Scottish Dental
Needs Assessment Programme
(SDNAP)

NHS SCOTLAND

Restorative Dentistry

Needs Assessment Report

July 2012

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The Restorative Dentistry Health Needs Assessment was undertaken by the Scottish Dental Needs Assessment Programme (SDNAP) and assessed the specialist restorative dentistry service provision in NHS boards across Scotland.

Key Findings

1 There is a substantial, current demand for specialist restorative dentistry services. As people age, both the demand for restorative dentistry and the type of restorative dentistry required becomes more complex. It seems inevitable in an ageing population that there will be more demand for complex restorative treatments.

2 The average waiting time for first consultation varies between the dental hospitals. Improvements should be made to improve the patient journey and to ensure that national targets are met.

3 Patients and general dental practitioners (GDPs) value the service offered by secondary care restorative dentistry departments.

4 Continued implementation of electronic referral systems with defined referral criteria, would enhance communication and reduce inappropriate referrals between primary and secondary care.

5 The NHS restorative dentistry consultant has significant treatment responsibilities but also delivers teaching and training for junior staff and undergraduate dental students. In addition, there is a requirement to be involved in research, audit and other supporting activities.

6 Although there may be associated recruitment issues, the NHS restorative dentistry consultants believe that middle grade staff would reduce pressure and ensure that patients were treated by the most appropriate clinician.

7 NHS restorative dentistry consultants feel that a managed clinical network workforce model would reduce demand and pressure on the department. This would allow focus on head and neck cancer, cleft lip and palate and hypodontia patients.

Recommendations

1 Prevention should be promoted at both primary and secondary care level to reduce demand for complex restorative treatments.

2 A clear remit for the full range of restorative dentistry specialist services should be defined nationally and resources should be identified to support and develop the service accordingly.

3 Protocols for referrals for restorative dentistry specialist services should be developed locally within the framework of a nationally agreed remit for the service and strictly enforced. Detailed treatment acceptance protocols should be formulated and publicised.

4 Careful consideration should be given to the manner in which the 18 weeks referral to treatment target is applied, given the lengthy and complex treatment interventions in this specialty.

5 The current workforce model should be re-appraised with a greater emphasis on the employ of intermediate staff to ensure patients are seen by the most appropriate clinician.

6 The training needs and remuneration levels of intermediate staff must be identified in order to attract experienced staff.

7 Effective implementation of managed clinical networks should be developed with targeted prioritisation of those patients most in need of NHS specialist care.

8 Training pathways should be developed both for intermediate staff and for GDPs to ensure restorative treatments are offered and carried out effectively at primary care level.

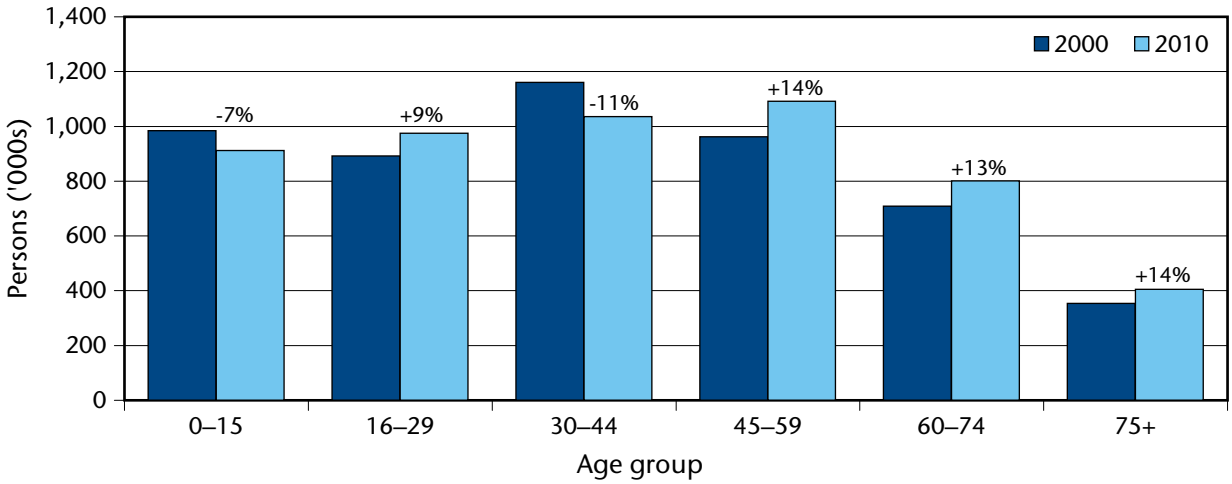
9 Encouragement should be given to GDPs to commit to existing training available, and training should be targeted towards improving skills in providing more complex restorative treatment in the primary care setting.

10 Enhanced communication links between GDPs and dental hospital staff should be developed. Local referral guidelines and staff lists should be easily accessible.

11 Improving data quality and capture centrally in dental health services for submission to ISD should be considered as a priority in order to deliver a more efficient service.

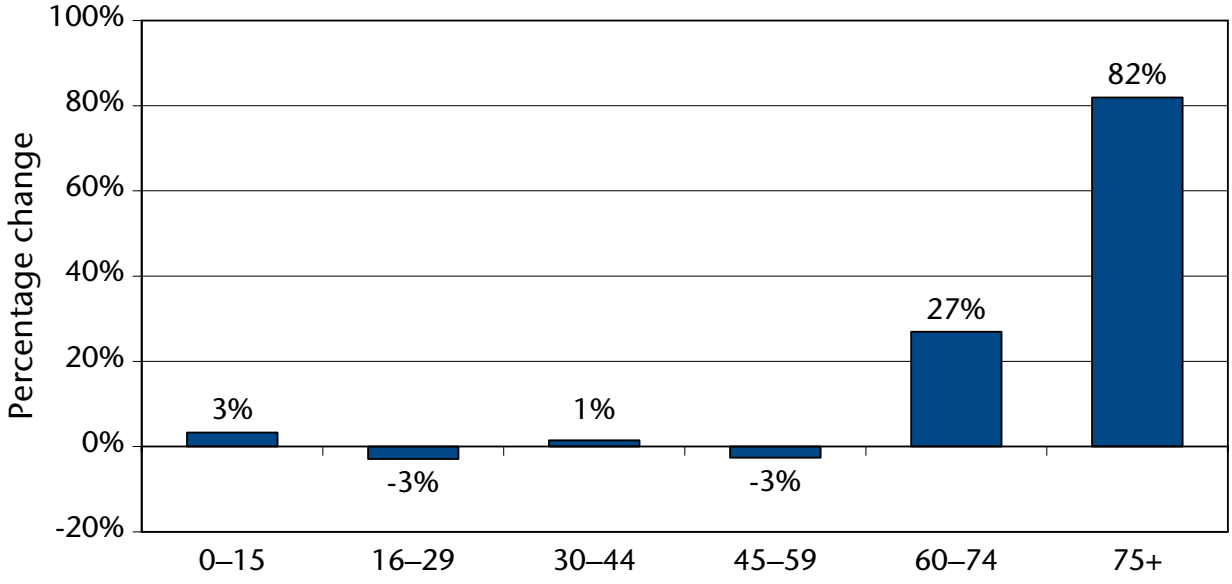
Dental services in Scotland have been reviewed and redesigned over the last decade (Scottish Executive, 2005) to reflect the change in the pattern of dental health and treatment needs. The redesign was driven by a number of issues including the changing age distribution of Scotland's population and the associated change in dental needs. Figure 1 shows a decrease in the population aged under 16 and an increase in those aged 45 and over in the last decade. The projected change in the age structure of Scotland's population between 2010 and 2035 is shown in Figure 2.

Figure 1 Changing age structure of Scotland's population, 2000–2010



Source: NRS (2011a) Mid-2010 Population Estimates Scotland. © Crown Copyright 2011

Figure 2
Projected percentage change in Scotland's population by age group, 2010–2035



Source: NRS (2011b) Projected Population of Scotland (2010-based) © Crown Copyright 2011

A recent SDNAP needs assessment on domiciliary dental care reported that there has been an increase in the proportion of the dentate population with many complex restorative needs (Scottish Dental Needs Assessment Programme, 2010).

Awareness of oral health, dental services and technology in the general population has resulted in changes in patient expectations, a reluctance to accept tooth loss, and a consequential increased demand for advanced restorative care (Scottish Executive, 2006).

The pressure to meet these changing needs is evident and NHS boards are working with restorative dentistry consultants to plan the way forward. This Restorative Dentistry Needs Assessment is a Scottish Dental Needs Assessment Programme initiative to evaluate the current restorative dentistry service in Scotland against this changing need and to make recommendations for future service development.

3.1 Aim

The aim of this report is to conduct a needs assessment of specialist restorative dentistry service provision in NHS boards across Scotland and to make future recommendations.

A Health Needs Assessment (HNA) is defined as 'a systematic method of identifying the unmet health and health-care needs of a population and making changes to meet these unmet needs' (Wright and Kyle, 2006). The HNA approach and method are described in Table 1.

Table 1 Health Needs Assessment

Approach	Method
Epidemiological	Description of the problem Incidence and prevalence Availability, effectiveness and cost-effectiveness of interventions/ services Possible models of care Outcome measures
Corporate	Assessment of stakeholder perception, which includes professional and patient/public groups
Comparative	Comparative study of the services/service models provided in one region with those available elsewhere

The aim of a HNA is to maximise appropriate effective health care policy and to minimise both the provision of ineffective health care policy and unmet need. It provides a systematic framework for identifying unmet health care needs and making changes to meet those needs, and is used to improve health through service planning, priority setting and policy development.

3.2 Objectives

The objectives are to:

1 Study the current restorative dentistry service delivery model in Scotland.

2 Determine demand for specialist restorative dentistry in Scotland.

3 Analyse the workforce required to support the current restorative dentistry service model and potential service models.

4 Determine the perceptions of the service providers concerning the current restorative dentistry service model.

5 Determine the perceptions of patients concerning the current restorative dentistry service model.

6 Consider the current restorative dentistry service model in the light of an Equality and Diversity Impact Assessment (EQIA).

7 Make future recommendations.

3.3 Methods

Data required to inform the report were collected from Information Services Division (ISD) of National Services Scotland and National Records of Scotland (NRS). A prospective data collection was conducted in all dental hospitals, specifically to inform this report, as there were no detailed data available.

Semi-structured interviews were carried out with restorative dentistry consultants to determine their perceptions regarding restorative dentistry services in Scotland. Semi-structured telephone interviews were also carried out with general dental practitioners across Scotland to gather their views about the service offered by secondary care restorative dentistry.

Focus groups were carried out to obtain the public/patient view on the service. The locations of the focus groups were selected using the Scottish Government 6-fold Urban/Rural Classification 2009-2010 by NHS board area (Scottish Government, 2010).

Finally, a literature search was conducted in conjunction with Healthcare Improvement Scotland (formerly NHS Quality Improvement Scotland) to assess inequalities in restorative dentistry and oral health in Scotland.

3.4 Ethical Considerations

Ethical approval was sought from the West of Scotland Research Ethics Service and North of Scotland Research Ethics Committee in December 2009. The response of both committees stated that ethical approval from an NHS Research Ethics Committee was not required as the project was considered to be a service evaluation and not research.

In the invitation to participate in the needs assessment, participants were informed about the response from the ethics committee. Information sheets were distributed to the focus groups and informed consent was sought from each of the participants prior to taking part in the needs assessment. Data were anonymised and data protection policies were strictly adhered to.

