hundred and sixty-six (49%) dentists stated that their patients had to travel only 1–3 miles to reach their nearest oral surgery specialist facility. The time expected to make this journey was from 16–30 minutes and often less. A further one hundred and thirty-four (40%) stated that their patients had to travel 4–6 miles. Thirty-six (11%) of GDPs stated that their patients would have to travel seven or more miles and only one was more than one hour's travel.

**Desire to improve communication with specialist**

Respondents were asked if they wished to improve the ability to communicate with the oral surgeon. Seventy-seven (23%) of GDPs wished to improve their communication. Dentists in the age group 20–40 years were more likely to want improvement than those in the 41–70 years age group ( $\chi^2=7.98$ ; 1 degree of freedom;  $p=0.005$ ). There was no association between desire to improve communication and the gender of the practitioner, postgraduate oral surgery training or type of practice.

**Desire for involvement in consultation**

Dentists were asked if they would wish to be involved in the diagnosis and treatment planning of the consultation for their patient. Two hundred and thirty-six (70%) thought that such involvement would be desirable, very desirable or extremely desirable as shown in Figure 2. Dentists were more likely to want consultation involvement if they were in the younger age group ( $\chi^2$  linear trend=10.2; 1



**Fig. 2 Dentists desire to be involved in diagnosis and treatment and planning**

degree of freedom;  $p < 0.01$ ). There was no association between gender, whether they worked in multihanded rather than single handed practices or had postgraduate oral surgery training and the desire to be involved.

**Discussion**

A significant number of dentists (42%) were dissatisfied with the service offered by their current specialist oral surgery service provider. For the majority of dentists this was a hospital provider. The main reason offered was the length of the waiting list for consultation and treatment as has been reported in other studies.<sup>12</sup> With few alternative providers outside the hospital service in practice or community settings, dentists are currently restricted in their choice of referral site, but this has the potential to change since the introduction by the GDC of specialist surgical dentistry.<sup>13</sup> A study by Clarke has illustrated that the waiting period for treatment can be more favourable in a specialist oral surgery practice than a hospital.<sup>14</sup>

It was surprising that other reasons for dissatisfaction included the distance and the length of time it may take for a patient to attend a specialist unit. Whilst this has been reported in another study by Clarke,<sup>12</sup> patients in his study, carried out in Grampian region, not uncommonly had return journeys of over 100 miles. In this study, most patients (89%) had a return journey of twelve miles or less. Dissatisfaction with the current facility was not found to be associated with the gender of the practitioner or the number of years he or she had spent in practice.

One-fifth of GDPs stated that their patients showed some reluctance to be referred and to have their surgical care outside the practice environment. The principal reasons cited for patient referral reluctance were similar to the reasons for dentist dissatisfaction with their oral surgery provider. This is not unexpected, as the views of patients were not directly elicited in this study but rather the dentists' perception of their patients' views. Clarke<sup>14</sup> has sug-

gested that the recommendation of the dentist is important in the decision making of the patient, and one may propose that any dissatisfaction of the dentist may be an influence. This does not distract from the fact that a significant number of the dentists in this study were concerned about the waiting time for their patients' consultation. Patients were also concerned about availability and cost of transport and difficulty in car parking.

Telemedicine has the potential to reduce the waiting time for consultation and avoid the patient having to travel to the hospital at all. The patient consultation may take place with the patient and referring practitioner in the practice and the specialist at a remote hospital site communicating via a live video conferencing system. Changing the traditional referral and consultation with telemedicine would also have other potential benefits. The live interactive videoconferencing system would permit more direct access to the specialist by the practitioner and permit involvement in the diagnostic process and treatment formulation. But these potential advantages could also be viewed as disadvantages. Would the GDP be interested in improving communication in this way? The questionnaire asked dentists about their desire to change access to specialists without discussing telemedicine directly, as this technology is still relatively unknown.

Over one-fifth of the dentists in this study wanted to improve communication with their specialist. Younger dentists were more likely to want this change than their older colleagues. A very large proportion of dentists, 70.2%, stated that they desired more involvement in their patients' specialist consultation at which the diagnosis was made and a treatment plan formulated. Again, younger dentists were more likely to want this involvement than their older colleagues. This may be because of changes in undergraduate teaching such that students are now more likely to be encouraged to question and discuss decision making. Perhaps it is also because the relationship between the consultant and general dental practitioner is less formal now.

A common reason for referral to specialist oral surgery services is the medical condition of a patient. Almost half of the study dentists referred for this reason as described in the first part of this study.<sup>15</sup> It had been suggested by other authors that this reason is frequently inappropriate as these patients are frequently treated by undergraduate or junior hospital staff.<sup>2</sup> However, it is likely that practitioners are reluctant to undertake treatment themselves in this situation because they do not have the required specialist knowledge or because of concern that treatment time may be increased.<sup>16</sup> Improved access by telemedicine to specialists could conceivably reduce such referrals and those for advice concerning difficulty of surgery or for a second opinion by providing the appropriate advice to enable a significant number of these patients to be managed in the primary care setting. Some of these clinical presentations are complex and referral decision making may be less amenable to help from referral guidelines than particular specific surgical problems. A study of a telemedicine service for women whose pregnancy was suspected of fetal abnormality demonstrated that such a service is technically and clinically feasible. It was found to reduce the need for physical referral while increasing the rate of consultation, allowing better selection of patients who might benefit from referral.<sup>17</sup> Involvement of general dental practitioners in the diagnosis and treatment planning would provide education and could conceivably have a similar effect on referral.

**Conclusions**

A significant number of dentists were dissatisfied with the current referral system, suggesting that there is a need to change this system for oral surgery specialist care. The principal concern was the length of the waiting time for consultation and treatment, although perceived difficulty in travelling to the specialist unit, usually at a hospital, was also a factor. The advent of surgical dentistry may

address some of these issues but telemedicine could conceivably be another way to improve access to specialist oral surgery care. However, is there any demand for such an innovative change to the traditional referral system? More than one-fifth of the dentists in this study stated that they desired improved communication with the specialist and 70% stated that they wished to be involved in the consultation process. This suggests that there is a demand for change.

*With thanks to all the Greater Manchester dental practitioners who took the time to complete the questionnaire.*

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