North of Scotland Planning Group is a collaboration between NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Tayside and NHS Western Isles

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North of Scotland Planning Group

Restorative Dentistry in the North of Scotland

September 2012

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North of Scotland Planning Group is a collaboration between NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Tayside and NHS Western Isles
Contents

Executive Summary .................................................................................................................... 2

1. Introduction/Background ........................................................................................................ 3
   1.1. What is Oral Health? ..................................................................................................... 3
   1.2. Restorative Dentistry ................................................................................................. 3
   1.3. Growth in Dental Referrals ...................................................................................... 4
       1.3.1. Increase in dental registrations .......................................................................... 4
       1.3.2. Ageing population ............................................................................................. 5
   1.4. Changes in clinical practice ....................................................................................... 7
       1.4.1. Demand for more complex (and expensive) treatments such as dental implants to
              restore the ageing dentition instead of plastic dentures ........................................ 7
       1.4.2. Changes in the disease patterns in oral health in children related to treatments such
              as general anaesthesia. ......................................................................................... 7
   1.5. Reduction in waiting time guarantees ............................................................................ 8

2. Strategic Objectives for restorative dentistry ..................................................................... 8

3. Description of current service ............................................................................................ 8
   3.1. NHS Grampian ............................................................................................................ 9
       3.1.1. Service Overview .............................................................................................. 9
       3.1.2. Demand .............................................................................................................. 9
       3.1.3. Workforce Profile ............................................................................................. 10
   3.2. NHS Highland ............................................................................................................. 10
   3.3. NHS Orkney ............................................................................................................... 11
   3.4. NHS Shetland ............................................................................................................. 12
   3.5. NHS Western Isles ...................................................................................................... 12

4. Risk Assessment .................................................................................................................. 12

5. Options ................................................................................................................................ 13
   5.1. List of options .............................................................................................................. 13
   5.2. Preferred option ......................................................................................................... 13

6. Proposed model: North of Scotland Managed Service Network for
   Restorative Dentistry ............................................................................................................ 14

7. Finance .................................................................................................................................. 18

8. Clinical Benefits .................................................................................................................... 19

9. Outcomes ............................................................................................................................... 19

10. Links to the NHS Scotland Quality Strategy ...................................................................... 19
11. Regional Planning in the North of Scotland ............................................................. 20
12. Affordability .......................................................................................................... 20
13. NHS Boards Approval .......................................................................................... 20

Appendix 1: Estimated demand and consultant service needs based on Glasgow/West of Scotland demand levels .......................................................... 21
Appendix 2: Definition of Restorative Dentistry Service ............................................ 22
Appendix 3: Costs by Board of Treatment ................................................................... 23
Appendix 4: Discussion of options ............................................................................ 24
Executive Summary

This Business Case seeks to expand the capacity of consultant led Restorative Dentistry services in the North of Scotland (NoS), through appointment of two additional Consultant posts, and to develop, through education and training, a network of primary care teams across the NoS to support the network and provision of specialist services in primary care, thus reflecting the geography and the need of the North of Scotland.

There are currently 2.2 wte1 Consultants in Restorative Dentistry within the North of Scotland, based in Aberdeen and providing a service to the population of Grampian, and a visiting service to Highland, Orkney and Shetland (approximately 811,478 people2). The current service does not meet demand and is unable to deliver the 18 week referral to treatment target, given that the average wait is 16-18 weeks for initial appointment and in the region of two years for treatment.

The clinical risks of not developing the network as proposed include:

- Inability to meet waiting time targets;
- Inequity of access to specialist treatment for all patients;
- Inappropriate referrals to secondary care services and to GDPs with lack of appropriate training; and
- Risk of loss of Head & Neck cancer status in NHS Highland

The network model will see the development of an integrated service, between primary and secondary care services, and will have agreed acceptance and discharge criteria for each tier. This is in accordance with the recommendations of the SDNAP Report3.

There are significant clinical gains that would result from the development of the network approach, including:

- providing services as locally as possible and providing support for local dental services for communities across the North of Scotland;
- provide equitable access to care and treatment;
- provide safe and effective services, which will improve quality;
- providing sustainable services across the region;
- supporting teaching within Aberdeen University, University of the Highlands and Islands and at the dental Outreach centres in Western Isles, Inverness, Elgin and Aberdeen; and
- supporting other consultant led services such as the oral cancer and cleft palate networks.

Recommendations

- NoS Project Board support in principle these proposals; and
- Refer the paper to each Health Board for consideration and potential funding.

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1 2.4 wte with effect from September 2012
2 GROS 2010 based population projections. NHS Highland population quoted excludes Argyll & Bute.
3 Scottish Dental Needs Assessment Programme (SDNAP), (July 2012), Restorative Dentistry Needs Assessment Report
1. Introduction/Background

1.1. What is Oral Health?

Oral health is achieved when the mouth is free of chronic disease and sepsis, facial pain, oral and throat cancer, acute oral mucosal lesions/conditions, birth defects (e.g. Clefts), periodontal disease, tooth decay and tooth loss and the effects of other diseases affecting the mouth and oral cavity (e.g. diabetes).

Oral health is integral and essential to general health and is a determinant factor in quality of life. Poor oral health affects people physically and psychologically. It influences how they grow and develop; influences how they enjoy life, look, speak, taste and chew food, socialise and also impacts on self esteem and well being. It is known that decayed and extracted teeth not only affect quality of life but also contribute to depression of mood.

Globally, oral diseases are amongst the most expensive to treat and prevention plays an important role in securing oral health. The publication of the Action Plan for Improving Oral Health & Modernising NHS Dental Services⁴, has resulted in capacity building in both oral health improvement programmes and access to primary care dental services through the expansion of the dental workforce and premises.

Presently Scotland has the highest percentage of the population ever registered with the NHS. As primary care dental services expand to cover the whole population, there will be increased demand for specialist restorative services, especially in the older age groups, where the largest improvements are being seen.

1.2. Restorative Dentistry

Restorative dentistry is the study, examination and treatment of diseases of the oral cavity, the teeth and their supporting structures. Restorative Dentistry covers the General Dental Council recognised specialities of periodontology, endodontics and prosthetics (see Appendix 2) with patients requiring care across a combination of, or commonly all three specialities.

The specialty provides a comprehensive diagnostic and treatment planning service for a wide range of congenital and acquired diseases/disorders affecting the mouth, face and jaws. Consultant Restorative Dental Services are distributed mainly in Scotland in Glasgow, Edinburgh, Dundee and Aberdeen.

Typically treatment plans frequently extend over several visits with early planned intervention and preventive regimes increase the efficiency of care delivery, improves the patient journey and reduces costs.

The Consultant in Restorative Dentistry provides:

- Advice and treatment planning for General Dental Practitioners and the Salaried Dental Service; and
- Treatment of multi and inter-disciplinary cases in conjunction with other specialties, with a major role in the delivery of multi-disciplinary care. In particular, restoration of the oral and dental functions in cases of Oral cancer and Cleft Palate.