Restorative Dentistry can be defined as 'including clinical practice, teaching and research into comprehensive and therapeutic oral health care for patients of all age groups including those who demonstrate medical, physical, intellectual, psychological and/or emotional problems. It involves the restoration and rehabilitation of the oral and dental tissues lost as a result of disease, inheritance and trauma to meet the aesthetic, psychological and functional needs of the patient, often requiring the co-ordination of multi-professional teams within and outwith dentistry' (Association of Consultants and Specialists in Restorative Dentistry, 2011).

Restorative dentistry has been recognised as a specialty in the UK since 1973. It includes the single specialty disciplines of fixed and removable prosthodontics (including implants), periodontics and endodontics.

- **Fixed and Removable Prosthodontics**
  Prosthodontics is the prosthetic replacement of hard and soft tissues using crowns, bridges, dentures and implants for patients who have suffered tooth loss.
- **Periodontics**
  Periodontics is the management of patients with gum disease causing bone and soft tissue loss and potentially resulting in tooth loss.
- **Endodontics**
  Endodontics is concerned with the aetiology, prevention, diagnosis and treatment of diseases and injuries affecting the dental pulp, tooth root and periapical tissues.

4.1 Restorative Dentistry Consultants

The current model of restorative dentistry secondary care in Scotland is consultant-based, where the consultant not only carries out assessments but also delivers treatment. In addition, they are not only responsible for clinical duties but also for leading teams, organisational and clinical governance aspects of their department.

Restorative dentistry consultants are trained to provide care in all three single specialty disciplines of restorative dentistry mentioned above. However, some may limit their practice and focus on one or more areas of the single specialty disciplines of restorative dentistry.

Duties of the post may include:

- Patient care: conducting new patient clinics, assessment, treatment and review clinics, formulating treatment plans or second opinions for referrers, and working in multi-disciplinary teams (MDTs) treating head and neck cancer, cleft lip and palate or hypodontia.
- Undergraduate and postgraduate education: teaching and supervising of junior staff i.e. specialty registrars (StR), senior house officers (SHO) and other members of the dental team.
- Research and governance: consultants are encouraged to take part in research, oversee research projects and engage actively in clinical governance.

4.2 Specialists

Specialists have expert knowledge and experience in the diagnosis and management of problems related to that specialty. They were introduced to improve access to specialist level restorative care in a primary care setting (Department of Health, 1994).

- Specialist in Restorative Dentistry: A specialist in restorative dentistry is a dentist who has completed an integrated formal training over a five-year period in all the single specialty disciplines of endodontics, periodontics and fixed and removable prosthodontics. After completion of training within approved posts and the award of a Certificate of Completion of Specialist Training, the accredited specialist in restorative dentistry is in a position to be appointed to an NHS consultant post in restorative dentistry. A specialist in restorative dentistry may also work as a specialist in the independent sector.
- Specialist in a Single Specialty Discipline: following a three-year training period a small number of specialists have been appointed to consultant posts within a single specialty discipline. However, the majority work in practice within the NHS or the independent sector.

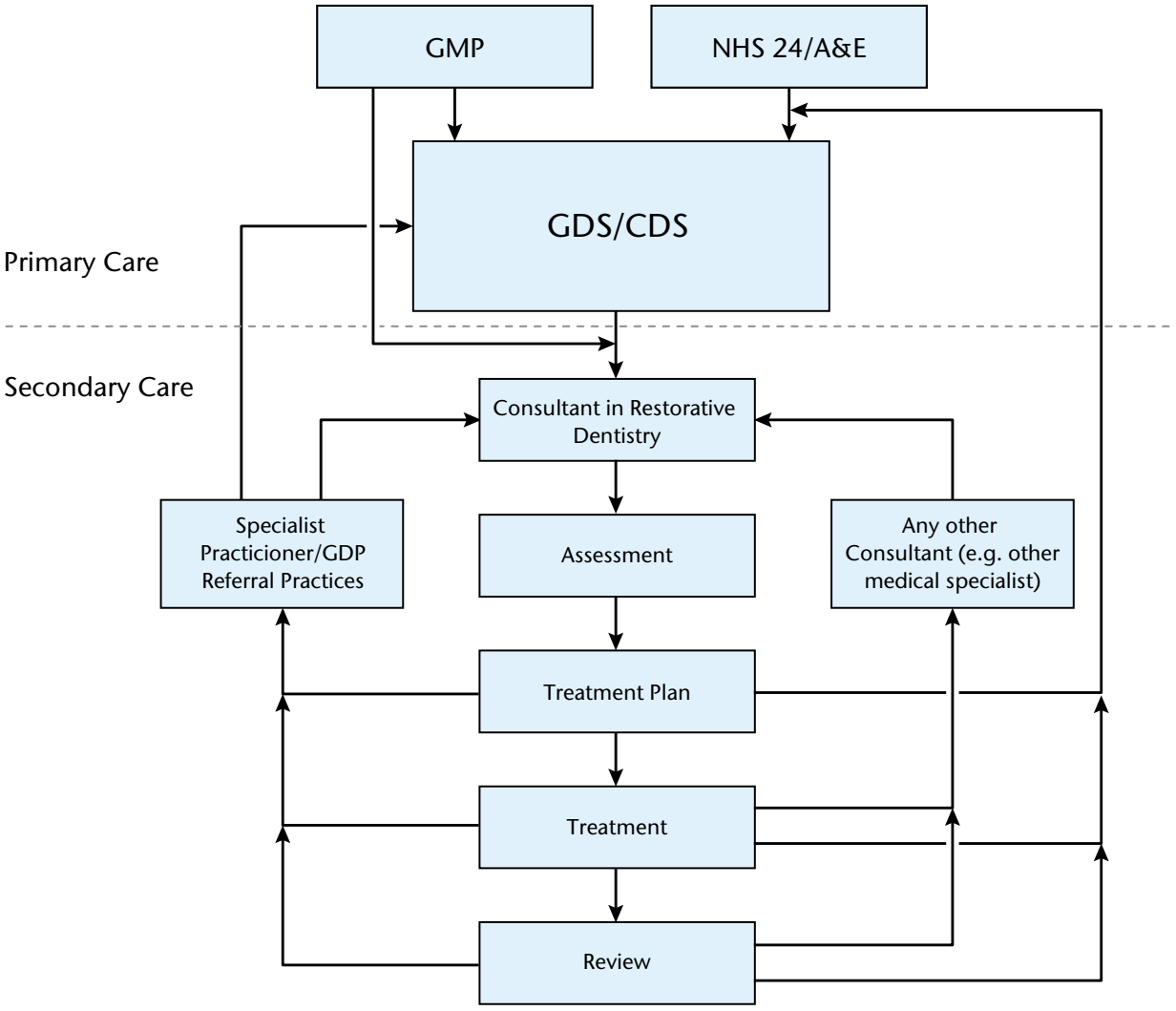
4.3 Dentist with Special Interest (DwSI)

A Dentist with Specialist Interest (DwSI) is an independent practitioner who works within the limits of their competency in providing a special interest service and who can refer on when necessary (Faculty of General Dental Practitioners (UK) and Department of Health, 2004). In England and Wales, a DwSI provides a service which is complementary to secondary care services as a whole, but they do not replace those dentists who have undergone the specialist training required for entry to the specialist list. This role is not formally established in Scotland and similar practices are referred to as ‘GDP referral practices’ within the context of this report.

5.1 Patient Journey

It is important to understand how patients progress through a service delivery model. This helps to evaluate the service and allow the planning of an improved service delivery model for the future. The current patient journey for restorative dentistry services in Scotland is shown in Figure 3. The patient journey has two major interfaces – primary care and secondary care.

Figure 3 Patient journey pathway



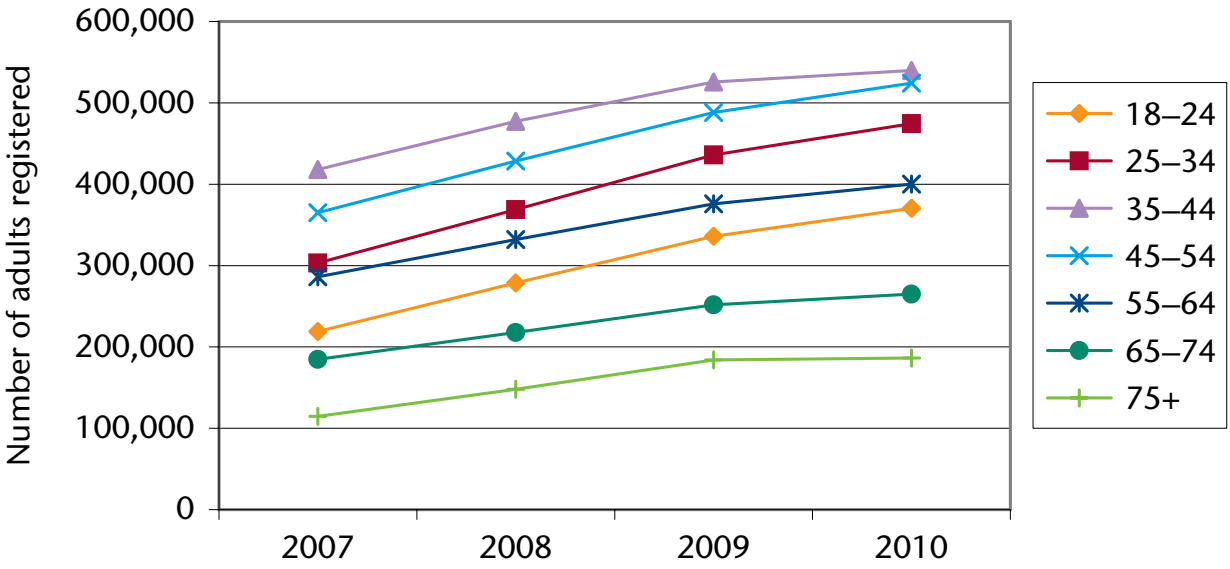
5.2 Primary Care

The term primary care can be described as first-contact health care services directly accessible to the public. NHS primary care dental services in Scotland consist of the General Dental Services (GDS) and the Primary Care Salaried Dental Services (PCSDS) which also incorporates the Community Dental Services (CDS).

5.2.1 General Dental Services (GDS)

GDS services are provided by general dental practitioners (GDPs) who are mainly independent contractors and paid by the Practitioner Services Division of National Services Scotland. GDPs are responsible for the continuing care arrangements of their patients. In 2010, 67% of Scottish adults were registered with an NHS GDP in comparison with 46.5% in 2007. Figure 4 shows the number of adults registered with NHS GDS (ISD Scotland, 2010).

Figure 4 Number of adults registered with NHS GDS, 2007–2010



Data based on the postcodes of dental practices as at 30 June 2007–2010

Source: ISD Scotland 2010

In general, patients contact a GDP directly for dental treatment. Data from ISD in Tables 2 and 3 show the types of restorative treatments and associated costs from 2007 to 2011 (ISD Scotland, 2011).The majority of treatments in primary care settings are simple periodontal treatments, denture provision, root treatments, fillings and crown work. An increase in bridge work and a reduction in complex periodontal treatments over the last two years have also been noted.

Table 2 GDS: restorative dentistry activity, 2007–2011

Year	Treatment Type						
	Simple periodontal	Complex periodontal	Fillings	Root treatments	Crowns	Bridges	Dentures
2007	1,506,949	1,909	2,256,551	105,422	104,385	15,488	124,322
2008	1,493,490	1,865	2,225,705	106,146	101,036	15,759	127,429
2009	1,572,346	1,976	2,314,803	113,600	106,032	16,762	131,433
2010	1,661,421	1,871	2,392,368	123,340	115,725	17,709	143,979
2011	1,757,167	1,999	2,472,319	130,556	120,462	18,803	150,543

The accuracy of this analysis is dependent on data quality and may be affected by errors at source such as data entry, coding and scanning inaccuracies.

