

SCOTTISH DENTAL NEEDS ASSESSMENT PROGRAMME (SDNAP)

Orthodontic Needs Assessment Report

April 2015



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Purpose

The purpose of the Needs Assessment was to assess the current and desired level of orthodontic service provision and to identify key issues that are affecting the orthodontic service provision in Scotland. This was conducted against the background of the introduction of the Index of Orthodontic Treatment Need (IOTN) in October 2011 to qualify for NHS Orthodontic treatment and the changing demand for, and cost of orthodontic care. The recommendations within this Needs Assessment Report are aimed at reducing dental health inequalities.

Methods

The report was informed by evidence and data that were gathered from ISD, NDIP, Health boards, NRS, the experiences of service users and public, GDP survey, consultants and specialist practitioners' views and published research. While compiling the report, the quality of data, captured on SMR00 and returned to ISD, was found to be variable across the Health Boards, and the individual orthodontic departments were concerned about the accuracy. The researcher, therefore, had to use the data collected locally in District General Hospitals and Dental Hospitals when considering the secondary care data.

Key Findings

1. In Scotland, prevalence of malocclusion and need for orthodontic treatment cannot be calculated accurately due to the absence of epidemiological studies of occlusion and malocclusion. However, The National Child Dental Health Survey (2003) found that 35% of 12 year-old children in the UK had an IOTN Dental Health Component (DHC) of 4 or 5 and an Aesthetic Component (AC) of 8 to 10.
2. New regulations which have been introduced recently on dental practices had both negative and positive impact on the orthodontic service provided by specialist practices e.g. IOTN, prior approval and the cap on the General Dental Practice Allowance.
3. It was observed that children who participated in p7 focus groups changed their opinion of having orthodontic treatment when they were made aware of the risks of orthodontic treatment.
4. It was also observed that the awareness of risks of orthodontic treatment among patients who attended the specialist practice was low.

01 EXECUTIVE SUMMARY AND RECOMMENDATIONS

5. Patients valued services offered by specialist practices and considered the hospital orthodontic service as an essential service.
6. Patients treated in the specialist practice and HOS anticipated aesthetic benefit but functional and dental health benefits were also anticipated benefits among the patients interviewed in the HOS. Patients reported that their quality of life has markedly improved.
7. It is noted that there are no policies, guidance or good practice guidelines relating to GDPs, qualifications and experience required for carrying out orthodontic treatment.
8. There is a difference between the need and demand for orthodontic treatment. While the orthodontic need of patients (characterised by IOTN 3.6 and above) is met across Scotland by primary care and HOS staff, the demand is not met quite so consistently. The need and demand are met throughout the central belt, with primary care specialist practitioners able to register new patients, but geographical variations exist.
9. It has been noted that, in some areas, adult orthodontic patients may find it difficult to access NHS orthodontic treatment in a specialist practice.
10. Currently, the hospital orthodontic service is not meeting the 18 week RTT. Broadly speaking, from the numbers in the HOS service, together with the numbers in SpPs, it can be concluded that overall, Scotland has adequate workforce numbers to meet the orthodontic treatment need, but there are some marked regional inequalities within this balance leading to increased waiting times for treatment in some areas.
11. Specialist Practitioner service has benefited the HOS, and that the HOS is able to concentrate on providing treatment for the complex and multidisciplinary cases.

Recommendations

Professionals

1. GDPs have the responsibility to assess the patient, give them written information of the risks and benefits of treatment and refer appropriately, and at the correct time, either to a Specialist Practitioner or directly to the HOS. They should be aware of, and follow, local protocols. Referral guidelines should be developed and circulated to GDPs to ensure patients are referred to the most appropriate provider with minimal delay.

-
2. Adults should be considered for orthodontic treatment as indicated by their IOTN grade. They should be able to access NHS treatment in primary care unless referral to the HOS is indicated for multidisciplinary treatment.
 3. Since the recommended retention period is now more than 12 months, GDPs are most appropriately placed to monitor continued retention after the patient has been discharged from the treating orthodontist. It is acknowledged that there will be training and funding requirements for this provision.
 4. All service providers should advise patients (and, where appropriate, their parents) on the risks and benefits of orthodontic treatment. They must be clear on the expected length of the retention phase and be explicit that this will incur a cost when it becomes the patient's long-term responsibility in primary care.

Health Board

5. GDPs who are not on the orthodontic specialist list, should ensure that they are working strictly within their experience and competence, and ensure that they undertake suitable courses and training. Clearer guidance relating to experience levels and qualifications required for GDPs to treat orthodontic patients in GDP practice should be further investigated.
6. In remote and rural areas where patients have limited access to orthodontic treatment, Health Boards should ensure that GDPs who are treating orthodontic patients are appropriately supported by an orthodontist on the specialist list.
7. More national and local courses and training should be provided by NES and NHS Boards on IOTN and the supervision of retention.
8. A national job profile should be developed for Orthodontic Therapists. An Agenda For Change matching should be agreed to standardise pay scales.
9. The appeals process varies widely among NHS Boards. The appeals process should be standardised with an appropriate process for patients to follow and a standardised pathway for the appeals process.
10. Orthodontists work, in varying degrees, in clinical networks. Consideration should be given to formalising these networks to support staff with different levels of experience working together in different geographical and demographic settings.