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⁴ Scottish Executive (2005) "An action plan for improving oral health and modernising NHS dental services in Scotland"
The following list is not exhaustive but reflects the broad scope of restorative dentistry:

- Management of pain and anxiety
- Temporomandibular dysfunction
- Prosthetic rehabilitation of cancer/trauma
- Implantology
- Endodontics including periradicular surgery
- Management of diseases affecting the periodontal tissues
- Management of dental caries
- Tooth wear including attrition, abrasion and erosion
- Aesthetic/Cosmetic Dentistry
- Replacement of missing teeth other than by implants
- Care of medically compromised patients
- Care of patients with special needs

Patients with congenital facial defects or major dental abnormality require carefully planned treatment as an integral part of a combined orthodontic/oral surgical and restorative therapy. Similarly patients with acquired defects either through trauma or as a result of treatment for head and neck tumours require restorative management and intervention. Guidelines for Head and Neck Cancer produced in 2007 recommend that the Restorative Dentist should be a member of a multidisciplinary group involved in the care of patients treated with radiotherapy and chemotherapy.

### 1.3. Growth in Dental Referrals

#### 1.3.1. Increase in dental registrations

The levels of dental registration in the population are rising for all ages, although rates still vary across age groups.

The main gatekeeper for restorative referrals is the primary care dentist. The North of Scotland has experienced significant challenges in providing access to primary care dentistry for the resident populations, with the result that many outpatients have been without care for considerable periods of time. It is anticipated that with the increase in the number of dentists and improved landscape in terms of access as measured by NHS dental registrations, referrals to restorative services will increase due to the burden of complex treatment need, the result of failure to provide access to enable early intervention, and appropriate monitoring of heavily restored dentitions in a population who now retain teeth into older age.

Those who are not registered with a dentist are perhaps more likely to present to secondary care regardless of the severity of their condition.

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5 British Dental Association, (November 2005) “Consultant Practice in the Dental Specialties”

6 Scottish Intercollegiate Guidelines Network (October 2006) “Diagnosis and Management of Head and Neck Cancer: A national clinical guideline, (10) 1 905813 007”

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1.3.2. Ageing population

The current population of the North of Scotland is reported as 1,329,509. For the purpose of this business case, Tayside and Argyll & Bute have been excluded, therefore the population is reported as 837,668.

The population projections available identifies that the population is projected to increase by 18% (148,948 persons) over the next twenty five years, however, the increasing population will consist of older people, with a 76% increase in the number of people aged 65 or over by 2035. Those in the over 65 age group are projected to account for 26% of the total population by 2035 and those aged 15 and under will account for 17%. 

![Chart 1: Population percentage change 2010-2035](chart.png)
The ageing population will result in more complex treatment needs and will require more specialist dentists. This is because older people are retaining their own teeth for longer, which means that the complexity of treatment increases. There will need to be an appropriately trained workforce to manage this.

Historically, the pattern of care relied considerably on a large number of extractions of teeth as opposed to restoration of the dentition.

The normal prosthetic replacement has been predominantly plastic dentures (part or full) and over the period 1972-2010 the percentage of people using plastic dentures has declined from 64% to 32.85%, as over the last 20 years the emphasis has moved to restoration of the dentition, with significant increases in endodontics, dental bridges, crowns, veneers and implants with associated restoration.

Between 1972 and 2010, the percentage of the population who have their own teeth and require complex care has increased in each age group:

<table>
<thead>
<tr>
<th>Age group</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 – 65</td>
<td>66.2</td>
</tr>
<tr>
<td>65 – 74</td>
<td>63.4</td>
</tr>
<tr>
<td>75+</td>
<td>48.4</td>
</tr>
</tbody>
</table>

Table 2: Percentage increase in population with own teeth

In order to gauge the magnitude of this trend, which will continue over the next 20 years, the number of teeth requiring care (potential restoration), treatment for gum disease and other oral problems will also increase considerably. The number of teeth is illustrated by using the change in the number of people with 20 or more teeth. Chart 2 below illustrates that between 1993 and 2010, there was a 31.4% increase in the number of 55-64 year olds with 20 or more teeth.

As older people keep their teeth, there is ample evidence from America and Scandinavia of increased demand for advanced restorative procedures such as bridges and implants, substituting the replacement of lost teeth with plastic dentures. Scotland and the UK have not moved as quickly on these issues as other countries, with levels of bridges and implants remaining low in the UK. Also evidence for the adult dental health survey – England.
1.4. Changes in clinical practice

1.4.1. Demand for more complex (and expensive) treatments such as dental implants to restore the ageing dentition instead of plastic dentures.

The adult dental health survey in Grampian in 2010 recorded that 4.9% of the adult population in Grampian had implants. There are few surveys that give equivalent statistics across Europe, however, a comparison of implants across several countries based on sales/usage shows the UK (Scotland) to be at the bottom of the league table on usage of dental implants, with places such as Switzerland using 10 times as many per head of population. This is despite the fact that Scotland has some of the worst oral health in Europe. The majority of these implants in Europe are delivered within primary care services, whilst in Scotland, the largest numbers in the NHS are in secondary care, complemented by a flourishing private sector service.

1.4.2. Changes in the disease patterns in oral health in children related to treatments such as general anaesthesia.

The previously high levels of dental disease in Scotland have reduced dramatically over the last 20 years to levels of oral health in children which previously were only thought achievable through water fluoridation. These changes, plus those associated with different pathways of care such as sedation (relative analgesia) or stainless steel crowns, both delivered in primary care, have resulted in major reductions of expensive day care general anaesthesia.

Chart 3 below shows that NHS Grampian has seen a fifty per cent reduction in dental general anaesthetic day cases, resulting in significant savings, with an estimated reduction in NHS costs of acute care of £1m per annum in Grampian alone. There have been similar reductions in paediatric dental general anaesthetic day case activity in other Boards delivering similar reductions in costs on this type of activity.

![Chart 3: General Anaesthesia in children (Grampian, 2005-10)](image)

These significant changes will have a continuing effect on the levels of dental care as demand for better dental services continues well on into the next decade.

The changes in other dental/oral diseases, such as oral cancer, are less predictable until the effect of a reduction in smoking and drinking levels impact on the older populations.
1.5. Reduction in waiting time guarantees

The Scottish Government set out the vision for a stronger NHS which would make better use of our capacity to deliver a better deal for patients. A major element in achieving this vision was the national waiting time guarantee:

"A whole journey waiting time target of 18 weeks from all source referral to treatment...by December 2011"
Cabinet Secretary for Health and Wellbeing

The Dental Specialties Task and Finish Group reinforced this commitment and underlined that all dental specialties are included in this guarantee. 18 Weeks will therefore be the maximum wait from receipt of referral into secondary care, to the start of the first definitive treatment, for all non-emergency conditions.