Source: ISD Scotland 2011

Table 3 Treatment cost for restorative dentistry services in GDS, 2007–2011

Year	Treatment Cost (£)						
	Simple periodontal	Complex periodontal	Fillings	Root treatments	Crowns	Bridges	Dentures
2007	19,315,617	183,623	32,745,880	6,079,970	14,244,702	3,253,955	17,064,480
2008	19,690,557	185,715	33,374,274	6,434,082	14,254,016	3,343,537	17,805,405
2009	21,354,467	202,767	35,857,868	7,235,931	15,268,073	3,684,670	18,810,453
2010	22,889,352	196,435	37,876,784	8,104,192	16,722,099	3,921,531	20,797,209
2011	24,301,659	206,879	39,448,761	8,674,867	17,339,762	4,149,663	21,763,363

The accuracy of this analysis is dependent on data quality and may be affected by errors at source such as data entry, coding and scanning inaccuracies.

Source: ISD Scotland 2011

GDPs can refer patients to secondary care services if the required treatment is complex or cannot be undertaken in the primary care setting, due to potential non-availability of appropriate equipment or skill. A GDP may also refer patients to secondary care for assessment, diagnosis or treatment planning of complex cases, or if the patient requests a second opinion.

Private services are provided by GDPs and some specialists in their practices. These practices may either be exclusively private or treat patients under a mixture of NHS and private contracts. They can either be based on a fee per item or through commercial dental care plans.

5.2.2 Primary Care Salaried Dental Services (PCSDS)

The PCSDS in Scotland comprises the Community Dental Services (CDS) and the Salaried Dental Services (SDS).

The main role of the salaried service is to:

- Promote oral health.
- Monitor the oral health of the population.
- Provide epidemiology (through the National Dental Inspection Programme).
- Provide general dental services for those who cannot obtain this from GDPs.
- Provide specialist services.
- Provide a dental service for agreed priority groups.

Most PCSDS in Scotland have both CDS and SDS aspects. The staff groups consist of dentists, dental therapists or hygienists, dental nurses, dental technicians and administration staff who can work across either or both aspects of the service due to the 'split' nature of the contracts.

Possible inaccuracies in data have been identified in relation to the numbers of PCSDS dentists and patient registrations, as the amalgamation of the CDS and the SDS has not been completely finalised across Scotland and CDS activity is no longer being reported nationally. Universal registration across all primary care dental services is still awaited.

5.2.3 Community Dental Services (CDS)

The traditional role of the CDS has been in providing dental services for children and priority (special needs) adult patients, subject to meeting specified acceptance criteria, and for those who cannot access treatment from GDS. Other functions include epidemiology, health promotion and preventive public health programmes.

The CDS complements the care provided by the GDS and acts as a safety net for those who cannot obtain treatment from the GDS.

This service does not formally register dental patients. CDS dentists also accept referrals from SDS and GDS and, where appropriate, facilitate transfer of patients back to the SDS or the GDS.

5.2.4 Salaried Dental Services (SDS)

Salaried General Dental Practitioners (SGDPs) provide this service and are responsible for the continuing care arrangements for their patients. NHS boards in Scotland may employ SGDPs in areas of unmet need or where there are difficulties in accessing NHS dental services.

Over 380 salaried dentists are currently working in Scotland (Scottish Dental Practice Board, 2011). These dentists provide the full range of NHS dental services as outlined in the Statement of Dental Remuneration and work from premises owned, supported and staffed by NHS boards.

5.3 Secondary Care

Secondary dental care encompasses a wide range of dental specialist services, with restorative dentistry being one of the services provided. Specialist dental services are mostly outpatient services based in either dental hospitals or sometimes within a general hospital.

The majority of restorative dentistry secondary care in Scotland is provided by the four outpatient dental hospitals as follows:

- Aberdeen Dental Hospital and School (ADH)
- Dundee Dental Hospital and School (DDH)
- Edinburgh Dental Institute (EDI)
- Glasgow Dental Hospital and School (GDH)

Access to secondary dental care services is through referral. Acceptance of referrals is subject to meeting specified criteria set out by individual hospital.

Specialist dental care is also provided in Scotland by private specialist practices, which has an undefined impact on the NHS. However, this will not be discussed in this report as there are no detailed data available.

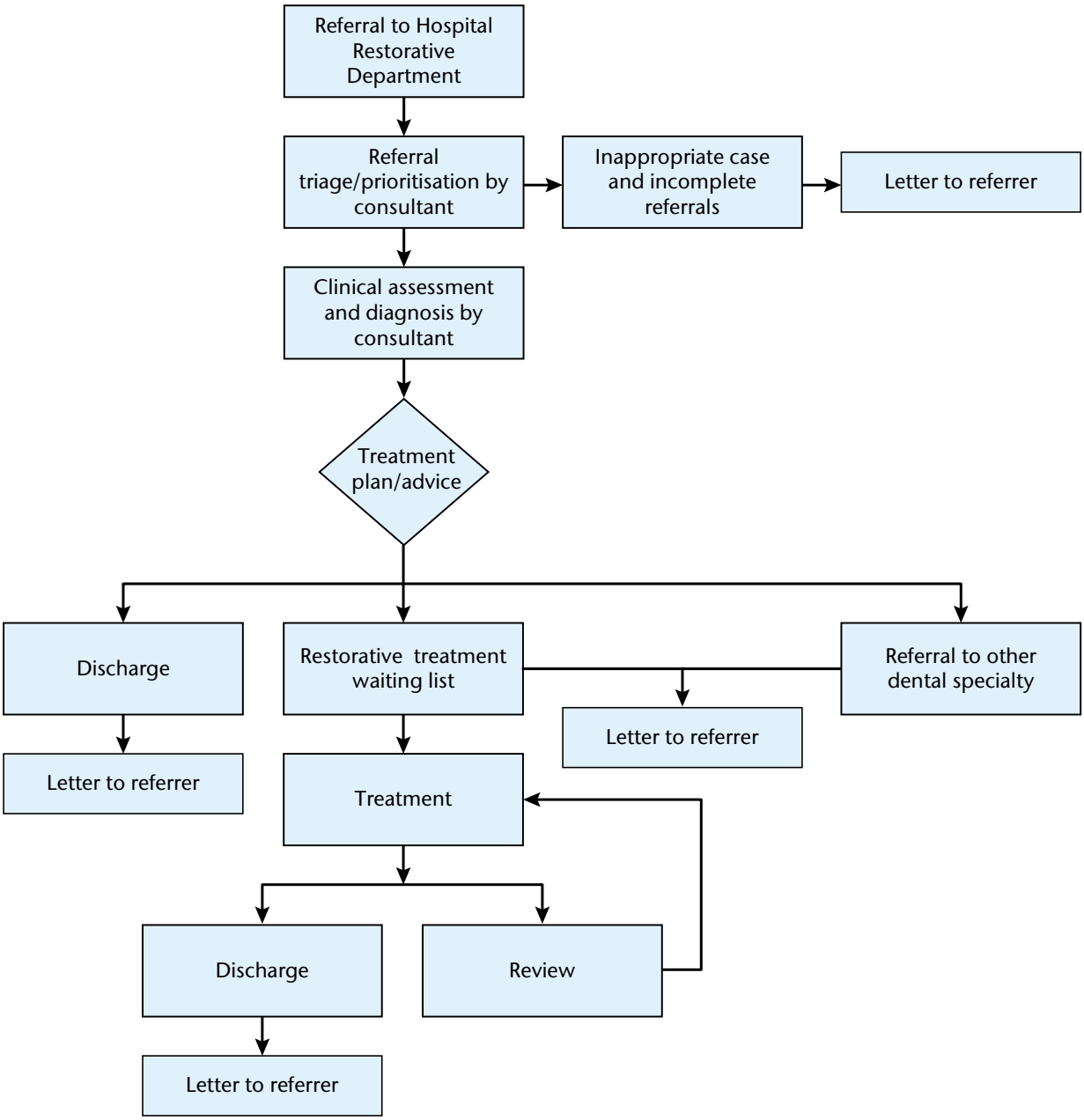
5.3.1 Secondary Care Referral Pathway

Referrals are vetted or triaged by a consultant to identify those which should be prioritised. These patients are invited for a new patient consultation where the consultant (or a member of the team) carries out an assessment for diagnosis and treatment planning. Any inappropriate or incomplete forms should be returned to the referrer.

The consultant will decide if the patient's treatment needs can be more appropriately met by the patient's own dentist or the restorative dentistry department. This is usually based on the complexity of the case. Once the decision has been made, the consultant discharges the patient back to the referring dentist with advice or places them on a treatment waiting list of the department. On occasion, a patient may be

referred to another dental specialty as a tertiary referral. Figure 5 gives an overview of the referral process.

Figure 5 Restorative dentistry secondary care referral pathway



Very small numbers of patients are kept on a review list, e.g. post–malignancy treatment.

Maintaining dentitions in good health is a key challenge, and one which requires considerable expertise. The 2010 Scottish Health Survey (Given, 2011) highlighted that 89% of adults aged 16 and over in Scotland had some natural teeth and showed overall that rates of edentulousness are continuing to fall. Therefore, it is important to understand secondary care activity in restorative dentistry in Scotland.

Secondary care activity has been difficult to establish due to the way in which it is recorded for submission to Information Services Division. Currently, SMR00 recording procedures are not mandatory and so accuracy is dependent on data quality and may be affected by errors at the source of origin. This data deficit is common in all specialties and it is imperative that dental service information is recorded precisely. For the purpose of this report, new and return patient data (2007 to 2010) were collected from each restorative dentistry department and showed that the volume of new and return patients differs significantly between existing institutions.

6.1 SDNAP Prospective Data Collection

SDNAP conducted a prospective data collection of restorative dentistry new patient attendances in the four dental hospitals in Scotland from 15 November to 17 December 2010 (five weeks) to analyse hospital activity. A pilot study was conducted in Glasgow Dental Hospital in the first week of November 2010 to test the feasibility of, and to make amendments to, the data collection form.

All four dental hospitals participated in the prospective data collection and total of 614 forms were collected at the end of data collection period. From week three to the end of week five, Scotland experienced extreme weather conditions which had a significant impact on data collection as a substantial number of hospital appointments were cancelled, as is reflected in the attendance levels in differing weeks of the survey. The prospective data collection form is attached in Appendix 2.

Table 4 shows the numbers of forms collected from each dental hospital per week.

Table 4 Number of collected data forms

	Week	ADH	DDH	EDI	GDH
15 November 2010	1	13	45	17	100
22 November 2010	2	4	34	9	98
29 November 2010	3	11	0	15	47
06 December 2010	4	10	36	10	27
13 December 2010	5	1	35	27	75
	Total	**39**	**150**	**78**	**347**

The lowest number of data collection forms was collected during the week beginning 29 November 2010 (the week of the extreme weather conditions). The number of forms collected increased the following week although ADH experienced an extended period of severe weather conditions which is further reflected in the table. Despite this, it could be expected that the types of referral received during this period would be a true reflection of the type of services requested from secondary care restorative dentistry.

Figure 6 shows that the dental hospitals in Scotland are very different from one another in terms of organisation, expertise, consultant and student numbers. Comparison of activity between the dental hospitals must take this difference into account.