01 EXECUTIVE SUMMARY AND RECOMMENDATIONS

11. As the HOS for patients with complex orthodontic needs often requires multidisciplinary care from other specialties, consideration should be given to the recruitment of consultants in Restorative and Paediatric Dentistry in those health boards with limited access to these specialities to improve the patient journey.

Service

12. The Prior Approval system should be simplified with the amount of information requested being standardised and the turnaround time for approval of cases being within a reasonable time. The communication process between PSD and the practitioners should be considered to improve the patient journey.
13. As orthodontic specialists practitioners are a distinct group within the primary care dental service, consideration should be given for representation at SDPB and Scottish Government.
14. A clearer fee structure on the SDR is required for orthodontic items of service. The items of service should be taken into consideration when discussing possible changes to the SDR.
15. Clear guidance should be given on the professional responsibilities for the provision and supervision of retention. Guidance from the Scottish Government must be given on remuneration for long-term retention as to whether this lies with the patient or the NHS. A standard fee for replacement of retainers should be agreed.
16. Careful consideration should be given to the manner in which the 18 weeks Referral To Treatment target is applied to secondary care Orthodontics, as these cases are often complex and require special investigations, and treatment plans are typically lengthy and varied.
17. 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.

The demand for orthodontic treatment is changing due to dental health expectations rising in general, as well as varying cultural values (SNAP 1997) (CDO Report 2012). The uptake of orthodontic treatment is influenced by many factors, including socio-economic factors and proximity to services. The Scottish Needs Assessment Programme (SNAP) Orthodontic report published in 1997 found that a paucity of childhood orthodontic uptake contributes to an increasing demand for adult orthodontic care (SNAP 1997).

Currently, routine orthodontic care for children in Scotland is provided by NHS General Dental Services (GDS) and by the Public Dental Service (PDS) in NHS Island boards at no direct cost to the patient with recognition that this has major resource implications. NHS adult patients are charged for orthodontic treatment up to a maximum of £384 unless they are exempt.

Nearly 4.4 million courses of dental treatment were carried out in 2013/14, of these 2.7% were for orthodontic treatment. Children accounted for 93.6% of orthodontic courses of treatment. The cost of orthodontic primary care provision in Scotland has fluctuated over the last five years with the current figure standing over £15 million, with over 30,000 active appliances (ISD, 2014). In October 2011, the Scottish Government introduced the use of the Index of Orthodontic Treatment Need (IOTN) to decide which cases are severe enough to warrant treatment funded by the NHS.

This SDNAP Orthodontic Needs Assessment was undertaken to assess the current and desired need for orthodontic service provision in Scotland. This was conducted against the background of the introduction of the Index of Orthodontic Treatment Need (IOTN) in October 2011 and the changing demand for, and cost of, orthodontic care.

The report is based on the technique of Health Needs Assessment (HNA). This method is commonly used to evaluate health services. The three HNA approaches of corporate, comparative and epidemiological approaches were used to compile this report.

03 HEALTH NEEDS ASSESSMENT (HNA)

HNA is defined as “a systematic method of identifying the public health, health/social care needs of a population and making recommendations for changes to meet these needs” (Wright 2001). Stevens and Raftery described the common approaches to assessing population needs for health care. These are characterised as the epidemiological, corporate and comparative approaches to HNA (Stevens & Raftery 1994).

Table 1: HNA Approaches and Work Involved

HNA Approaches	Work Involved
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

Why is HNA Important?

The aim of a HNA is to maximise appropriate effective health care/policy, minimise both the provision of ineffective health care/policy and the existence of unmet need. HNA provides a systematic framework for undertaking a complex and important task in an evidence based way.

4.1 Aim

To conduct needs assessment of orthodontic service provision in all the Health Boards across Scotland and make recommendations.

4.2 Objectives

1. To describe the historical, current and desired level of orthodontic service provision in Scotland.
2. To determine perceptions of service providers concerning the current orthodontic service.
3. To determine perceptions of patients/public concerning the current orthodontic service.
4. To describe the current orthodontic service model and alternative models.
5. To describe the workforce required to support the current service.
6. To make future recommendations.

4.3 Methods

The objectives above were broken down into smaller questions, which then were approached by methods listed below.

1. Data collection from various sources (ISD, NDIP).
2. General Dental Practitioner Survey.
3. Specialist Practitioner Telephone Interviews.
4. Consultant interviews.
5. Focus groups in schools.
6. Interviews with patients and parents.