Sustainability of the Restorative Dentistry service across the North of Scotland has long been an issue. The current service is struggling to meet demand and North Boards are experiencing considerable pressure in complying with Scottish Government’s 18 week referral to treatment standards. This will be exacerbated by the 12 weeks Treatment Time Guarantee9 for inpatient and day case procedures. It should be noted however, that dentistry is almost unique in that the vast majority of treatments and procedures carried out in hospital are undertaken as outpatient appointments rather than as inpatient or day case operations.

2. Strategic Objectives for restorative dentistry

The NoS is committed as follows;

“To design and deliver equitable access to specialist restorative dental services across Scotland, organised as a network, which supports local care timeously for all patients across the North of Scotland.”10

Specifically, this will:

- provide services as locally as possible and support local dental services for communities;
- provide safe and effective services, which improve quality;
- provide sustainable services in a challenging rural environment;
- provide equitable access to care and treatment in a remote and rural region; and
- ensure that services reflect effective planning and use of resources.

3. Description of current service

NHS Consultant led Restorative Dental care is available for primary care referrals. In addition, consultant support is provided for tertiary referrals, Oral and Maxillofacial Surgery multi-disciplinary teams and other dental specialties, for example, Orthodontics.

The nature of restorative dental care means that the treatment burden is high, both in terms of the number of required treatment sessions and also the length of the treatment sessions. On average, a patient will require fourteen (14) appointments, and for implants, this will rise to twenty seven (27).

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9 Patient Rights (Scotland) Act 2011; www.scotland.gov.uk/Topics/Health/PatientRightsBill
10 NoS Restorative Dentistry workshop 2010

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Page 8 of 27
Not all return appointments will be delivered by the Consultant, and some treatment sessions will be delivered by lower grade staff or Dental Therapists/Hygienists, where appropriate.

3.1. NHS Grampian

3.1.1. Service Overview

The work of the Department consists of new patient diagnostic clinics, multidisciplinary clinics with colleagues in Orthodontics and Oral & Maxillofacial Surgery and specialist treatment. Treatment includes:

- Fixed & Removable Prosthodontics;
- Prosthetic rehabilitation of cancer/trauma;
- Implant dentistry (placement and restoration);
- Endodontics, including peri-radicular surgery;
- Periodontics, including periodontal surgery;
- Management of tooth wear cases; and
- Treatment of congenital conditions including hypodontia.

Patients accepted for treatment in the Department are prioritised in terms of need.

**Consultant clinics** are held for the assessment and treatment planning of new patients. The maximum waiting time for assessment is 12 weeks from referral.

**Multidisciplinary clinics** are held weekly with colleagues in Orthodontics and Oral & Maxillofacial Surgery to enable planning of cases requiring combined care, for example hypodontia, cleft lip and palate, and facial deformity.

**A monthly implant clinic** runs with Oral & Maxillofacial Surgery. Patients are referred initially for a new patient consultation to assess suitability/eligibility for implant treatment. Each case is assessed on an individual basis but the Department follows the NHS Guidance on Implant Placement within the NHS, which can be broadly divided into rehabilitation of the following groups:

- trauma;
- cancer;
- hypodontia;
- severe denture intolerance; and
- those patients who simply can not be reasonably treated by an alternative approach.

Restorative Dentistry also forms part of the hospital’s multidisciplinary team for the treatment and rehabilitation of patients with **head and neck cancer**.

The Restorative Dentistry department is actively involved in **teaching and training** of undergraduates and postgraduate trainees.

3.1.2. Demand

Demand in the north is already increasing with:
New outpatients
The number of patients waiting for their first outpatient appointment is 326. The maximum wait for new outpatient assessment of 12 weeks is not being met and the average wait is currently 16—18 weeks.

Treatment waiting list
There are 240 patients waiting for treatment and the wait can be up to two years if non urgent.

3.1.3. Workforce Profile

<table>
<thead>
<tr>
<th>Headcount</th>
<th>Clinical wte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant</td>
<td>2.00</td>
</tr>
<tr>
<td>Consultant (Honorary)</td>
<td>0.20</td>
</tr>
<tr>
<td>Staff Grade</td>
<td>1.00</td>
</tr>
<tr>
<td>STR</td>
<td>1.80</td>
</tr>
<tr>
<td>SHO</td>
<td>2.00</td>
</tr>
<tr>
<td>DF2</td>
<td>0.30</td>
</tr>
<tr>
<td>Hygienist</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Aberdeen Dental School contributes to clinical services through the Honorary Consultant(s). The complement will rise to 2.4 wte from September 2012.

3.2. NHS Highland

NHS Highland has a historical, loosely defined, longstanding Service Level Agreement with NHS Grampian to deliver two sessions per month in Restorative Dentistry. Regrettably, however, Grampian Consultants have been unable to commit to these sessions due to, for example, the increase in demand in Grampian, annual leave, and conflicting local holidays. The Service Level Agreement includes a sum of £5,486 although payment is made for the visits actually received and evidence would suggest that around 25% of visits are cancelled in any one year. New patients only are seen and no treatment is undertaken. The service is supplemented by waiting list initiative clinics by visiting Locum Consultants from Scotland and London. Like the service from Grampian Consultants, only new patients are seen and no treatment is undertaken. Locum costs are in the region of £8-10k per annum.

Treatment planning and advice is provided to General Dental Practitioners, many of whom have intimated that they do not have the skills to carry out the sometimes complex treatment required for their patients. In addition, a review of some of the patient pathways indicates multiple referrals including out of area, duplication of resource and a failure to provide the patient with definitive treatment within a reasonable timeframe. This is not a quality service.
Demand

Data on current activity levels does not reflect the need for this service as soft information and feedback from primary care practitioners suggests that patients are not being referred into the service because of the current capacity issues.

<table>
<thead>
<tr>
<th>MONTH</th>
<th>CON</th>
<th>DEN</th>
<th>DS</th>
<th>GP</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-11</td>
<td>4</td>
<td></td>
<td>9</td>
<td></td>
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<td>11</td>
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<tr>
<td>Jun-11</td>
<td>1</td>
<td>1</td>
<td>17</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Jul-11</td>
<td>2</td>
<td></td>
<td>15</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Aug-11</td>
<td>1</td>
<td></td>
<td>18</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Sep-11</td>
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<td>Mar-12</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17</td>
<td>2</td>
<td>136</td>
<td>3</td>
<td>158</td>
</tr>
</tbody>
</table>

Table 5: New referrals

With an increasing elderly population retaining their teeth for longer, there is a greater need for a consultant-led service to support primary care dental providers in the planning and provision of more complex cases. The case mix is changing in terms of secondary/tertiary referrals and the recent experience in NHS Grampian is evidence of the suppressed demand for this service and would be a useful modelling exercise in which to predict future demand.

The SDNAP Report\(^{11}\) confirmed 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”.

The recent appointment of a second Consultant OMFS surgeon is placing significant demand on this resource as the majority of the NHS Grampian team’s time is taken up with tertiary referrals.