Figure 6 New patient activity numbers

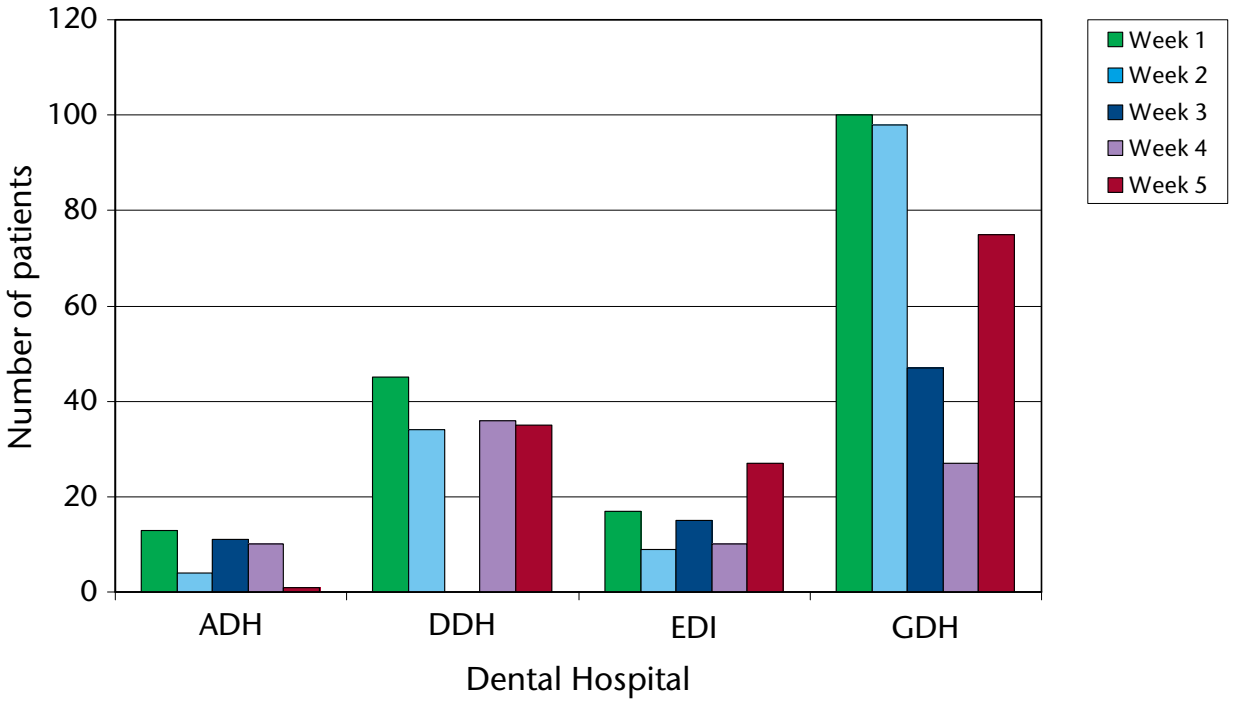


Table 5 shows the majority of referrals come from GDPs as expected, but a few GMPs also refer patients. It should be noted that restorative dentistry departments receive many referrals through MDTs and that these patients are not counted as a rule within the new patient appointments. As a result these cases were not captured during the data collection. Patients referred from this route include oncology, cleft lip and palate and hypodontia patients.

Table 5 Source of referrals

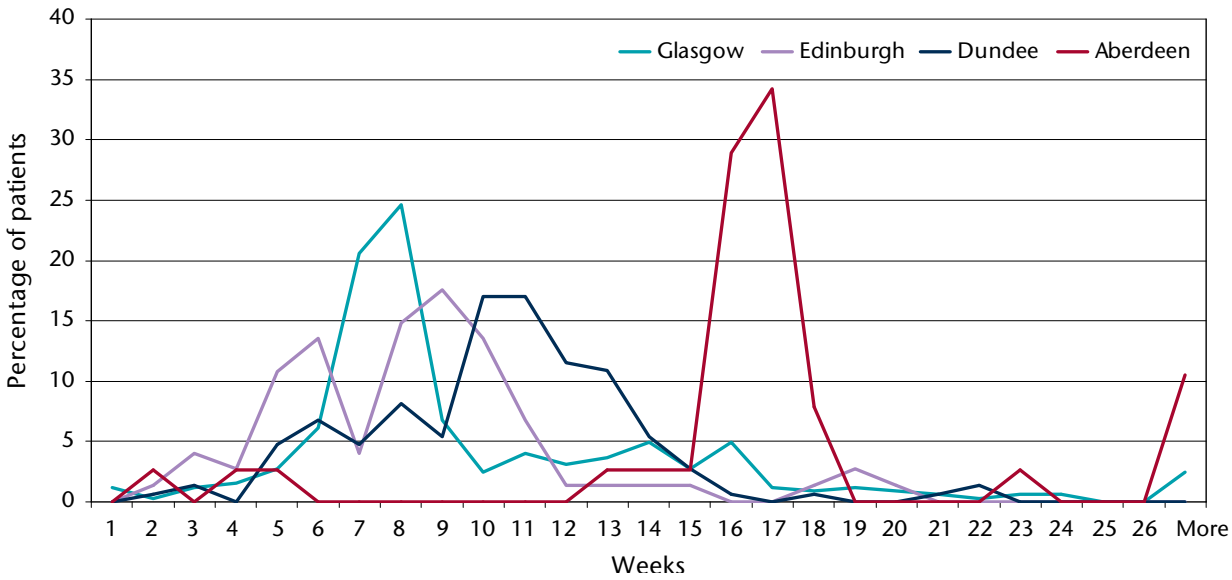
	General Dental Practitioner (GDP)	General Medical Practitioner (GMP)	Other	Unknown
ADH	36	1	-	2
DDH	132	1	-	17
EDI	68	1	-	9
GDH	290	5	3	49
Totals	**526**	**8**	**3**	**77**

6.1.1 Waiting Time for First Consultation

Waiting time is the period between the referral request date and the date of attendance when the patient sees the consultant for the first time for assessment.

The waiting times for first appointments varied considerably among the four hospitals during the period of the data collection. Figure 7 shows two distinct peaks for a first appointment, i.e. at 6 weeks and 9 weeks for all four hospitals.

Figure 7 Waiting time in weeks for first outpatient consultation

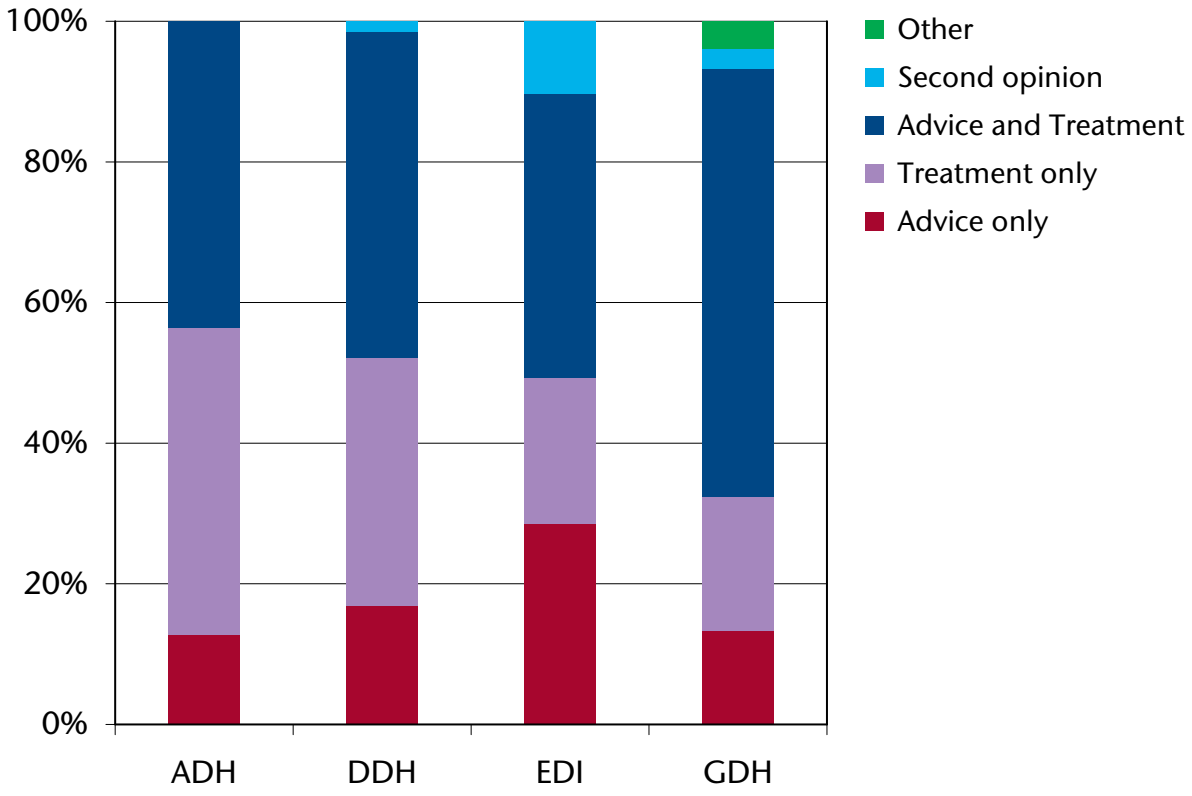


These waiting times for a first appointment are considerably lower than historical norms, and additional management for first appointment has further reduced waiting times.

6.1.2 Types of Requests

In the data collection form types of referral were divided into five categories. Figure 8 shows that the proportion of requests for 'advice and treatment' and 'treatment only' is higher in comparison with other types of request. It would appear that EDI receives more 'advice only' and second opinion requests than the other dental hospitals. This may be due to the staffing profile of the restorative dentistry department and the referral criteria conveyed to GDPs. It may also be a reflection on the dental health of the local population.

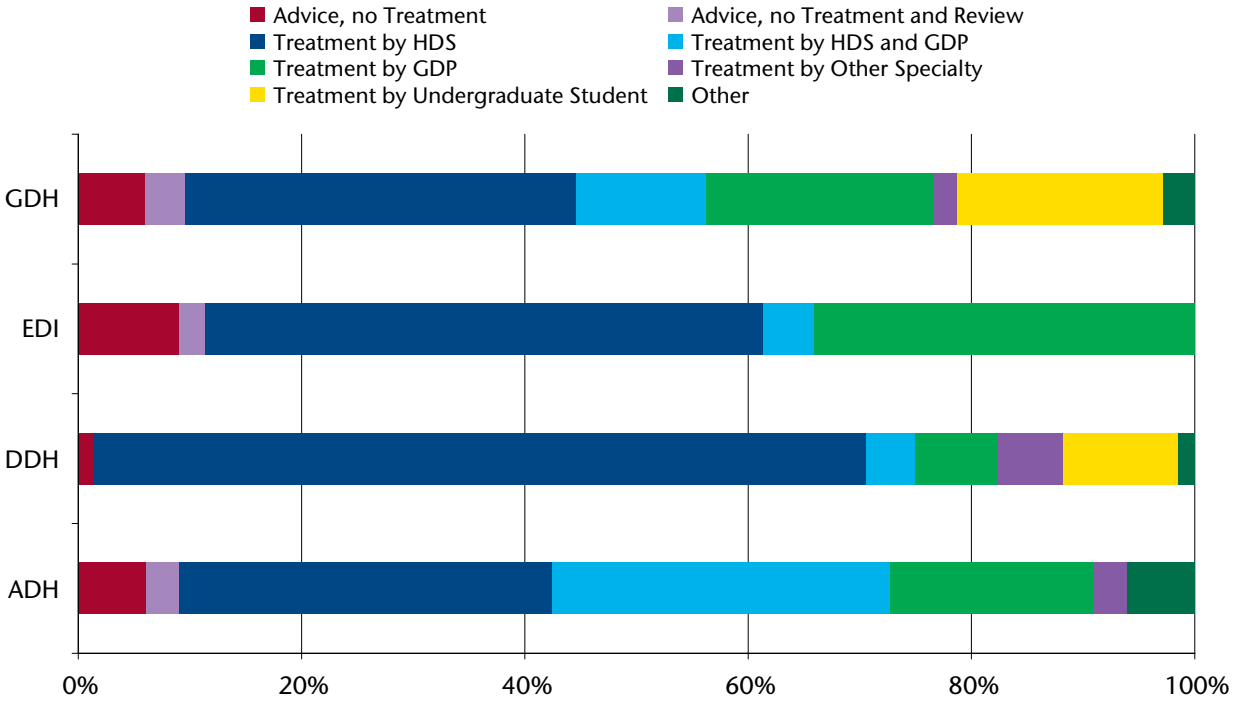
Figure 8 Types of requests



6.1.3 First Consultation Outcome

Figure 9 shows the outcome from the first appointment from the data collection. At the first appointment, the consultant often has to make a decision as to who will carry out the treatment required. In addition, DDH, in comparison with the other hospitals, necessary treatment is carried out by hospital dental staff (HDS). In ADH and GDH, first consultation outcome varies across all options ('advice, no treatment', 'treatment by HDS', 'treatment by both HDS and GDP', 'treatment by GDP' or 'treatment by undergraduate student'). While Figure 8 shows that GDH receives more requests for 'advice and treatment', not all these requests are accepted for treatment within the hospital. It seems likely that the variation in outcome recommendations between the hospitals reflects the variations between the departments in terms of staff, or possibly variations in the referring practitioner. Outcomes will also be influenced by access to undergraduate teaching clinics and by departmental treatment waiting lists and times.