04

AIM, OBJECTIVES AND METHODS

4.4 Limitations

In this report children are defined as less than 18 years old and adults as 18 years and over. While both children's and adults' service provision is included, service provided to Cleft Lip/ and Palate patients is outwith the scope of this report, as these patients are under the remit of a comprehensive managed clinical network known as Cleft Care Scotland.

Private provision of Orthodontics is also outwith the scope of this report.

4.5 Ethical Considerations

Ethical approval was sought from the West of Scotland Research Ethics Service in November 2012. The response of the committee stated that ethical approval from an NHS Research Ethics Committee was not required as the project was considered to be service evaluation and not research.

Participants were informed about the response from the ethics committee and informed consent was obtained from each participant prior to taking part in the needs assessment.

Orthodontics is the branch of Dentistry concerned with the growth of the teeth, jaws and face and the practice of preventing and correcting irregularities of the teeth and jaws (www.bos.org.uk).

Orthodontics is a sub-speciality of Dentistry primarily concerned with disturbances of the positions of the teeth (malocclusion) and the jaws that support them (SNAP, 1997). It was defined by Mitchell as “the branch of Dentistry concerned with facial growth, development of the dentition and occlusion, and with the diagnosis, interception and treatment of occlusal anomalies”. (Mitchell 2007 Oxford University Press).

Patients may require Orthodontics for many reasons, and the aim is to produce a healthy, functional bite, arguably with greater resistance to dental disease, as well as improving appearance. Malocclusion itself is not a disease but a variation from the ideal, and in the majority of cases does not have any detrimental effect on the health of the individual or his or her mouth. The need for treatment is dependent upon the risk factors for future oral health associated with malocclusion, the appearance of the teeth (both assessed by a nationally agreed index) and the self-perceived need of the patient. Stability and long-term care also must be taken into consideration, as well as the risks to oral health from side effects of the treatment.

The aim of orthodontic treatment has been reported to be to “produce improved function by the correction of irregularities to create not only greater resistance to disease, but also to improve personal appearance, which later will contribute to the mental as well as the physical well-being of the individual” (SNAP, 1997).

5.1 Prevalence

Epidemiological studies are essential in order to gather data on the prevalence of malocclusion and of the need for orthodontic treatment. In Scotland, the National Dental Inspection Programme (NDIP) collects information on the dental health status of children to inform the parents, Scottish Government, NHS boards and other organisations of the children’s oral disease prevalence in their area. The NDIP basic inspection collected information on “possible orthodontic need” of 11 year olds until 2013, when it ceased due to concerns regarding comparability. The average “possible orthodontic need” from the NDIP collected data was 20%, much lower than the figure usually quoted of around 35%, but this was possibly due to the fact the children were being inspected at a younger age than when orthodontic assessments are usually carried out.

The National Child Dental Health Survey (2003) found that 35% of 12 year-old children in the UK had an IOTN Dental Health Component (IOTN DHC) of 4 or 5 and an Aesthetic Component (IOTN AC) of 8 to 10. A further 8% were wearing orthodontic appliances. Richmond et al (1993)

reported that 9% of the patients who received orthodontic treatment in the GDS of England and Wales in the early 1980s did not have a need for treatment when assessed using IOTN criteria.

Table 2: Estimation of Orthodontic Treatment Need in 12-year-olds in Scotland

12 Year-old Population (Mid 2013) = 54857 (Source NRS)	
Treatment need	35% of 12 year olds
Number of children in need of orthodontic treatment	19200
P7 Population in Scotland (2012/2013) = 57,072 (Source NDIP 2013) Average Age of P7 Pupil is 11.5 Years	
P7 population without dentinal decay	72.8%
Number of children eligible for orthodontic treatment	41549
Treatment need	35% of 41549
Number of children in need of orthodontic treatment	14542

The table above shows the estimation of orthodontic treatment need in 12-year-olds in Scotland. The Scottish population data from 2013 shows the total number of children in the 12 year old age group is 54,857. According to the National Child Dental Health Survey (2003), 35% of 12-year-olds are in IOTN 4 and 5 categories and would benefit from treatment, i.e. in that year, some 19,200 children. Of course, patients outside this age group and some children with IOTN 3.6 to 4 would also receive NHS care, which would increase the numbers. However, the NDIP data (2013) for P7 showed that 27.2% of 11 year old children experience dentinal decay and therefore the orthodontic treatment may be postponed in some cases until the caries is stabilised.

5.2 Demand

The above paragraph reflects orthodontic treatment need for one cohort of children. However, the demand comes from a wider age group of children, as well as adults, who qualify for NHS treatment under the IOTN criteria. Thus, it is this higher number that is reflected in the higher demand for orthodontic treatment both in specialist practice and HOS.

5.3 Regulations in Scotland

Orthodontics in Scotland is provided across primary and secondary care. The General Dental Practitioner (GDP) is usually the first point of contact for patients for maintaining their oral health and has the role to refer patients to other services. Most orthodontic treatment is started once the permanent dentition has been established, usually between the ages of 11-14 years, but an increasing number of adults are now seeking orthodontic treatment.