Treatment

Although it is noted above that no treatment is provided in Inverness, a total of 77 patients attended Aberdeen for treatment in 2011/12. This had doubled from the previous year. The average number of attendances per patient range from 14 to 20.

There are also a number of out of area referrals for treatment.

3.3. NHS Orkney

A visiting service is provided by NHS Grampian, comprising two visits per year, each of two days duration. An average of fifteen patients are seen, although the service does not meet the needs of the patients. A contribution of £1,245 is included in the SLA with NHS Grampian.

\(^{11}\) Scottish Dental Needs Assessment Programme (SDNAP), (July 2012), Restorative Dentistry Needs Assessment Report
The dental registration rate is currently 64.5% in Orkney and there are over 2,000 patients on the waiting list for registration, with 1,000 of these waiting for two years or longer. Plans are in place to increase capacity by September 2012 and it is expected that this will in turn increase the requirement for specialist dentistry.

3.4. NHS Shetland

No service is available locally, however patients are referred to Aberdeen as and when opinion is required.

3.5. NHS Western Isles

No service is available locally, and patients are referred mainly to Glasgow, although some are referred to Dundee.

4. Risk Assessment

The clinical risks of current service arrangements are summarised in table 6 below.

<table>
<thead>
<tr>
<th>Risk area</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inability to meet treatment targets</td>
<td>• NHS Boards currently do not meet the 18 week referral to treatment standards.</td>
</tr>
</tbody>
</table>
| Equity of access to specialist treatment for all patients | • There is inequity within the existing service delivery model. Patients are being disadvantaged, particularly within NHS Highland, in not having access to specialist care compared with other parts of Scotland.  
  • Patients are not being referred early enough in their journey to enable more simplified and therefore less costly, treatments to be provided. Feedback from primary care dental colleagues is that there is little point in referring due to the limited access to Consultant advice and treatment.  
  • Late presentation results in more complex treatment requirements, additional resource implications and treatment plans often requiring months to complete.  
  • Patients needing specialist care may receive inappropriate treatment such as the extraction of strategically important teeth or the execution of inappropriate treatment plans that would have benefited from Consultant input, resulting in consequent problems for the patient and subsequent corrective costs.  
  • Patients are losing teeth that could otherwise be restored as the primary care practitioners have reported they do not have the advanced planning and operative skills. |
| Inappropriate referrals to other secondary care services | In the absence of a satisfactory restorative service, patients are sometimes referred to other secondary care clinicians (i.e. Orthodontists and Maxillofacial and Oral Surgeons) who do not have the appropriate training or expertise to address the problem as they have followed a completely different training pathway. |
| Inappropriate referrals to GDPs with lack of appropriate training | Clinical teams are doing their best and getting by but patients are being referred to salaried dental teams who have not had the appropriate level of training. |
| Impact on resources | Inappropriate referrals impact on the resources available in the other specialties for appropriate cases. |
| Risk of loss of Head & Neck Cancer status in NHS Highland | Restorative Dentistry is an essential component of all head and neck MDTs to enable restoration of function and minimise disability after surgery and/or radiotherapy. The absence of a Restorative Dentistry service could place the |
Impact on Head and Neck Cancer

recognition of Raigmore as a Head & Neck Cancer Unit at risk.

SIGN 90\textsuperscript{12} indicates that patients should have access to a consultant restorative dentist.

Head and Neck cancer patients within NHS Highland are not being seen timeously by the Consultant in Restorative Dentistry from NHS Grampian with the following implications:

• Detriment to oral rehabilitation and reduced quality of life due to the lack of restorative input at the pre surgical planning stage.
• Avoidable complications develop such as osteo-radionecrosis which create additional burden on OMFS capacity both for inpatient and outpatient services.
• Poor functional outcome in terms of mastication, swallowing and speech.
• Poor nutrition as a result of eating difficulties.
• Psychosocial effects due to poor aesthetics.
• Slower rehabilitation and reintegration back into society and the workplace.

Lack of awareness of modern techniques

Lack of awareness of modern restorative techniques and their contribution to rehabilitation impacts on quality of life, dental anxiety status and the patients’ ability to achieve oral health and be discharged into continuing care within the primary dental care sector.

Impact on patients

Restorative dentistry is a fundamental part of the multi disciplinary approach to rehabilitating patients following trauma, those with hypodontia, clefts and other cranio facial deformities and those who have lost teeth following surgery for large cysts.

<table>
<thead>
<tr>
<th>Table 6: Risk factors</th>
</tr>
</thead>
</table>

5. Options

5.1. List of options

<table>
<thead>
<tr>
<th>Option 1</th>
<th>Do nothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 2</td>
<td>Refer NHS Highland patients to a non-Scottish provider</td>
</tr>
<tr>
<td>Option 3</td>
<td>Develop a shared post between NHS Grampian and NHS Highland</td>
</tr>
<tr>
<td>Option 4</td>
<td>Develop additional Consultant capacity in both Aberdeen and Inverness, in the context of a regional network</td>
</tr>
<tr>
<td>Option 5</td>
<td>Disinvest in Restorative Dentistry within NHS Highland</td>
</tr>
</tbody>
</table>

Table 7: Options

A summary of the discussion of the options is included at Appendix 4.

5.2. Preferred option

The preferred option is therefore Option 4, which will deliver services in line with need, future demand and Scottish Government standards, and will minimise almost all the clinical risks previously identified. Options 1 and 2 will not significantly impact on the identified risks.

\textsuperscript{12} \text{http://www.sign.ac.uk/guidelines/fulltext/90/index.html}
Indications are that all Scottish providers are under pressure in terms of restorative dentistry and would not have the capacity to provide additional support to the North. Option 4 therefore presents the most sustainable solution for patients in the North, with the establishment of two new Consultant posts, jointly funded with part-time academic remits.

6. Proposed model: North of Scotland Managed Service Network for Restorative Dentistry

To address the challenges and risks faced by the service, it is necessary to consider an alternative service delivery model, which will include:

- treatment by the right person, at the right time, and in the right place;
- regional clinical network; and
- up-skilling of local practitioners.

This approach will ensure the most effective and efficient use of resource and workforce. Throughout the patient pathway, the patient is seen by the health professional with the most appropriate skill set, is seen at the optimum treatment time to prevent deterioration in their condition, and ensures the most effective treatment outcome. These principles are at the heart of the regional clinical network model, and this approach will enhance skills at all levels.

A network approach would encompass the following principles:

- Optimisation of scarce resources;
- Clarity of roles within the multi-disciplinary team;
- Builds on existing skills;
- Be as local as possible; and
- Provide equitable access to specialist service.

A formalised network for Restorative Dentistry will harness the knowledge, skills and competencies of dental healthcare professionals from primary care, the hospital based Restorative Dentistry service, academic restorative dentistry, NHS Education Scotland and others involved in the delivery of the service.