Figure 9 First consultation outcome



6.1.4 Specialist Nature of Treatments and Complexity

Treatment provided in the dental hospitals is more complex (as defined in Section 8.1.3) than would normally be carried out in the GDS. During the SDNAP 5-week prospective data collection, treatments accepted by the restorative dentistry departments were found to be complex requiring consultant input.

6.1.5 Consultant and Referring Practitioner Assessment

In order to analyse quality of referral letters and accuracy of the referring practitioner assessment of patients, data were collected on the specified area of treatment required. Table 6 shows that most of the referrals did specify a treatment area, with GDH receiving around 14% of referrals which did not.

Table 6 Number of referrals specifying treatment area

Hospital	Treatment area specified (%)
ADH	96.9
DDH	94.1
EDI	98.5
GDH	86.1

Table 7 shows the percentage of agreement between the referring practitioner's request of treatment and consultant assessment outcome. DDH has the highest percentage of agreement with 73% and ADH has the lowest percentage of agreement with 40%. This may be explained by the pattern of service provision in ADH which differs from the other hospitals in that the consultants provide a comprehensive restorative dentistry service across the full range of the specialty, rather than focussing on the single specialty disciplines as tends to take place in a more traditional dental hospital setting.

Table 7 Consultant and referring practitioner assessment

Hospital	Percentage of agreement
ADH	40
DDH	73
EDI	64
GDH	69

The workforce in restorative dentistry is reported to be inadequate in Scotland (Association of Consultants and Specialists in Restorative Dentistry, 2011). To provide an appropriate level of service it is perceived that Scotland requires an increase in consultant and middle grade staff numbers. The challenge from changes in population demographics is anticipated to exacerbate this situation and there is a need to consider a redesign of the workforce model to meet the increase in demand.

7.1 Current Workforce

The current workforce in restorative dentistry departments includes:

- NHS Consultants
- Academic Consultants or Teaching Consultants
- Specialty Registrars (StR)
- Senior House Officers (SHO)
- Staff Grade Dentists or Specialty Dentists
- Dental Therapists and Hygienists
- Dental Foundation Trainees

The current workforce in restorative dentistry departments who have direct patient care responsibilities are listed in Table 8. There are 32 restorative dentistry consultants working across the four dental hospitals in Scotland, 16 of these consultants hold academic contracts and another 16 hold NHS contracts. It is important to note that even whole time equivalent consultants will only do a proportion of direct clinical care (see section 7.3). There are 12 specialty registrars currently undergoing training. A study of working patterns and future career aspirations of specialist trainees in dentistry reported that only a fifth would consider an academic appointment compared with 54% who would consider employment in specialist practice (Drugan *et al*., 2004). This pattern could have a major impact on the future workforce.

Table 8 Current workforce numbers in restorative dentistry departments (February 2012)

	NHS Consultants		Academic Consultants		Specialty Registrars (StR)		Senior House Officers (SHO)		Specialty Dentists	
	WTE	CS	WTE	CS	WTE	CS	WTE	CS	WTE	CS
ADH	2	15	0.2	2	1.2	9	1	8	0	0
DDH	3	22	7.8	44	3	15	8	27	1.8	17
EDI	2.6	18	0	0	2	12	1	8	0.8	8
GDH	6	42	5	15	5	26	6	54	3	14

Source: Dental Hospitals

Table 8 shows the number of whole time equivalent (WTE) and clinical sessions (CS) carried out in the restorative dentistry departments across Scotland. It is evident that numbers of specialty dentists remain low, resulting in a disproportional amount of consultant time dedicated to patient care. Moves towards a Managed Clinical Network (MCN) involving non-consultant dentists would address this.

7.2 Current Workforce Model

The current restorative dentistry workforce model in Scotland is consultant based, i.e. the consultant conducts the assessment and is responsible for all the treatments in the department. Table 9 shows the number of referrals during the SDNAP 5-week prospective data collection. Table 10 shows the number of referrals accepted for treatment in the dental hospitals and the staff group allocated to carry out the treatment. The majority of the treatments are allocated to consultants/specialty registrars. The next group of staff allocated to carry out most treatments was the specialty dentist/staff grade/salaried GDP.

Table 9 Number of referrals during SDNAP data collection

Hospital	ADH	DDH	EDI	GDH
Number of Referrals Received	39	150	78	347

Table 10 shows that treatment delivery is also allocated to SHOs, dental foundation trainees, postgraduate students and undergraduate students, who are an integral part of the team.

Table 10 Number of accepted referrals and allocated staff groups

Staff Group	ADH	DDH	EDI	GDH
Consultant/Specialty Registrar	12	44	15	69
Specialty Dentist/Staff Grade/Salaried GDP	8	5	2	34
SHO/Dental Foundation Trainee	3	12	4	22
Postgraduate Student	0	8	4	4
Undergraduate Student	0	4	0	41
Dental Care Professional	7	18	3	42
Total Accepted	**30**	**91**	**28**	**212**

7.3 Consultant Job Plan

- **NHS Consultant Job Plan**
  One Whole Time Equivalent (WTE) NHS restorative dentistry consultant post consists of 40 hours per week, of which 10 hours are allocated for supporting professional activities (SPA). Thirty hours are allocated for direct clinical care which includes patient examination and treatment along with all aspects of patient care administration.
- **Academic Consultant Job Plan**
  Academic consultants holding an honorary consultant contract and teaching contract will fulfill an NHS contract of 20 hours per week, of which typically 15 hours would be associated with direct clinical care, either new patient or treatment clinics, with five hours allocated for SPA.

8.1 Semi-structured Interviews with Consultants

Semi-structured interviews were conducted to investigate the perceptions of a representative sample of restorative dentistry consultants regarding the secondary care restorative dentistry services in Scotland. Two consultants from each dental hospital were interviewed using a topic guide to ensure coverage of all relevant areas. The topic guide used is attached in Appendix 3.

The discussion set by the topic guide focussed on seven topic areas: restorative dentistry service, referral letter, complexity of treatment, demand, 18 Weeks RTT, workforce and MCN model of care.

8.1.1 Restorative Dentistry Service

There was general agreement among the consultants interviewed that there is variability between the dental hospitals on the range of services that is provided. It was recognised that the workforce configuration is different between departments, and that this influences the variation in the level of services that can be offered. The consultants also suggested that there may be geographical variables in the needs of patients.

There was agreement that a clear remit for restorative dentistry service should be defined nationally and resources should be provided to support and develop the service accordingly.

> 'I think there has to be a clear remit of what the service is about and, on the basis of that, there have to be the resources provided across all grades to deliver the service'.

8.1.2 Referral Letter

Vetting of referrals is a routine process carried out by consultants. This is undertaken to ensure that prioritisation of urgent cases takes place, and also for directing cases appropriately. Departments aim to see patients within the current national target times of receiving a letter.

The consultants reported that the quality of referral letters is variable. Whilst the majority are descriptive and appropriate, there was a feeling that they can be of poor quality, with inadequate information provided.

The consultants stressed that the information in the referral letter is important for decision making.

> 'Some GDPs send fantastic referral letters, totally appropriate and very well specified...some send poor ones so you can't say they're all good or all bad. It's the full spectrum'.

Some consultants felt that responsibility for the quality of referrals lies both with the referrer and the restorative dentistry department. It was widely acknowledged that clearly defined referral protocols would improve the situation. Some dental hospitals have clear protocols for one or more specialties; others are in the process of continuing to develop protocols for their departments. The consultants agreed that protocols for referrals should be developed locally, within the framework of a nationally agreed remit for the service and strictly enforced.

It was suggested that some patients are referred to dental hospitals for economic reasons. It was widely perceived by the consultants that the remuneration paid to a GDP for carrying out certain treatments does not always reflect the time and resources required. This applies to, for example, repeated root canal treatment, management of chronic periodontitis and provision of metal-based dentures where the NHS remuneration does not cover the cost to the GDP. It was felt that this may affect the motivation for the GDP to undertake certain treatments resulting in increased referrals to services.

8.1.3 Complexity of Treatment

Some consultants said they accepted only complex cases for treatment. In some departments routine cases suitable for teaching may also be accepted.

> 'Because we're only able to take on so many patients, it's the highly complex cases that we take on...we accept a number of patients for training purposes which are not necessarily very complex and that can be (suitable) for student training or postgraduate training'.

Definition of what constitutes complex restorative treatment was discussed, as it is crucial to the effective functioning of restorative dentistry departments and the development of the specialty within the NHS. With regards to referrals, it seems relatively clear which should be returned to GDPs and those which should be accepted for treatment within restorative dentistry departments.

There are many instances where referring practitioners are simply seeking a second opinion, or wish advice on the stages and sequences of multi-faceted treatment plans. Sometimes, in this situation, the dentist may wish to reassure a patient with an impartial second opinion on their management.

Conversely, more complex treatment is sometimes required. A number of categories of patient are prioritised for treatment within specialist restorative dentistry services. Such patients are often tertiary referrals; they may come from surgical departments (oral or maxillofacial surgery, cleft palate surgery, plastic surgery or ENT), orthodontic departments, oral medicine departments or paediatric dentistry departments.

The consultants categorised these patients from sources that include those:

- who have intra-oral defects following ablative surgery, usually for treatment of head and neck malignancy
- with congenital defects such as cleft palate, hypodontia or dental hyperplasia
- adults who have suffered major facial/dental trauma
- who have suffered childhood trauma which has resulted in tooth loss
- who have dental problems arising because of general medical disorders such as Parkinson's disease, cerebral vascular accident or cerebral palsy or who suffer from xerostomia because of medical conditions such as Sjogren's syndrome or because of medication used in medical treatment
- who have a requirement for multi-disciplinary care, for example in collaboration with oral surgeons and orthodontists in the management of hypodontia or orthognathic disorders.

The consultants observed that ongoing improvement in the surgical management of the high priority patient groups (trauma, cancer and cleft palate) has resulted in an increasing demand for sophisticated restorative dentistry input.

There are a large number of referrals, usually from GDPs, who request restorative dentistry services for patients who present difficulties in management because of complicating dental factors, rather than because of the factors noted above.