Many patients receive orthodontic treatment in primary care in Specialist Practice (SpP), and a few from GDPs with an interest in Orthodontics. However, patients with more complex malocclusions require treatment in the secondary care Hospital Orthodontic Service (HOS), which facilitates the inter-disciplinary management they may require. For many of these patients, the starting age will be older, around 16-18 years, due to the requirement for growth to have ceased for them to have jaw surgery, or certain kinds of Restorative Dentistry they may require.

5.3.1 Index of Orthodontic Treatment Need (IOTN) Assessment

The “Action Plan for Improving Oral Health and Modernising NHS Dental Services in Scotland” was published in 2005 and recommended that community based orthodontic treatment should be concentrated on those assessed under the Index of Orthodontic Treatment Need (IOTN) as having a clinical need. From 1st October 2011, IOTN was introduced as a means of assessing whether orthodontic treatment can be provided under NHS General Dental Service arrangements.

The use of an index is generally thought to clarify cut off between categories of need and reduce the variability that is inherent to subjective assessments.

From 2011, IOTN DHC categories 1, 2 and 3 (up to, and including IOTN AC 5) are not considered for orthodontic treatment under GDS regulations due to the lack of evidence of health benefits associated with it. However, in certain special circumstances IOTN DHC 2 and 3 can be considered.

05 INTRODUCTION TO ORTHODONTICS

Patients are generally now only considered for NHS GDS treatment if they have:

- IOTN DHC grade 4 and 5 (regardless of IOTN AC grade)
- IOTN DHC grade 3, if their IOTN AC grade is 6 or greater.

Practitioners who will carry out the orthodontic treatment are now required to include their assessment of the patient's IOTN DHC and AC grades on the GP17 (O) form when seeking prior approval and payment. They must also submit supporting study models, clinical colour photographs and appropriate radiographs.

Patients can appeal against the decision under Regulation 29 of the GDS regulations if orthodontic treatment is not approved under the NHS regulations - currently the actual appeal mechanisms are different for each health board, which may introduce some inequality across Scotland.

5.3.2 Prior Approval

GDPs and SpPs in Scotland are remunerated by Item of Service payments as defined in the Statement of Dental Remuneration. Prior Approval must be sought from the Practitioner Services Division for all treatment claims where the cost, or likely cost, will exceed £350 and for discretionary items listed in the Statement of Dental Remuneration with an asterisk. In the case of orthodontic treatment, the calculation of £350 does not include diagnosis, study models and extraction of teeth for orthodontic purposes, or retention.

In cases where Prior Approval is required, only emergency treatment can be carried out before approval is granted.

The Prior Approval system has been particularly problematic over recent years, with cases taking as long as 8-10 weeks to obtain a decision on approval.

5.3.3 General Dental Practice Allowance Cap

The General Dental Practice Allowance (GDPA) was an allowance introduced in October 2005 to reward those practices committed to NHS Dentistry. The GDPA is a payment to practices of up to 12% of the practice gross earnings and is intended to help with practice costs.

From 1st November 2013 the Statement of Dental Remuneration (SDR) was amended to cap the GDPA at £80,000 per practice in any 12-month period. The amount of allowance, in accordance with the new regulations, is 6% of the accumulative gross earnings of the dentists in the practice.

5.3.4 Notable Factors Influencing Current Models of Care and Referral Patterns

At present no charge is made to patients undergoing treatment in the Hospital Orthodontic Service (HOS), which puts it at odds with adults undergoing treatment in the GDS or SpP who have to pay a maximum charge of £384 for treatment under NHS regulations. This is, however, in line with arrangements under which other hospital-based specialities operate, such as Oral and Maxillofacial Surgery.

Patients warranting treatment in the HOS typically have more complex malocclusions than those treated in GDS or SpPs, and their treatment often cannot start until they have finished growing.

The HOS is subject to national secondary care waiting-list targets (e.g. 18 week Referral to Treatment, 9 week outpatient guarantee, but not yet 12 week Treatment Time Guarantee). These are not applicable to primary care Orthodontics, creating an imbalance in possible waiting times.

6.1 Patient Perceptions

Patient interviews were carried out to investigate patient perceptions about both the Hospital Orthodontic Service (HOS) and the Specialist Practitioner Service. Face-to-face patient interviews were carried out in two hospitals and two specialist practices. The patients who participated in the interviews were at different stages of treatment. A questionnaire was used to ensure relevant areas were covered (attached in Appendix 2).

6.1.1 Patients' Profile

In specialist practice 32 patients aged 11-18 and in hospital 24 patients aged 11-40 years participated in the interviews and the interviews lasted between 10 and 15 minutes each.

They appeared to have been referred appropriately in both settings although some patients reported that they had to be proactive and ask the GDP to refer them.

6.1.2 Awareness of Risks

The awareness of risks and benefits differed between the two groups.