The service would provide a comprehensive treatment planning and advisory service and would accept referrals for second opinions and treatment plans from referring dentists as well as tertiary referrals from Hospital Consultants, including OMFS and ENT, for patients requiring oral maxillofacial re-construction and rehabilitation following surgery/trauma to the head and neck. The service would optimise the primary/secondary care interface for the benefit of patients supporting the delivery of intermediate care in the primary care setting.

The service would target the following high priority groups:

1. Head and Neck Oncology;
2. Multidisciplinary Care;
3. Severe Medical Compromise; and
4. Training.

Demand in the West (Appendix 1), highlights a potential demand within the NoS network of approximately 2,000 new patients per year and the need for approximately 4.00 wte NHS consultants to meet such a potential demand. In order to provide such a service, the appointment of two additional Consultant posts is required, based in Aberdeen and Inverness.
Treatment of lower priority groups will be prioritised by Intermediate specialists/dentists with additional skills and training, supported within a Consultant led network.

1. Endodontics (Root Canal treatment);
2. Periodontics (gum treatment);
3. Removable Prosthodontics;
4. Tooth Wear; and
5. Fixed Prosthodontics.

**Development of the network**

The development of a variety of local specialist skills within the primary care team will be key to ensuring sustainable change and future capacity growth potential. This would not only centre upon developing restorative mono specialist skills at local level but also the development of GDS/Primary Care Dentists with a special interest (DwSI), dental therapists and clinical dental technicians. An investment in local skills would support a network approach and help address perceived local need and equity of access. This will be complementary to, and does not replace referral to specialist services within secondary care or care provided by general dentists. Instead, this provides an option for referral where treatment falls between specialist and generalist care. The benefit of this option is that care is delivered locally, and is provided at the right time, in the right place, and by the right person.

In addition, some patients may be appropriate for teaching and could be appropriately referred to the Aberdeen Dental Hospital or the Inverness Dental Centre. This would provide an alternative route for patients appropriate for teaching and ensure a continuous pool of patients consenting to be treated in a teaching institution.

The primary care network would be developed on a core team of:

- Senior salaried dentist;
- Dental therapist/hygienist; and
- Support staff.

The primary care teams, whilst having more specialised areas of expertise, would be required to have a generic restorative remit with links to/support for special dental care services. In addition, they will require to have a more specialised remit such as endodontics or periodontology.

The periodontal element of the restorative network would be delivered through optimising the contribution from therapists/hygienists to enable them to have a significant role in managing and treating periodontal disease, whilst in a similar way to the dentists above, the therapists would support special care as well as delivering periodontal care in a locality.

These proposals are in line with recommendations in the SDNAP national review on restorative dentistry.

**Enhanced Skills Practitioners**

Practitioners with enhanced skills will be vital in the establishment of the regional network.

This role has not yet been formally established within Scotland, however, the role of Dentist with a Special Interest (DwSI) has been clearly defined by the Department of Health in England:

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13 Scottish Dental Needs Assessment Programme (SDNAP), July 2012, Restorative Dentistry Needs Assessment Report

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Page 15 of 27
"A dentist working in the primary care setting who provides services which are in addition to their usual and important generalist role. The DwSI provides a service which is complementary to the secondary services but does not replace that provided by a dentist who has undergone the training required for entry to a specialist list. The DwSI is an independent practitioner who works within the limits of their competency in providing a special interest service, and who refers on where necessary.

The DwSI may deliver a clinical service beyond that normally provided by a primary dental care practitioner or may deliver a particular type of treatment. Individual DwSIs will be able to demonstrate their competencies in their special interest areas. Special interests may be demonstrated by dentists through the completion of formal training programmes and/or experience based evidence."

Department of Health/FGDP(UK) 2004

Enhanced Skills Practitioners will have a generic restorative remit, although will specialise in one of the monospecialties of Restorative Dentistry: Endodontics, Prosthodontics, Conservation and Periodontology, with Dental Therapists/Hygienists having a significant role in periodontal care and treatment.

This role will add capacity, reduce the number of inappropriate referrals into secondary care, reduce waiting times for secondary care services, and provide a more convenient service in a local setting.

Referral pathway

Figure 1 below illustrates the linkages between different parts of the services and the referral route.

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**Figure 1**

2006, DoH, Dentists with Special Interests (DwSIs). A step by step guide to setting up a DwSI service

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Network Activity

The following table highlights the potential workforce and activity associated with the proposed NoS Restorative Network.

<table>
<thead>
<tr>
<th>Care groups</th>
<th>Staff Number / distribution</th>
<th>Estimated workload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant services</td>
<td>ADHS 3.00 wte</td>
<td>1500 referrals per annum</td>
</tr>
<tr>
<td>Teaching services</td>
<td>3.00 wte</td>
<td>500 referrals per year 3 Intermediate care staff per annum in training</td>
</tr>
<tr>
<td>Primary care specialists /Intermediate care</td>
<td>4 P/t endodontics 3 P/t periodontology 3 P/t fixed/removable</td>
<td>1000 endodontic cases per year 1000 periodontology cases per year 1000 cases fixed and removable per year Circa 3000 to 4000 cases per year</td>
</tr>
<tr>
<td>Primary care</td>
<td>All centres pop &gt; 3000</td>
<td>15,000 root canal treatments per year 1000 complex periodontal cases per year 10,000 crowns per year 2000 bridges per year</td>
</tr>
</tbody>
</table>

Table 8: workload

NHS Grampian has the lowest rate or number of endodontic cases in Scotland per population, with less than half of that of an equivalent size board, for example, NHS Lanarkshire. If the North of Scotland had an equivalent rate to that of NHS Greater Glasgow and Clyde, the NoS would need to deliver over 20,000 cases in primary care per year, which is well over double the present rate.

The North is not presently delivering restorative care to the population at anything similar to the rates seen in the West of Scotland.

Treatment item: Root treatments - Items 15, 44(c)(d), 58(f), 60(c)(d) & 63(c)(d)(e)(f)

<table>
<thead>
<tr>
<th>Health Board</th>
<th>Number of teeth root treated</th>
<th>Value (£)</th>
<th>Number per 100 courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotland</td>
<td>130,556</td>
<td>8,674,867</td>
<td>3.4</td>
</tr>
<tr>
<td>Ayrshire &amp; Arran</td>
<td>10,146</td>
<td>660,346</td>
<td>3.2</td>
</tr>
<tr>
<td>Borders</td>
<td>1,524</td>
<td>91,302</td>
<td>2.2</td>
</tr>
<tr>
<td>Dumfries &amp; Galloway</td>
<td>2,377</td>
<td>156,947</td>
<td>2.7</td>
</tr>
<tr>
<td>Fife</td>
<td>6,744</td>
<td>448,403</td>
<td>2.7</td>
</tr>
<tr>
<td>Forth Valley</td>
<td>7,739</td>
<td>506,455</td>
<td>2.7</td>
</tr>
<tr>
<td>Grampian</td>
<td>6,816</td>
<td>446,983</td>
<td>2.7</td>
</tr>
<tr>
<td>Greater Glasgow &amp; Clyde</td>
<td>40,380</td>
<td>2,702,115</td>
<td>4.2</td>
</tr>
<tr>
<td>Highland</td>
<td>5,693</td>
<td>374,395</td>
<td>3.7</td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>16,676</td>
<td>1,092,532</td>
<td>3.9</td>
</tr>
<tr>
<td>Lothian</td>
<td>22,333</td>
<td>1,546,984</td>
<td>3.3</td>
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<tr>
<td>Orkney</td>
<td>290</td>
<td>18,685</td>
<td>4.6</td>
</tr>
<tr>
<td>Shetland</td>
<td>283</td>
<td>17,557</td>
<td>2.0</td>
</tr>
<tr>
<td>Tayside</td>
<td>8,793</td>
<td>562,019</td>
<td>2.5</td>
</tr>
<tr>
<td>Western Isles</td>
<td>762</td>
<td>50,143</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Table 9: Primary care services in Endodontics 2010/11 by Health Board
Development and funding of the intermediate tier