Examples of these patients include:

- management of patients with severe or aggressive periodontal disease
- management of edentulous patients when there has been extreme atrophy of the alveolar ridges
- management of dentitions where there has been widespread erosive or attritional tooth wear
- management of dentitions where there has previously been extensive treatment undertaken which has failed, resulting in widespread dental complications (such as fracture of intra-radicular posts, root perforations, caries at crown or bridge margins, periapical pathology or secondary periodontal inflammation and bone loss)
- endodontic treatment particularly in multi-rooted teeth where there are problems including those caused by, for example, excessive root canal curvature, root canal sclerosis or endodontic instrument separation
- management of failed implant treatment.

It is defining what constitutes secondary care within this group that presents a challenge for the design of specialist restorative dentistry services. These types of patients often require treatments which are long in duration, technically challenging and often involve the use of laboratory facilities. Given the widely acknowledged history of poor dental health in Scotland, this can be problematic. As developments in restorative dentistry techniques have evolved, for example implant treatments, the scope for repair or replacement of teeth has become almost limitless. However, the associated costs can be very high.

The consultants felt for this reason that, on a national level, detailed treatment acceptance protocols should be formalised and publicised as a priority. In addition, there is a need for the development of a suitable MCN to allow an ordered and effective approach to treatment.

8.1.4 Demand

In some areas of Scotland, it was perceived by the consultants that the number of referrals has increased. Some indicated the number of referrals had doubled in the previous two years, and for others the increase was quite significant.

It was acknowledged by the consultants that patients may need to wait up to two years for treatment. The consultants also stated that they feel increasing pressure to meet an increasing demand.

Across Scotland, there are varying perceptions of demand for care. This reflects geographical variation in consultant numbers and working patterns. The increase in demand may be attributed to a developing culture of not accepting tooth loss easily, the impact of advanced technology, the need for maintenance of previous work and the impact of the arrival of dentists from other areas of the European Union.

8.1.5 18 Weeks RTT

From December 2011, 18 weeks became the maximum waiting time from referral to treatment for non-urgent patients, but most patients would be seen more quickly (Scottish Government, 2008a).

There was general agreement among the consultants that they may find it difficult to meet this target due to the requirement of consultants to carry out the majority of treatment. Complex treatment may require multiple return visits. There were also concerns that the target might trigger a downturn in arranging treatment for patients with complex treatments. Consultants stressed that this specialty could not be easily compared to many other specialties because of the lengthy nature of treatment that can be required.

8.1.6 Workforce

The consultants interviewed believed that the workforce available for the provision of restorative dentistry services is insufficient. This discrepancy seems, at least in part, to be due to the absence of intermediate staff.

The capacity of the specialist services in restorative dentistry to meet the needs of patients and referring dentists varies in different parts of the country. The major centres of Aberdeen, Dundee, Edinburgh and Glasgow (to varying degrees) have structured mechanisms to accept and process referrals, but more peripheral areas do not. As a consequence, populations in more peripheral areas have to undertake lengthy, costly and time-consuming journeys for consultation, and hospital-based treatment becomes even more arduous. However, restorative dentistry specialist services differ from many other medical/dental specialties because much can be achieved in patient management simply with the provision of expert advice. In addition to formal training, consultants in restorative dentistry acquire the knowledge and skills to help make clinical decisions and modify treatment plans that can be progressed in general dental practice.

While there could be a significant expansion of consultation or assessment clinics into areas lying more peripherally from the main centres, it was generally agreed that effective service provision in more peripheral areas begins to fail when complex or multi-disciplinary specialist treatment is required. This is particularly the case in prosthodontics, where a further complicating factor is the requirement for high-quality dedicated laboratory support.

In addition, the consultants felt the skill mix within the four main dental hospitals varies as a direct result of the size of the consultant establishment in each hospital, as well as the proportion of time each consultant devotes to direct clinical care. NHS consultants have a major commitment to providing direct clinical care, whereas Academic (honorary consultants) and Teaching Consultants devote approximately half of their contracted hours to the provision of education. In this context it is generally accepted that the comprehensive consultant service in restorative dentistry within Glasgow Dental Hospital serves the Greater Glasgow and Clyde catchment area adequately, although it is recognised that there is unmet need in the wider areas of the West of Scotland peripheral boards. In the rest of Scotland, the consultants perceived there is a shortage of consultant-grade staff, and it was strongly suggested that recruitment with a broader geographic spread is required.

8.1.7 MCN Model of Care

Of equal importance to consultant recruitment is the recruitment of intermediate-grade staff to deliver aspects of treatment. The consultants interviewed discussed the MCN model, and how this should work if implemented more fully within the restorative dentistry setting. There was general agreement that it should consist of a consultant-led service where a consultant carries out assessments and delegates treatment to a team member; the assessing consultant retaining overall responsibility for the cases. It was stressed that a skilled and committed intermediate staff

workforce is needed to make this model work effectively.

> 'I think an MCN would work well if you had the people within it to develop the appropriate skills... I don't think we can have a service where only the consultant treats. You need some middle rank staff, where the consultant is the head of a team'.

For many years it has been normal practice for hospital staff in training (i.e. SHOs and StRs) to carry out treatment in restorative dentistry departments, primarily as part of ongoing clinical training. These trainees have differing levels of skill and experience. As such treatment is always undertaken under direct consultant supervision, it often requires considerable input of the consultant's time to provide the necessary element of clinical teaching and supervision.

In addition there has been a long-standing arrangement of visiting GDPs providing treatment within dental hospitals, with patients requiring specialist management being allocated at the discretion of the consultant. This arrangement can be very effective and as visiting practitioners build up skills and experience, sometimes over a period of many years, the service provision within the wider community can be substantial. While the above arrangements remain a fundamental part of the consultant workload, greater efficiency can be achieved by the development of a MCN model.

In the more recent past in some parts of the country there have been appointments of dedicated 'Specialty Dentists' (as distinct from specialist dentists in restorative dentistry or senior salaried GDP) to provide specialist treatment in restorative dentistry following assessment and provision of a detailed treatment plan by a consultant. This development is welcomed by the consultants, but success is entirely dependent on the availability and appointment of suitably skilled and motivated staff. In some areas, there have been difficulties in recruiting staff to these posts. There is widespread agreement that there would be significant advantages to service provision in restorative dentistry if this type of specialty dentist MCN service provision was expanded and, crucially, developed to meet treatment need locally in areas peripheral from the main centres. In peripheral areas it would be essential that close working relationships were established and maintained between the consultants who assess patients and provide treatment plans and the intermediate-grade staff who undertake treatment as directed.

There were some concerns raised in consultant interviews that the level of remuneration available for specialty dentist posts may not be sufficient to persuade experienced dentists to practise within the hospital sector, although this is not a difficulty that has been experienced to date.

Having had skills enhanced, within the context of service provision, intermediate-grade staff would then extend their skills to patients in their own practices thus increasing the level of restorative dentistry provided in GDS.

9.1 Background

NHS restorative dentistry secondary care is provided by four dental hospitals in Scotland. These departments provide advice, treatment planning and restorative treatment to patients of GDPs and other referring practitioners. For a referral to be accepted it is essential for a referring practitioner to be aware of the referral guidelines and protocols. Communication between the referring practitioners and consultants should be clear, unambiguous and realistic to ensure that the quality of care provided is acceptable, particularly as in many areas patients have to travel considerable distances.

9.2 Interview Protocol

Semi-structured interviews were used to evaluate the awareness of referring practitioners regarding secondary care restorative dentistry services and to investigate their perceptions concerning the service. However, it was difficult to gain commitment from GDPs for an interview due to time constraints and the system of GDPs payment (by item of service).

Twenty GDPs were interviewed across Scotland and included referrers to the four dental hospitals, and included both frequent and non-frequent referrers. The topic guide was not a rigid set of questions, but comprised a number of topics (Appendix 4).

9.2.1 Referral

The GDPs reported that they referred patients to restorative dentistry departments for advice, treatment and second opinion. Dentists who considered themselves more experienced appeared less likely to refer as they felt that they had the necessary skills to treat patients in general practice. GDPs reported that they referred patients if they could not perform the treatment in practice due to lack of specialist skill, equipment or as part of the prior approval system. These patients were commonly referred for re-root treatments, multiple crowns and bridges, severe tooth wear, hypodontia, difficult restorative procedures and advanced periodontal problems.

There were some incorrect perceptions discussed by the GDPs concerning services offered by the restorative dentistry departments in some of the dental hospitals.

9.2.2 Guidelines and Expertise

Some GDPs remain unaware of referral guidelines for restorative dentistry departments, despite the fact that they are available. It was also found that they were sometimes unaware of the range of services provided by the departments. It was also discussed that they would welcome clear referral protocols, including a list of staff in department, to help improve the quality of referrals.

9.2.3 Waiting Time

In general, there was agreement among the GDPs that waiting times for first consultation is long for all sub-disciplines of restorative dentistry, and in particular for endodontics. GDPs suggested that the waiting time for treatment was significantly longer.

This point was repeated across Scotland; the GDPs stated the waiting time for first consultation was long although there was an understanding that there were limited resources. Some mentioned that they referred patients to private clinics, if this was financially acceptable for their patients, to reduce delays in treatment.

The GDPs also discussed prioritisation of patients and agreed that patients who are in need of urgent treatment are seen more rapidly.

9.2.4 Quality of Service

On the whole, the GDPs described the quality of service offered by the restorative dentistry departments in terms of treatment delivered as 'excellent' and 'effective'. In terms of treatment planning some GDPs stated that they were sometimes asked to deliver treatments which they felt they were unable to provide, but again there was general agreement among GDPs that consultant staff were very competent and considerate to both the referrer and the patient.

It was suggested that there had been administration issues in dental hospitals in the past. The GDPs acknowledged that the use of the electronic referral system would bring benefit to the process and aid in good communication between the hospital staff and GDP. Additionally, it may also help in reducing inappropriate referrals and reducing waiting time.

9.2.5 Workforce

GDPs generally felt that the number of staff in the restorative dentistry departments is insufficient for meeting demand. It was also felt that staff are under pressure.

> 'I think restorative was one of the departments that were traditionally always short of staff... more so than other departments'.

Some GDPs felt that the pressure on the restorative dentistry departments could be reduced by recruiting restorative dentists across Scotland in district general hospitals. Some GDPs suggested a different workforce model for the whole team. This would include consultants, intermediate staff and training at GDP level to enable GDPs to carry out some more complex treatments in their own practices.

> 'If there were more consultants appointed, they shouldn't all be appointed at... the dental institutions or the dental schools. They should perhaps be in... one of the hospitals. They should be spread around about the country... It's not just about more consultants; it's about bigger secondary care teams in perhaps a different model'.

'I think the whole concept of dentists with special interests is an excellent route to go as a halfway house between consultants and general practitioners and I think that could really fill a gap in a lot of areas'.

9.2.6 Demand for Complex Treatments

GDPs also said that there is a demand for complex restorative treatment. This was attributed to the increase in the number of older people and ageing population, awareness and advancements in dentistry, reluctance to accept tooth loss and maintenance of previous restorative treatment. Some medical conditions also impact on oral health.

The demand for complex restorative treatments could be reduced by promoting prevention at both primary and secondary levels.

10.1 Focus Group Study

As part of the needs assessment, five focus groups were carried out to investigate patient perceptions about the secondary care restorative dentistry services.

10.1.1 Protocol

The focus group topic guide included a number of topics to explore patient and public perception about the service and their attitude towards dental care. The topic guide covered subjects relating to awareness of secondary care dental services and restorative dentistry services, the quality of service offered, patient-centred care, patient safety, effectiveness, efficiency, equity and timeliness of waiting time. The topic guide used is in Appendix 5.