Awareness of risks among patients treated in specialist practices seemed low. Some reported that they had received a leaflet at the beginning of treatment and had been advised to maintain good oral hygiene to prevent decay and gum disease. Others reported that they were not made aware of any risks, but when probed reported that the specialist had made them aware of the risk of decalcification which was perceived as the only risk of treatment.

"Yes, they give a leaflet that tells you what you should do and he frequently prompts when we come in for a visit".

"No, I don't think there are any risks".

"They talked about the benefits but they were pretty obvious. There weren't really too many risks, maybe some decay if you weren't brushing properly, so yes that was made clear".

Conversely, the hospital patients were well aware of the risks. Some patients reported that they were made aware of risks by the consultant and had been given DVDs and leaflets. In general, patients reported that they were happy with the information given to them by consultants.

"They went through it thoroughly and I had a DVD, leaflets. I was fully aware what I was going to go through before I went on with it".

“They tell you everything that is happening so it’s perfect”.

6.1.3 Benefits of Orthodontic Treatment

A nice smile and straight teeth were commonly anticipated benefits among Specialist Practice patients. Prior to the treatment some patients were self-conscious about the appearance of their teeth. Some patients reported being bullied at school because of their teeth.

“I was really self-conscious about how my teeth were”.

“She was subject to some bad behaviour from other pupils”.

Patients who were at the completion stage reported that they felt better about the way they looked and felt more confident.

“I feel much more confident smiling. It’s just affected my whole appearance, I just got them off yesterday so I’m very pleased.”

Patients reported that they would wear retainers as advised by specialists to maintain their treatment result.

“I’ll wear it for as long as I need to basically”.

SpPs’ patients reported that they would definitely choose to undergo orthodontic treatment again even if it had been uncomfortable at times. Patients felt that the treatment had been worth the effort.

“I would still definitely do it (again), it’s definitely worth it”.

Patients treated in the HOS anticipated functional and dental health benefits more than aesthetic benefit but it was acknowledged that the aesthetic benefit was very important to them. Patients reported that their quality of life has markedly improved.

“Because my jaw’s fixed now I haven’t had any ulcers or anything like that”.

“My appearance has improved but also for me it will be chewing and talking will also be improved”.

After treatment, patients reported that their self-confidence had increased and that they felt better about themselves. It was perceived that the ability to smile without being self-conscious was thought of as a very important factor among the patients who were interviewed.

PATIENT PERCEPTIONS AND PUBLIC PERCEPTIONS

"I finally have self-confidence. It was the one thing I couldn't change about myself that I really didn't like".

Hospital patients reported that they would wear retainers as advised by consultants to maintain their results. They also reported that they would definitely choose to undergo orthodontic treatment even if it was uncomfortable at times and that the treatment was worth the effort.

6.1.4 Specialist Orthodontic Service

Patients valued the Specialist Orthodontic Service and wanted the service to continue.

"I think it's a valid service. How they keep funding it I don't know but I think the benefit's there because we are a very appearance orientated generation".

When asked how they would have felt if they were not offered treatment under the NHS, some patients stated that they would have accepted the decision but believed that they would not have the same quality of life in terms of good self esteem.

"I would have been very self-conscious. I wouldn't want to smile. I really don't know what I would do without their help. If it wasn't for them I wouldn't have the smile I have now".

Some patients stated that they would have felt disappointed and would have appealed. It was also noted that some parents were prepared to pay for the treatment.

"I would have been disappointed but I think I would have appealed".

"If the NHS hadn't provided the treatment we would have got the treatment regardless, if we had to pay for it or not".

6.1.5 HOS

The HOS was highly valued and was considered an essential service by the patients interviewed. Some patients reported that they were happy to travel long distances to get the treatment at certain hospitals and were reluctant to change hospitals and consultants.

The patients praised the staff and consultants for the quality of treatment in the department. They felt that consultants and staff were very considerate and helpful.

"I would like it to be noted from the moment we discovered she was born with a cleft lip and the problems she has, I have not one complaint about one member of staff between here and the Hospital that's been treating her. I cannot complain".

6.2 Public Perceptions

6.2.1 Focus Groups

Focus groups of Primary 7 pupils were carried out across Scotland to investigate the children's perceptions of orthodontic treatment and factors influencing their desire for orthodontic treatment. A topic guide was used to ensure relevant areas were covered (attached in Appendix 3).

Schools were selected by urban and rural classification as well as Scottish index of multiple deprivation (SIMD). However, some council authorities did not grant permission for the schools in their areas to participate in the focus groups. Table 3 gives details of the schools which participated in Primary 7 focus groups.