It is proposed to establish one Primary Care Salaried Dental Services Restorative team per 100,000 population (between 8 and 10 support teams across the North).

Currently there is a wide range of primary care senior salaried posts contributing to some aspects of restorative care, however, there is no formal network, structure or governance framework in place to support the network.

There are also a range of practitioners currently undertaking further study to Masters level in Restorative Dentistry, Endodontics, Periodontics or the Postgraduate Diploma in Dental Studies through Bristol University (BUOLD). The network will further develop over a period of time, as individuals are identified within suitable locations and relevant training is undertaken.

Funding of the intermediate tier of the network will primarily be through existing General Dental Services (GDS) spend. There will however be a requirement for Salaried Primary Care Dental Services to review priority areas for re-design and identify opportunities to re-profile the establishment funded through the General Dental Services (Scotland) 2010 Regulations. In NHS Highland, for example, there are already a number of skilled individuals in post, hence any additional funding sought will contribute to a governance framework (audit, meetings etc).

All patients would be subject to NHS standard charges.

7. Finance

The additional cost for provision of Secondary care services is:

<table>
<thead>
<tr>
<th>NHS</th>
<th>Academic</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>wte £</td>
<td>wte £</td>
</tr>
<tr>
<td>Consultant:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post 1: NHS Highland</td>
<td>0.7 84,000</td>
<td>0.3 36,000</td>
</tr>
<tr>
<td>Post 2: NHS Grampian</td>
<td>0.5 60,000</td>
<td>0.5 60,000</td>
</tr>
<tr>
<td>Support costs:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Band 4 Nurse</td>
<td>1.6 40,000</td>
<td>- -</td>
</tr>
<tr>
<td>Technician</td>
<td>1.0 30,000</td>
<td>- -</td>
</tr>
<tr>
<td>Materials</td>
<td>26,000</td>
<td>20,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>240,000</td>
<td>116,000</td>
</tr>
</tbody>
</table>

Table 10: staff costs

Academic costs have been discussed and agreed with Aberdeen University and NHS Education for Scotland (Dental ACT).

The contribution, calculated on a population basis, required from NHS Boards is:

<table>
<thead>
<tr>
<th>NHS Board</th>
<th>Funding contribution (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grampian</td>
<td>117,098</td>
</tr>
<tr>
<td>Highland</td>
<td>103,390</td>
</tr>
<tr>
<td>Shetland</td>
<td>6,360</td>
</tr>
<tr>
<td>Orkney</td>
<td>5,760</td>
</tr>
<tr>
<td>Western Isles</td>
<td>7,392</td>
</tr>
<tr>
<td>TOTAL</td>
<td>240,000</td>
</tr>
</tbody>
</table>

Table 11: NHS Board contributions
8. Clinical Benefits

The perceived clinical benefits of a network approach to the delivery of Restorative Dentistry services include:

**Support to Clinicians:** decision-making, emergency management, skill sharing and inclusivity.

**Patient and Access Benefits:** less travel to access expertise, more rapid access, better distribution and utilisation of resource, and shorter waiting times.

**Educational Benefits:** shared learning; common learning pathways; development and maintenance of skills, and inclusivity and the sense of belonging to a wider network.

**Governance:** setting standards, audit improving and adjusting standards.

9. Outcomes

The creation of a network of services, including an appropriate intermediate level of specialist care, will provide improved local access to services and improved timeliness of treatment for patients. This reconfiguration of services will avoid unnecessary referrals to inappropriate clinicians/services and will be better able to cope with existing demand and projected demand for restorative dentistry referral services resulting from an improved service to NHS Boards and the increase in the ageing population.

Defined outcomes will include:

- Strengthening the delivery of primary care dental services across the North;
- Supporting Restorative Consultant services on the Islands and at distributed centers throughout the North including Inverness;
- Supporting the development of specialist care dental services throughout the North;
- Supporting teaching within Aberdeen University, University of the Highlands and Islands and at the dental Outreach centres in Western Isles, Inverness Elgin and Aberdeen;
- Supporting other consultant led services such as the oral cancer and cleft palate networks;
- A unified approach to the delivery of Restorative Dentistry services across the North of Scotland;
- Equity of service delivery across a remote and rural region of Scotland/service across the North of Scotland;
- HEAT targets are met;
- Quality outcomes are uniform and agreed across the North of Scotland;
- Compliance with 18/52 Referral to Treatment (RTT) standard;
- Unified corporate and clinical governance issues are addressed;
- Public value for money; and
- Meeting the pledges contained in Patient Rights Bill.

10. Links to the NHS Scotland Quality Strategy

The Restorative Dentistry service in the North of Scotland will be designed to deliver the six dimensions of healthcare quality and meet NHS Scotland Healthcare Quality ambitions:
### Quality Dimension

| Safe               | • Right treatment at the right time, in the right place, by the right person.  
|                   | • Appropriately trained and validated.  
|                   | • Appropriate skills and competences.  
|                   | • In an environment where CPD is encouraged and supported.  
| Timely            | • At the right time for the stage of clinical presentation:  
|                   |   o acute versus chronic issues addressed  
|                   |   o assure avoidance of deterioration  
|                   |   o proactive engagement early in the pathway  
|                   |   o ensure the capacity exists in system for continuing care  
|                   |   o schedule of care delivered at appropriate stage of care: clinical, administrative and managerial  
| Equitable         | • Same standard and quality of care based on clinical need, delivered as locally as possible and not dependant on geographic location;  
|                   | • Access to the full range of clinical expertise locally, including intermediate and specialist level practitioners.  
| Efficient         | • Optimal use of resources, recognising this is not the same as working at 100% of capacity;  
|                   | • Avoiding unnecessary referral to inappropriate clinicians from the point of view of professional training level or specialty;  
|                   | • Workforce and skill mix appropriate to delivery of care;  
|                   | • Flexible use of resources, for example, accommodation and personnel;  
|                   | • Reflected in job planning.  
| Effective         | • Clinical outcome – right first time;  
|                   | • Patient satisfaction;  
|                   | • One-stop multidisciplinary team development and delivery;  
|                   | • GDP satisfaction;  
|                   | • CPD education/training.  
| Patient centred   | • Access to MDT for reduced number of visits and enhanced care;  
|                   | • Full range of clinical expertise to allow even complex care to be delivered.  