10.1.2 Characteristics

Thirty-one individuals participated in focus groups conducted across the five NHS board areas from February 2010 to March 2011. The groups included both males and females (with the exception of NHS Highland which had all female participants) with ages ranging from 38 to 67.

All the participants from NHS Greater Glasgow & Clyde and NHS Grampian had restorative dentistry secondary care experience which was not the case of the other participants. Their restorative dentistry experience was dependent upon residential address and proximity to a dental hospital.

Participants valued their teeth and felt that the quality of life was better having teeth than having dentures in terms of enjoying the food they eat, appearance and speech.

10.1.3 Awareness

The participants were aware of the services offered by a GDP and the services the local NHS board offered, e.g. participants from NHS Ayrshire & Arran were aware of dental surgical facilities available at Crosshouse Hospital. However, awareness of secondary care or care provided by dental hospitals was more limited in participants residing geographically more distant from a dental hospital.

10.1.4 Treatment

The focus group participants were referred to the dental hospitals for various treatments including dental anxiety, molar extraction, lump in the roof of mouth, crowns, root canal treatments, dentures and receding gums.

10.1.5 Quality

Participants described the quality of the service offered as ‘excellent’ and felt that the consultants made every effort to help as best as they could. There were no complaints regarding the quality of service offered by the dental hospitals. It was felt that the service was not adequate as far as the local areas were concerned but acknowledged that it was the responsibility of local NHS boards to address this issue.

10.1.6 Patient-Centred Treatment

Some participants felt that sometimes they were told about the treatment rather than being given an option to choose, although it was pointed out that a patient should ask if they wanted to know more information. Some participants also felt that sometimes what they were told was not carried out while others mentioned that a full explanation was given before the procedure was performed. On the whole, they felt involved and respected when they were given an explanation of diagnosis and option to choose a treatment.

10.1.7 Safety

In general, patients stated that they felt safe in the dental hospitals and that treatments undertaken in these locations were less painful compared to those undertaken by their local dentist. When asked, participants reported they felt safe being treated by a student or a trainee as long as they were supervised and the patient was given a full explanation of the treatment. Some felt it was a benefit to be treated by a student as they would be seen more quickly.

10.1.8 Effectiveness and Efficiency

Participants mentioned that they felt that the treatments undertaken in dental hospitals were successful and that staff were competent and considerate.

> 'I'm quite comfortable when I leave, that 100% effort has been put in to make sure that my teeth are going to survive'.

10.1.9 Equity and Time

Participants from NHS Greater Glasgow & Clyde felt that the dental hospital was very accessible. Participants from NHS Ayrshire & Arran, NHS Grampian and NHS Forth Valley stated that they had to travel considerable distances for appointments. The participants felt that there is an inequality in access to secondary care restorative dentistry services due to unavailability of treatment locally in more remote or rural areas. It was felt that people who could not travel would miss the benefit of this service. Some of the participants found waiting times long and had registered with a private dentist in the interim. These participants also said that the services offered by private practices were satisfactory and that most of the treatments were undertaken in the practice.

10.2 Conclusion

During the course of this study, it was found that patients living in remote and rural areas had limited knowledge about secondary care dental services. These patients did not access secondary care dental services as often as their counterparts in urban areas. However, those who accessed the secondary care restorative dentistry services reported that they were satisfied by the quality of service offered and felt safe in dental hospitals.

Recommendations

1 Prevention should be promoted at both primary and secondary care level to reduce demand for complex restorative treatments.

2 A clear remit for the full range of restorative dentistry specialist services should be defined nationally and resources should be identified to support and develop the service accordingly.

3 Protocols for referrals for restorative dentistry specialist services should be developed locally within the framework of a nationally agreed remit for the service and strictly enforced. Detailed treatment acceptance protocols should be formulated and publicised.

4 Careful consideration should be given to the manner in which the 18 Weeks Referral to Treatment target is applied, given the lengthy and complex treatment interventions in this specialty.

5 The current workforce model should be re-appraised with a greater emphasis on the employ of intermediate staff to ensure patients are seen by the most appropriate clinician.

6 The training needs and remuneration levels of intermediate staff must be identified in order to attract experienced staff.

7 Effective implementation of managed clinical networks should be developed with targeted prioritisation of those patients most in need of NHS specialist care.

8 Training pathways should be developed both for intermediate staff and for GDPs to ensure restorative treatments are offered and carried out effectively at primary care level.

9 Encouragement should be given to GDPs to commit to existing training available, and training should be targeted towards improving skills in providing more complex restorative treatment in the primary care setting.

10 Enhanced communication links between GDPs and dental hospital staff should be developed. Local referral guidelines and staff lists should be easily accessible.

11 Improving data quality and capture centrally in dental health services for submission to ISD should be considered as a priority in order to deliver a more efficient service.

Association of Consultants and Specialists in Restorative Dentistry (2011) *Role of Consultants & Specialists in Restorative Dentistry*. www.restdent.org.uk/downloads/ACSRD_Consultant_Role.pdf (accessed 16 April 2012).

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Appendix 1: Equality and Diversity Impact Assessment (EQIA)

The Equality and Diversity Impact Assessment is a tool used to evaluate the impact of policies and services on population groups. Based on findings, organisations are required to make improvements to reduce inequalities among the population groups.

The NHS has a legal requirement to complete EQIA under the:

- Human Rights Act 1998
- Scotland Act 1998
- Race Relations (Amendment) Act 2000
- Fair for All – The Wider Challenge (2004)
- NHS Reform (Scotland) Act 2004
- Disability Equality Duty (2006)
- Gender Equality Duty (2007)
- Equality Act 2010

It is widely recognised that dental health inequalities exist in Scotland and the Scottish Government is making changes to reduce inequalities (Scottish Government, 2008b). The Department of Health document Valuing People's Oral Health recommended assessing needs of the population groups through local surveys (Department of Health, 2007). In 2009, the British Dental Association published an oral health inequalities policy (British Dental Association, 2009).

A literature search was conducted in conjunction with the Healthcare Improvement Scotland (formerly NHS Quality Improvement Scotland) to assess inequalities in restorative dentistry and oral health in Scotland. Details of the literature search are as follows:

- Database used: MEDLINE via Ovid interface, 2004 – week 4 2009, English language and online sources
- Start and end date: search was conducted between 26/10/09 and 04/11/09 (database date coverage given above)
- Keywords: restorative dentistry, dental restoration, endodontics, periodontics, periodontology, prosthodontics, dentistry, dental inequality(ies), inequalities Scotland.

Appendix 1 (continued)

Findings

According to the literature search the areas that may be impacted negatively upon by restorative dentistry services are:

1 Poverty and Deprivation
2 Age
3 Accessibility
4 Disability

1 Poverty and Deprivation

Poverty can be defined as a state of living which does not meet the minimum standard of living. It has been found that 870,000 individuals in Scotland were living in relative poverty (before housing costs) in 2009/2010 and include:

- 20% of all children
- 16% of all working age adults
- 17% of all pensioners

(Scottish Government, 2011)

The Scottish Index of Multiple Deprivation (SIMD) provides a relative measure of deprivation. SIMD is calculated across seven domains which include income, employment, health, education, access to services, housing and crime (Scottish Government, 2009).

For this report, a SDNAP 5-week prospective data collection exercise was used to present a time frame of SIMD quintile of patients attending dental hospitals in Scotland. The postcode entered for each patient was used to calculate the SIMD quintile; 1 being the most deprived and 5 being the least deprived. Out of 616 patients, 109 of the postcodes entered were excluded from the analysis as the postcodes were invalid. 507 postcodes were analysed against the SIMD quintile.

Table 11 demonstrates that patients treated in the dental hospitals came from less deprived, as well as the more deprived areas. A total of 92 patients from the most deprived areas were treated in comparison with 119 patients from the least deprived areas. The majority of patients treated come from quintile 2 of SIMD.

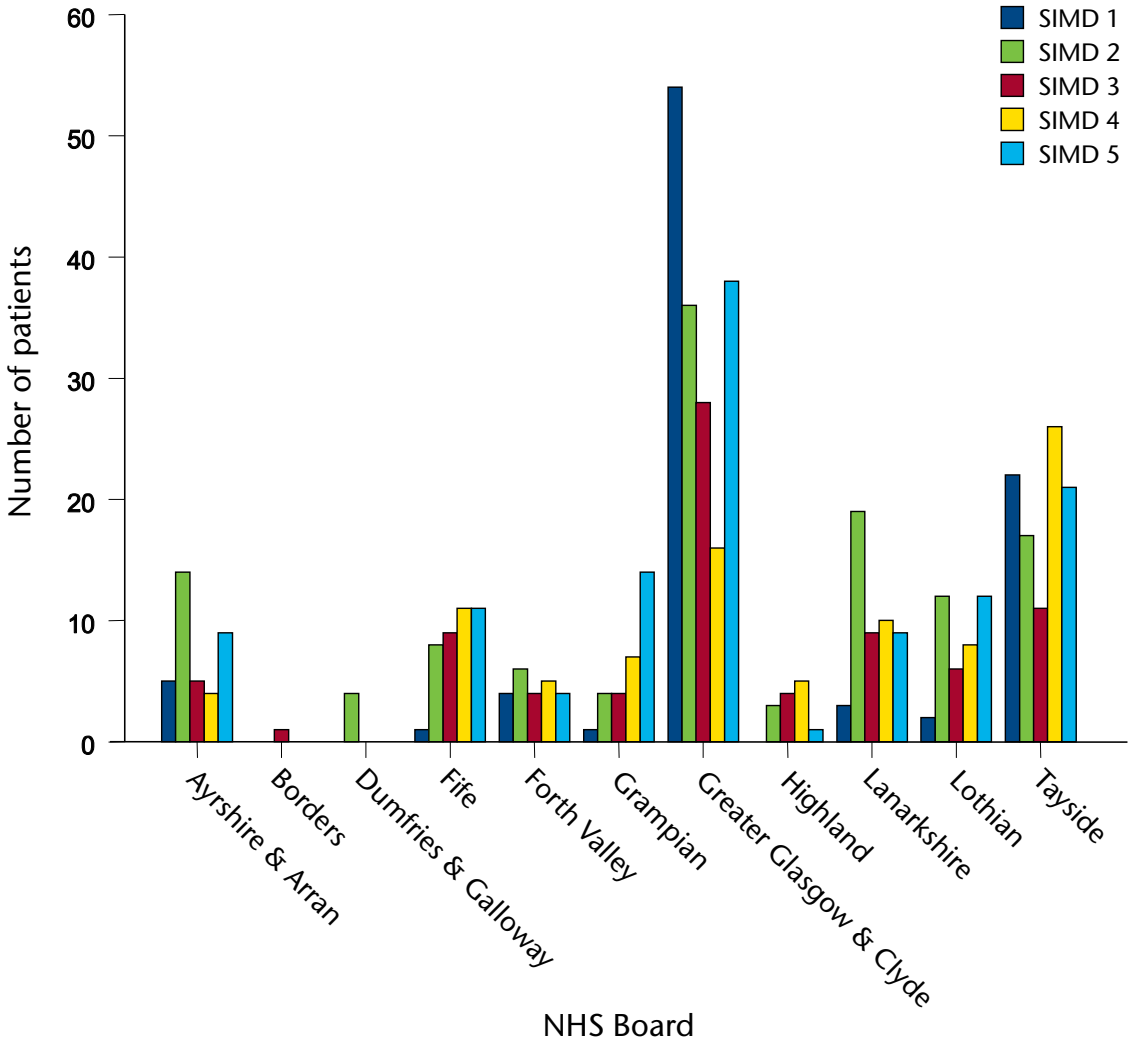
Appendix 1 (continued)

Table 11 Patient activity during data collection by SIMD quintile

Quintile	Frequency	Percent
1 (Most deprived)	92	14.9
2	123	20.0
3	81	13.1
4	92	14.9
5 (Least deprived)	119	19.3
Total	**507**	**82.3**
Invalid Postcodes	109	17.7
Total	**616**	**100.0**

Figure 10 shows that patients who were treated in the dental hospitals come from all five quintiles, however Greater Glasgow and Clyde has the majority of patients from the most deprived areas.