Table 3: SIMD and Urban/Rural Classification of Schools which Participated in Primary 7 Focus Groups

Area of School	SIMD Quintile	Urban/Rural Classification
Lothian	5	Large Urban Areas
Lanarkshire	4	Large Urban Areas
Forth Valley	3	Other Urban Areas
Highland	2	Remote Small Towns
Stirling	2	Other Urban Areas
Lanarkshire	1	Other Urban Areas

6.2.2 Profile of Children

Seventy pupils aged 10 to 12 years participated in the focus groups. Each focus group took approximately 60-75 minutes and consisted of 10-12 pupils with a mix of both boys and girls. The discussion ranged from pupils' and their siblings, experiences of orthodontic treatment to their expectations of treatment. Most of the pupils who participated in focus groups wanted or were interested in orthodontic treatment. Some pupils were either under orthodontic treatment or had been assessed for treatment.

Five themes emerged from the analysis of these focus group discussions which are described as follows:

6.2.3 Awareness of Orthodontic Treatment

In general, pupils in all areas were aware of orthodontic treatment but the awareness was limited to those who either had an appointment with an orthodontist or had a family member with experience of orthodontic treatment. Some pupils were aware of new regulations e.g. introduction of IOTN and payment for repairs.

"I had a removable brace on the top and if I lost it or it got broken or damaged or anything it would be £70 to get a new one".

Pupils from affluent areas were generally able to differentiate between a GDP and an orthodontist but the same level of differentiation was not evident among the pupils from deprived areas.

6.2.4 Factors Influencing Orthodontic Treatment

The pupils' desire for orthodontic treatment seemed dependent on three main factors.

1. Treatment need: In general, the children were aware of the irregularities of their teeth and genuinely wanted to undergo treatment to improve the alignment. Children described their teeth as "overlapping", "crowded", "squint" and "bent".

"I want the treatment because my teeth are all over the place and I want to fix it".

Some pupils stated that they had been told by a GDP or orthodontist that they would require orthodontic treatment due to the irregularities of their teeth.

2. Parental influence: Some children were influenced by a parent's experience of having poorly aligned teeth. These children wanted the treatment in order to avoid similar experiences that their parent had experienced.

"My mum didn't have braces because her orthodontist didn't give her the option so now her teeth are all twisted and everything and don't look nice. But my dad had train-tracks and his teeth look much better".

It was also evident that some parents wanted their children to have orthodontic treatment for aesthetic reasons.

“My mum wants me to have it because I’m a dancer and it would make my teeth look nice and straight as well”.

While it was observed that parents did have an influence over children to have treatment it is acknowledged that desire for treatment was not just dependent on parental influence.

3. Fashion: Some children wanted treatment to look fashionable and to have braces because their friends have them. It was noted that children wanted to fit in with one another.

“Some people in my mosque have multicoloured braces and they look quite cool”.

6.2.5 Awareness of Risks and Benefits

The awareness of risks of orthodontic treatment seemed low among the children. They were aware that if their oral hygiene is not maintained during the course of the treatment they may get “spots” on their teeth.

When children were made aware of the risks of treatment e.g. root resorption, decalcification, and of the need to wear retainers, some changed their opinion about having orthodontic treatment as they did not want retainers for life, while others believed that it was worth it as they would have a nice smile.

“I wouldn’t like the retainer for lifelong, that kind of puts me off”.

“I guess it’s OK but it would be kind of annoying having to remember every night that you have to wear it”.

“Well I kind of don’t want them because of the lifelong thing”.

Some children were aware that they may not be able to pronounce some words clearly during the orthodontic treatment. Some stated that their siblings had been teased at school due to orthodontic treatment but on the whole they believed that orthodontic treatment can be fashionable.

6.2.6 Benefits Anticipated

It was evident from the discussions that straight teeth and feeling better about appearance were the anticipated benefits. Some children were self conscious about their appearance and teeth. Some children stated that orthodontic treatment could improve self confidence.

“My friend got them and she says it gives her more confidence to smile in pictures”.

6.2.7 IOTN

The introduction of a scale to limit treatment was discussed in the focus groups and some children were aware of this. On the whole, the children felt that orthodontic treatment should only be given to children who really need it.

"I think it's probably good because some people want them but they don't need them".

"I think it can waste the orthodontist's time if you're giving braces to people who don't actually need them. Orthodontic treatment should only be given to people who are really going to have dental problems".