### 11. Regional Planning in the North of Scotland

The North of Scotland Planning Group is a collaboration between NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Tayside and NHS Western Isles.

The North of Scotland Maxillofacial, Oral and Dental Health Project Board are committed to developing a regional network for Restorative Dentistry. NHS Tayside have indicated that they do not want to be included in this proposal.

### 12. Affordability

It is recognised that stakeholders are under significant financial pressure, given the current financial climate.

### 13. NHS Boards Approval

This Business Case seeks approval from NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland and NHS Western Isles to the costs above.
### Appendix 1: Estimated demand and consultant service needs based on Glasgow/West of Scotland demand levels

<table>
<thead>
<tr>
<th>Column1&amp; 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New patients based on most up to date estimates</strong></td>
<td>9664</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Crude population</td>
<td>Crude pop ratios using North as 1</td>
<td>Expected demand if based on North demand</td>
<td>Expected demand if based on West demand</td>
<td>Numbers of NHS consultant sessions</td>
<td>Academic consultant NHS sess @ 2 sess nhs/wte</td>
<td>Present rude estimate of total NHS sess available</td>
<td>Present estimated new/yr / consultant session (efficiency)</td>
<td>Present need for consultant sess based on Av 52/ session &amp; present demand</td>
<td>Predicted need for consultant sess based on Av 52 new/session/yr and West demand (C6). This includes 2sessions/wte Academic consultant (increase)</td>
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<tr>
<td><strong>Glasgow /West Scotland</strong></td>
<td>5,443</td>
<td>2.5m</td>
<td>2.63</td>
<td>1972.5</td>
<td>5443</td>
<td>62.5</td>
<td>12</td>
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<td>73</td>
<td>73</td>
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<tr>
<td><strong>Aberdeen /North of Scotland</strong></td>
<td>750</td>
<td>0.950m</td>
<td>1</td>
<td>750</td>
<td>2070</td>
<td>20</td>
<td>2</td>
<td>22</td>
<td>34</td>
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<tr>
<td><strong>Edinburgh /Dundee East Scotland</strong></td>
<td>3,471</td>
<td>1.8m</td>
<td>1.84</td>
<td>1380</td>
<td>3808</td>
<td>48</td>
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<tr>
<td><strong>Totals</strong></td>
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<td>5.25m</td>
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<tr>
<td><strong>ISD/SDNP</strong></td>
<td>ISD/ SDNAP From C3</td>
<td>674xC4 C4 x 5443/2.7</td>
<td>SDNAP</td>
<td>SDNAP</td>
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<tr>
<td><strong>Average</strong></td>
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<td></td>
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<tr>
<td><strong>Predicted workforce need working to av efficiency and west levels activity Col6 C2/54</strong></td>
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<td></td>
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</tbody>
</table>

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North of Scotland Planning Group is a collaboration between NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Tayside and NHS Western Isles
Appendix 2: Definition of Restorative Dentistry Service

Restorative Dentistry is the study, diagnosis and integrated effective management of patients with diseases of the oral cavity, the teeth and supporting structures, including the care of those who have additional needs associated with disability or medical problems too difficult to manage in Primary Care or Community Service\(^{15}\). The scope of the role includes activities associated with Endodontics, Periodontics, Prosthodontics and Implantology.

**Endodontics**: Endodontic treatment removes infected or damaged tissue from inside a tooth. This tissue, called the pulp, contains nerves and blood vessels that help nourish the tooth. After the pulp is removed, the pulp chamber and root canals are cleaned, disinfected, filled and sealed. Endodontic treatment saves teeth that would otherwise need to be extracted. Although the pulp is removed, the treated tooth remains functional, nourished by the surrounding tissues. The most common cause of pulp damage is severe decay or a fracture that exposes the pulp to bacteria that may cause infection. Other causes of pulp damage include traumatic injury such as a blow to the mouth, a cracked or loose filling or repeated fillings in a tooth, and occasionally periodontal disease. The alternative to endodontic treatment is extraction of the tooth. Loss of a tooth could create a functional problem such as compromised chewing or an aesthetic problem. Restoring the lost tooth may involve the provision of a prosthetic replacement such as a denture, bridge or a dental implant the costs of which are variable\(^{16}\).

**Periodontics**: Periodontal disease is a disease of the gum tissue and underlying bone. Unlike gingivitis, periodontitis is associated with irreversible loss of the underlying bone that retains the teeth. Soft tissue pockets usually open up between the tooth and gum and act as reservoirs for bacteria unless treated. The rate of bone loss varies very much from individual to individual, but if untreated may well lead to tooth loss. Up to 80% of the population will probably get some periodontal disease, and 15-20% of people will suffer from aggressive disease and will lose a significant number of teeth if they do not receive treatment. Like gingivitis, periodontitis is usually painless, and by the time people become aware of problems, usually teeth becoming loose or drifting out of alignment, serious damage has been done. If caught early enough, most periodontal disease can be treated. The most common type of gum treatment brings together two components;

1. Oral hygiene (home care plaque control); and
2. Meticulous removal of plaque and calculus (tartar) from the periodontal pockets (debridement). In this way, treatment targets the causes and effects of gum disease, namely the bacteria initiating disease at the edge of the gum and the bacteria progressing the disease within the gingival/periodontal pockets\(^{17}\).

**Prosthodontics**: Prosthodontics is also known as dental prosthetics or prosthetic dentistry. Prosthodontics is the dental specialty pertaining to the diagnosis, treatment planning, rehabilitation and maintenance of the oral function, comfort, appearance and health of patients with clinical conditions associated with missing or deficient teeth and/or oral and maxillofacial tissues using biocompatible substitutes. Prosthodontics is the branch of dentistry that deals with the replacement of missing teeth and related mouth or jaw structures by bridges, dentures, or other artificial devices.

**Implantology**: A dental implant is essentially a substitute for a natural root and commonly it is threaded cylinder shape. Each implant is placed into a socket carefully drilled at the precise location of the intended tooth. In order to support replacement teeth, dental implants normally have some form of internal screw thread or post space that allows a variety of components to be fitted. If an implant has a screw-thread on its outer surface it can be screwed into position and if it does not, it is usually tapped into place. Once fitted, these components provide the foundation for long-term support of crowns, bridges or dentures. The main aim during installation of any implant is to achieve immediate close contact with the surrounding bone. This creates an initial stability, which over time is steadily enhanced by further growth of bone into microscopic “rougnesses” on the implant surface. Almost all dental implants in use today are made from titanium or titanium alloy, materials that have been shown over many years to be well tolerated by bone. The terms 'Osseo integrated implants' or 'endosseous implants' are widely used to describe dental implants that can develop and maintain a close union with bone in order to support replacement teeth\(^{18}\).