Figure 10 Patient activity during data collection by NHS board and SIMD quintile



Appendix 1 (continued)

2 Age

Children and Young People

Most children and young people are susceptible to dental disease due to diet, nutrition and poor oral hygiene practices. Those from deprived areas were found to have higher levels of caries than those in other areas (Levin *et al*., 2009). However, it is the combination of age, ethnicity, and socio-economic group which can lead to oral health inequalities (Conway *et al*., 2007).

An Action Plan for Improving Oral Health and Modernising NHS Dental Services in Scotland (Scottish Executive, 2005) included objectives to improve the oral health of children in Scotland and to reduce inequalities in dental health and access to services. The *Childsmile* programme has four distinct parts: Core, Practice, Nursery, and School. The Nursery and School elements target children from the most deprived areas while the Core and Practice components are universal.

The oral health of children in Scotland has improved considerably in the last 10 years. Currently, 64% of P1 children have no obvious decay experience in their deciduous teeth in comparison with 57.7% in 2008. Children from the most deprived areas continue to have the majority of dental disease and this remains a key challenge (National Dental Inspection Programme of Scotland, 2010).

Older people

It has been acknowledged that older people are susceptible to dental disease due to both their inability to maintain proper oral hygiene and lack of accessibility to a dentist. A recent report on domiciliary dental care highlighted that there was no clear guidance, policies or standards for oral care provided in hospitals and care homes. The report also suggested that demand for domiciliary dental care is rising due to the growing population of older people, an increasing number of whom are dentate with many complex restorative needs (Scottish Dental Needs Assessment Programme, 2010).

Appendix 1 (continued)

3 Accessibility

Patients from remote and rural areas may have difficulty in accessing dental hospital services. In particular, patients from NHS Highland, NHS Borders and NHS Dumfries & Galloway can travel further for restorative dental services than other services (Newton *et al*., 2005). It has been suggested that access to secondary restorative dental care is poor in rural areas, indeed, distances as low as 20 miles can be prohibitive (Nixon and Benson, 2005).

The SDNAP 5-week prospective data collection was used to present the current trend of accessibility among the patients attending the dental hospitals. The location of patients attending the dental hospitals was determined by postcode.

The Scottish Government initiatives to reduce inequalities are:

- Commitment to the provision of NHS dental services and also the particular difficulties faced by dentists working in rural and remote areas of Scotland, where the viability of practices may be threatened by low population density.
- A remote area's allowance.
- Enhanced continuing professional development funding for practitioners in remote areas (Scottish Executive, 2005).

4 Disability

Disability is defined as a physical or mental impairment which has a substantial and long-term adverse effect on the ability to perform normal day-to-day activities (Equality Act, 2010). In 2010, 43% of adults had a long-standing physical or mental condition or disability (McManus, 2011).

Limited access to dental practices can be problematic and location of dental centres is important in reducing inequalities in this group. The Disability Discrimination Act 1995 stipulates that dentists should make reasonable adjustments to their premises and procedures to accommodate people with mobility issues.

Appendix 2: Prospective Data Collection Form

Referral Letter Information

Patient details

CHI: ⌊_____⌋ Date of Clinic: ⌊_____⌋ Date on referral letter: ⌊_____⌋

Patient Post Code: ⌊_____⌋⌊_____⌋ Is this a waiting list initiative new patient clinic? ☐ Yes ☐ No

Referred by: ☐ GDP ☐ GMP ☐ Consultant Specialty (*specify*) ⌊_____⌋
☐ Other (*specify*) ⌊_____⌋

Does this patient have a history of: ☐ Head and Neck Cancer ☐ Cleft Lip/Palate
☐ Hypodontia ☐ Trauma

Reason for Referral (Please tick one box):
☐ Advice Only ☐ Treatment Only ☐ Advice and Treatment
☐ Second Opinion ☐ Other (*specify*) ⌊_____⌋

Was a treatment area clearly specified by the referrer? ☐ Yes ☐ No

If yes, please enter the priority of the treatment specified by the referring practitioner
Use 1,2,3... (1 being the highest priority)
☐ Crown and Bridge ☐ Periodontics ☐ TMD
☐ Endodontics ☐ Removable Prosthodontics ☐ Other (*specify*) ⌊_____⌋
☐ Implant ☐ Tooth Wear

First appointment Outcome

Priority of treatment advised by Consultant
Use 1,2,3... (1 being the highest priority)
☐ Crown and Bridge
☐ Endodontics
☐ Implant
☐ Periodontics
☐ Removable Prosthodontics
☐ Tooth Wear
☐ TMD
☐ Other (*specify*) ⌊_____⌋

Consultation Outcome (*Please tick one box*)
☐ Advice, no Treatment
☐ Advice, no Treatment and Review
☐ Treatment by HDS
☐ Treatment by HDS and GDP
☐ Treatment by GDP
☐ Treatment by Other Specialty
☐ Treatment by Undergraduate Student
☐ Other (*specify*) ⌊_____⌋

Treatment in hospital to be delivered by (Please tick all that apply)
☐ Consultant/Specialty Registrar ☐ Dental Care Professional
☐ Specialist Dentist/Staff Grade/Salaried GDP ☐ Postgraduate Student
☐ Senior House Officer/Dental Foundation Trainee ☐ Other (*specify*) ⌊_____⌋

Appendix 3:
Topic Guide for Semi-Structured Interview: Consultants

1 What are the most common treatment conditions that you are likely to treat?

2 Do you undertake vetting of the referrals? If so what is the process and who is involved? Time taken to carry out vetting...

3 Approximately how many referrals do you receive each month? Of these, how many are for treatment planning?

4 Approximately how many inappropriate referrals do you receive each month?

5 How do you rate your treatment assessment against that of primary care GDP?

6 Do you see demand for specialist restorative dentistry? If there is a demand, which treatments are more in demand in restorative dentistry? Why?

7 What is the level of complexity of these treatments?

8 In the last month how many patients have you treated? How many of them would you classify as specialist restorative treatment?

9 How many 65+ patients do you treat and what kind of complications do they usually have?

10 Is the number of treatments for this age group increasing?

11 What are your views about the present workforce available for restorative dentistry?

12 Is your workload increasing? If so, why?

13 How do you think we can improve the restorative dentistry service?

Appendix 4: GDP Telephone Interview Topic Guide

1 What are the most common treatment conditions that you are likely to refer to the secondary care?

2 Do you refer patients to secondary care only when the treatment cannot be undertaken in the primary settings? Yes, No.

3 If Yes, what are the reasons?

4 If No, what are the reasons?

5 Are you aware of the referral guidelines and expertise of restorative department?

6 Do you see demand for specialist restorative dentistry?

7 If Yes, what kind of treatments are more in demand in restorative dentistry? Why?

8 Where are these treatments done?

9 What is the level of complexity of these treatments?

10 In the last year how many patients did you refer to secondary care? How many of them would you classify into specialist restorative treatment?

11 How often do you say to a patient with a restorative condition that nothing can be done? Why?

12 What treatments are not undertaken in secondary care? Why?

13 How many 65+ patients do you have and what kind of complications do they have?

14 What are your views about service offered by dental hospital?

15 What are your views about workforce available for restorative dentistry?

16 How do you think the service can be improved?

Appendix 5: Patient Perceptions Focus Group Topic Guide

Are patient/public aware of restorative services available?

1 What do you know about dental services? Primary and Secondary care.

2 Have you been referred to hospital for treatment? What kind of treatment?

3 What do you mean by restorative treatment?

4 Denture, gum problems etc.

What is patient/public perception of restorative services?

1 Improving Quality – quality

a) How is the quality of the service? Do you think it is good, bad or neither good or bad?

b) What problems did you face?

2 Patient-Centred care – patient involved in the treatment planning

a) Did the consultant consider your opinions while planning your treatment? (Distance from your home, preference of hospital, types of treatment).

3 Patient Safety – safety

a) Did you ever feel like you were unsafe whilst treatment was undertaken?

4 Effectiveness – improvement/success

a) Was your treatment successful? (was there improvement?)

5 Efficiency – competence

a) Did you feel that the staff delivering the treatment were not capable of carrying out the treatment? (not competent enough)

6 Equity – equal access

a) Did you feel discriminated due to race, distance from home, disability?

7 Timeliness – prompt

a) Did you receive treatment promptly as required, were there delays?

Abbreviations

ADH	Aberdeen Dental Hospital
CDS	Community Dental Services
CS	Clinical Sessions
DCP	Dental Care Professional
DDH	Dundee Dental Hospital
DwSI	Dentist with Special interest
EDI	Edinburgh Dental Institute
ENT	Ear, Nose and Throat
EQIA	Equality and Diversity Impact Assessment
GDH	Glasgow Dental Hospital
GDP	General Dental Practitioner
GDS	General Dental Services
GMP	General Medical Practitioner
HDS	Hospital Dental Staff
HNA	Health Needs Assessment
ISD	Information Services Division
MCN	Managed Clinical Network
MDT	Multi-Disciplinary Team
NDIP	National Dental Inspection Programme
NHS	National Health Service
NRS	National Records of Scotland
PCSDS	Primary Care Salaried Dental Services
RTT	Referral to Treatment
SDNAP	Scottish Dental Needs Assessment Programme
SDS	Salaried Dental Services
SGDP	Salaried General Dental Practitioner
SHO	Senior House Officer
SIMD	Scottish Index of Multiple Deprivation
SMR	Scottish Morbidity Record
SPA	Supporting Professional Activities
StR	Specialty Registrar
WTE	Whole Time Equivalent

Glossary of Terms

Bridge	Prosthesis used to replace missing teeth by utilising one or more adjacent teeth which cannot be removed by the patient
Caries	Disease process that destroys the structure of the tooth
Crown	Dental restoration that encompasses the existing tooth structure
Dental implant	A metal infrastructure which is surgically inserted into the jaw bone upon which a prosthesis is placed
Dentate	An individual with natural teeth
Denture	A dental prosthesis that a patient can remove and re-insert themselves, used to replace teeth and supporting hard and soft tissues for functional or aesthetic reasons
Epidemiology	The branch of medicine which deals with the incidence, distribution, and possible control of diseases and other factors relating to health
Endodontics	Branch of restorative dentistry concerned with diseases and injuries affecting the dental pulp, tooth root and the tissues surrounding the root tip
Hypodontia	Congenitally missing teeth
Oral surgery	Surgical management of the teeth and supporting hard and soft tissues
Periapical	Descriptive term to portray the area around the tip of the tooth root
Periodontics	Branch of dentistry concerned with the hard and soft tissues supporting and surrounding teeth
Prosthodontics	Branch of dentistry concerned with the prosthetic replacement of hard and soft tissues
Pulp	Centre of a tooth, made up of living soft tissue cells, nerves and blood vessels
Root treatment	Procedures involving the removal of the dental pulp, usually as a result of disease or inflammation, and subsequent cleaning and filling of the resulting space (the root canal)
Tooth wear	Loss of tooth tissues by mechanical or chemical processes other than dental decay