7.1 Patient Journey

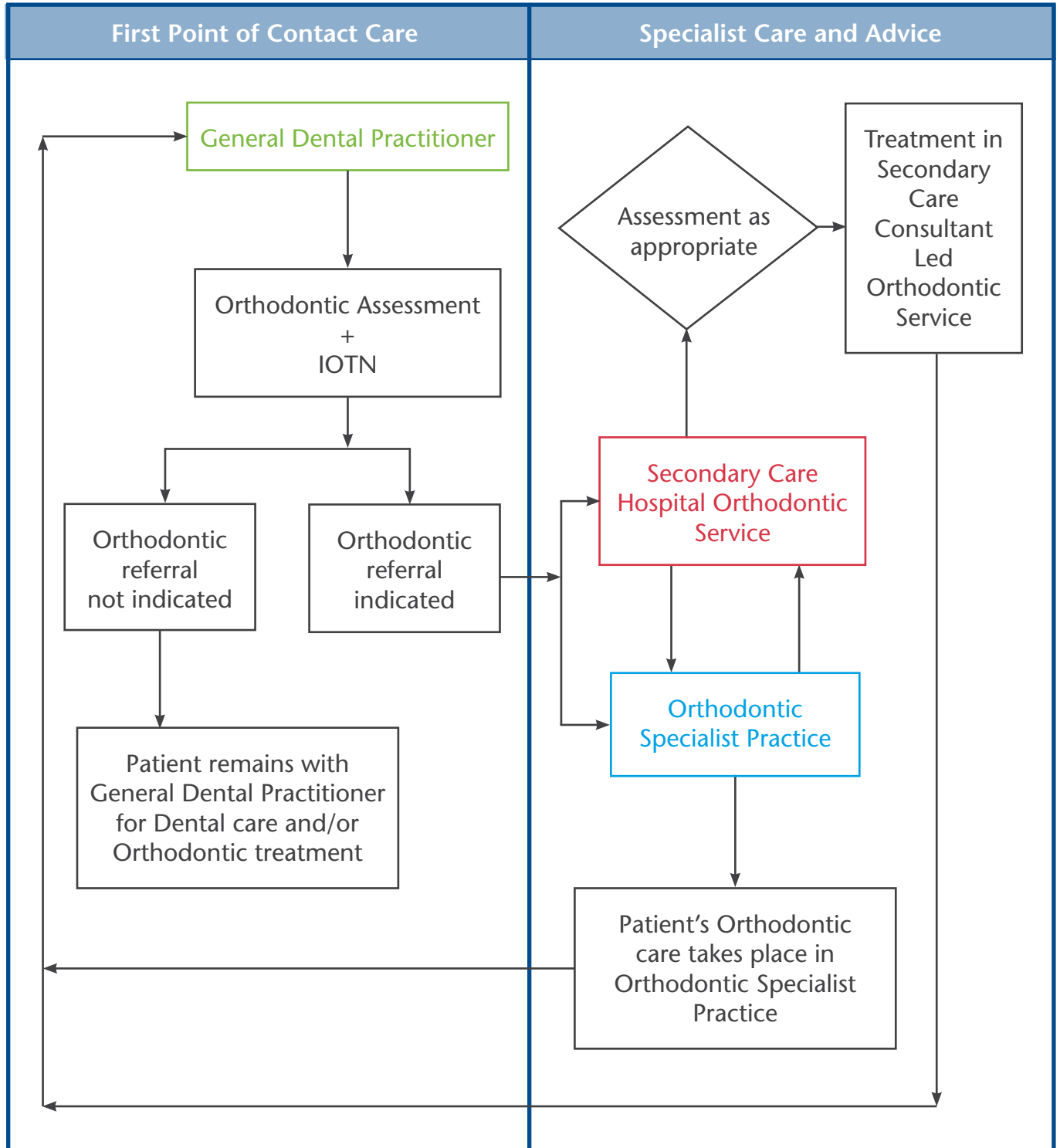
A major factor affecting the demand and the uptake of services is availability of services in a geographical area. An ideal orthodontic service is made up of dental professionals from primary care general practice, specialist practice, PDS and HOS, each with varying skills, interacting with each other in the patient's best interest to provide timely and appropriate treatment. This could be simply an unwritten "understanding", informal clinical network or under the umbrella of a formal Managed Clinical Network, depending on local circumstances. Each dental professional has responsibilities associated with their part in the network.

A range of different models of orthodontic provision exist across Scotland, which includes the Public Dental Service in Orkney, Western Isles and Shetland.

The chart below shows the current patient pathway for orthodontic patients. This will vary slightly from area-to-area reflecting differing availability of services and local protocols.

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Figure 1: Current Patient Pathway



The preceding model shows patients receiving treatment in one of three options - Primary Care GDS, Primary Care SpP or Secondary Care HOS. The patient attends the GDS or PDS in the first instance and can either undergo orthodontic treatment in general practice, or be referred to primary care specialist practice or to secondary care HOS. In the island boards, orthodontic patients are referred to the PDS. In some Health Board areas, referral protocols are set up such that all referrals go to the primary care Specialist Practitioner, who then triages those to be referred on to secondary care.

7.1.1 Model of Care

The clinical responsibilities of each group should be clear but demarcations may differ a little from area to area, depending upon the urban or rural mix of the area or the proximity and availability of specialist orthodontic services.

Orthodontists work, in varying degrees, in clinical networks. These networks vary considerably around Scotland, from informal networks run with considerable input from clinical staff, to a more formal Managed Clinical Network (MCN) arrangement.

The success of MCNs is dependent on the availability and appointment of suitably skilled and motivated staff. There are significant advantages to orthodontic provision using MCNs and networks. Networks can be developed to meet treatment needs locally in areas peripheral from the main centres. Close working relationships need to be established and maintained between different areas, different settings and all clinical staff.