\(^{15}\) British Dental Association, (November 2005) "Consultant Practice in the Dental Specialties"
\(^{16}\) http://www.britis hendodonticsociety.org.uk
\(^{17}\) http://www.periodontics.co.uk/faqs.htm#periodontal
\(^{18}\) http://www.adi.org.uk/public/implant/whatis.htm
### Appendix 3: Costs by Board of Treatment

<table>
<thead>
<tr>
<th>NHS Board of Treatment</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
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<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tbody>
<tr>
<td>NHS Scotland</td>
<td>18,228.0</td>
<td>21,093.0</td>
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<td>1.0</td>
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<td>Borders</td>
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<td>287.0</td>
<td>288.0</td>
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<td>0</td>
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<tr>
<td>Fife</td>
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<td>0</td>
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<tr>
<td>Forth Valley</td>
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<td>93.0</td>
<td>151.0</td>
<td>14.0</td>
<td>0.0</td>
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<tr>
<td>Golden Jubilee National Hospital &quot;</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>Grampian</td>
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<td>259.0</td>
<td>320.0</td>
<td>393.0</td>
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<td>551.0</td>
<td>519.0</td>
<td>503.0</td>
<td>616.0</td>
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<td>4,435.0</td>
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<td>5,625.0</td>
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<tr>
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<td>43.0</td>
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<td>116.0</td>
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<td>158.0</td>
<td>131.0</td>
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<tr>
<td>Lanarkshire</td>
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<td>Lothian</td>
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<td>916.0</td>
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<tr>
<td>Orkney Islands</td>
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<td>18.0</td>
<td>5.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Shetland Islands</td>
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<tr>
<td>Tayside</td>
<td>8,539.0</td>
<td>7,915.0</td>
<td>7,140.0</td>
<td>7,414.0</td>
<td>6,398.0</td>
<td>5,546.0</td>
<td>2,420.0</td>
<td>2,418.0</td>
<td>2,420.0</td>
<td>2,371.0</td>
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<tr>
<td>Western Isles</td>
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## Appendix 4: Discussion of options

<table>
<thead>
<tr>
<th>OPTION</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
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</table>
| 1. Do nothing. | - Cost neutral therefore no resource implications. | - This is not feasible as NHS Grampian has indicated that they cannot continue to provide a visiting Restorative Dentistry service to NHS Highland indefinitely.  
- Clinics within NHS Highland are frequently cancelled and the service is spasmodic at best.  
- There is no treatment service within NHS Highland and the current service is limited to advice.  
- Complaints are frequently received by NHS Highland regarding a lack of service provision.  
- Risk of loss of head and neck cancer centre status in NHS Highland as no involvement in MDT.  
- The impact of travelling time on a Consultant job plan and reduction in availability of clinical time impacts on and limits the service to patients, particularly the provision of treatment. |
| 2. Refer NHS Highland patients to a non Scottish provider | - It is not ideal to send very ill patients with head and neck trauma/cancer to England for oral health treatments. However it may be possible to procure a visiting service from elsewhere in the UK.  
- To our knowledge there is no capacity in other UK services to accept referrals and initial enquiries suggest that it is likely that an alternative provider would also need a commitment to funding to enable additional recruitment to create the required capacity. | - NHS Highland will require to find additional resource.  
- The impact of travelling time on a Consultant job plan and reduction in availability of clinical time would impact on and limit the service to patients, particularly the provision of treatment. In addition the costs of travel time and accommodation need to be factored in.  
- At the NHS Highland workshop, feedback from primary care (PC) colleagues was unanimous in that the use of locum consultants from outwith Scotland resulted in inappropriate treatment plans that could not be followed through, and ineffective liaison with PC colleagues which led to a lost opportunity to optimise the PC resource.  
- Relying on VC to support the MDT is a significant compromise and would require careful co-ordination to avoid treatment delays and does not compensate for the fundamental requirement to examine and treat the patient in complex, multi disciplinary cases jointly with OMFS and ENT colleagues, speech and language therapists and nutritionists. |
| 3. Develop a shared Consultant Restorative Dentistry post between NHS Grampian and NHS Highland and work on a North of Scotland network basis. This post would be based in Inverness and undertake clinics in Elgin to capture the west Grampian activity. | - A high level shared Restorative Dentistry service with clear access criteria would address the current capacity issues in both NHS Highland and NHS Grampian.  
- The post holder would provide crucial training and professional support to primary care colleagues thus enhancing skills to facilitate a shift in the balance of care.  
- The post would provide the crucial ”missing link” to the existing OMFS service enabling compliance with SIGN guidelines for the Head & Neck Cancer MDT.  
- Costs of the post would be shared between NHS Highland and NHS Grampian.  
- This would improve the reputation of NHS Highland as an area to work and may improve recruitment / retention to Primary Care Dental Services. | - NHS Highland will be required to find additional resource.  
- A single post shared with NHS Grampian may be insufficient to meet demand – there will therefore need to be a clear commitment to developing skills in primary care to help manage demand locally.  
- The demand may increase when it is known that there is a service available and there will then be a call and need for additional capacity and staffing.  
- Identification of accommodation within the existing dental estate may displace elements of current service provision. |
4. Develop additional Consultant capacity within both NHS Grampian and NHS Highland, working within a North of Scotland network.

Two posts would be created, based in Aberdeen and Inverness and include an element of academic work.

<table>
<thead>
<tr>
<th>Improve outcomes for patients through:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supporting primary care dentists.</td>
</tr>
<tr>
<td>• Providing access to a service that is currently not available within NHS Highland</td>
</tr>
<tr>
<td>• Improving recruitment and retention of Primary care Dentists and Consultants in the Dental specialties.</td>
</tr>
<tr>
<td>• Enabling compliance with Head &amp; Neck cancer MDT guidance.</td>
</tr>
<tr>
<td>• Improving the rehabilitation of Head &amp; Neck cancer patients.</td>
</tr>
</tbody>
</table>

5. Disinvest in Restorative Dentistry within NHS Highland.

| Whilst being politically unattractive, it may be prudent to make a decision to disinvest in Restorative Dentistry rather than provide a second-rate service for this vulnerable group of patients whose quality of life is already greatly reduced. |
| This would free-up resource for investment in other specialties or to support training in intermediate skills for primary care teams. |
| Current funding is no more than £16k per annum. |
| Lack of primary care dental services due to lack of Consultant back up and support. |
| The reputation of NHS Highland as an attractive place for primary care dental service providers to live and work would be reduced further impacting on recruitment and training opportunities. |
| No Consultant Restorative service would significantly compromise the OMFS Service as Restorative Dentistry is an essential component of all head and neck MDTs to enable restoration of function and minimise disability after surgery and/or radiotherapy. |
| The absence of a Restorative Dentistry service might place the recognition of Raigmore as a Head & Neck Cancer Unit at risk. |
| Impact on future secondary care staff recruitment. |