Having had skills enhanced, within the context of service provision, primary care staff can extend their skills to patients in their own practices thus increasing the provision of orthodontics in GDS.

Within the limited resources of the NHS, it is imperative that Health Boards plan services based on need, within the oral health context, rather than demand. GDPs have the responsibility to assess the patient correctly, inform the patient of the risks and benefits of treatment and refer appropriately and at the correct time either to a second gatekeeper in the form of a Specialist Practitioner or directly to the Hospital Service.

7.2 Primary Care Dental Services

Orthodontics in Primary care encompasses GDPs and SpPs (and PDS in the Island Boards).

Orthodontic provision is inconsistent across Primary Care, varying from GDPs who refer all their orthodontic cases for treatment to local specialists or orthodontic consultants, to GDPs who carry

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out varying ranges of treatment themselves. They may or may not ask for guidance in treatment planning from local orthodontic specialist services.

SpPs treat most orthodontic cases but are likely to refer patients requiring multi-disciplinary care, such as Orthognathic surgical cases, Cleft Lip and Palate patients and the more complex restorative cases to consultants in HOS for advice and treatment.

In some areas, the SpPs see all orthodontic referrals and triage for the HOS, referring on those cases whose treatment would be better managed within the Hospital Orthodontic Service.

7.2.1 Orthodontic Provision in the GDS

Fees are paid to GDPs and SpPs for the individual items of treatment they provide to their patients. Practitioners claim in a “fee-per-item” system, with orthodontic treatments falling into item categories 32, 55(e) and 55(f). The list of these treatments is detailed in Appendix 1.

Orthodontic provision in the GDS in Scotland has risen steadily in the last five years, with costs rising from £13 million in 2008 to a peak of £16 million in 2012, falling slightly to £15.8 million in 2013 as shown in Table 4. There could be many reasons for the drop including recent changes to remuneration for orthodontic repairs in the SDR, for example the removal of the fee for fixed appliance repairs. These costs are currently being borne by the practitioners.

Table 4: Orthodontic General Dental Service Spend

Year	Number of Claims (item 32)	Cost
2008	132,890	13,207,978
2009	142,791	14,708,510
2010	140,340	14,420,512
2011	143,000	14,635,266
2012	151,983	16,037,660
2013	140,000	15,844,321
2014	133,985	15,578,540

Source: ISD, MIDAS

During 2013/14, the cost per head for dental treatment of child population ranged from £70 in NHS Greater Glasgow & Clyde and NHS Lothian to £42 in NHS Western Isles; and per head of adult population from £57 in NHS Greater Glasgow & Clyde to £25 in NHS Orkney. It should be noted, however, that the population and service profiles in some NHS Board areas are such that the Public Dental Service (PDS) has hitherto played a greater role in treating children than the GDS.

There were nearly 4.3 million courses of dental treatment carried out across non-salaried and salaried GDS during 2012/13, an increase of 4.4% from the year before. Roughly 88% of the courses of treatment carried out in 2012/13 were for adults and 12% for children as shown in the Table 5.

Of the nearly 4.4 million courses of treatment carried out in 2013/14, 2.6% were for orthodontic treatment. Children accounted for 93.3% of orthodontic courses of treatment.

Table 5: Number of GDS Orthodontic Courses of Treatment; 2008/09 to 2012/13

Financial year	Total Courses of Orthodontic Treatment	Child Courses of Orthodontic Treatment	Adult Courses of Orthodontic Treatment
2008/09	133,651	128,625	5,026
2009/10	136,578	130,651	5,927
2010/11	138,035	131,399	6,636
2011/12	143,076	134,543	8,533
2012/13	122,734	115,061	7,673
2013/14	115,172	107,522	7,650

Source: ISD, MIDAS

1. A course of orthodontic treatment is defined as at least one SDR treatment being claimed on a GP17(O) form submitted by a dentist.
2. Children are defined as under 18 years and adults as 18 years and over.

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7.2.2 GDPs

GDPs are required to recognise developing orthodontic problems and the correct time to address them, which is usually in the late deciduous or early permanent dentition stage. They should be able to provide simple interceptive treatments, such as timely extractions, grinding interfering cusps or providing simple removable appliances. This could be under the guidance of a specialist where the GDP is not fully confident to diagnose and plan treatment. They should also be able to reassure parents on normal stages of development of the dentition and to advise on orthodontic referral.

It is expected that they communicate to patients and parents the risks of orthodontic treatment, and that these can outweigh the benefits, especially if the treatment is expected to be unstable, the patient's oral health is poor, or the patient is disinterested. They should endeavour only to refer for orthodontics when oral hygiene is good and there has been no caries activity for at least 12 months.

During treatment, GDPs should be aware that patients are more at risk of developing areas of decalcification, caries or gingival problems due to extra plaque accumulation, difficulty cleaning and the prolonged retention of dietary sugars around the appliances. They should also be prepared to offer additional help with oral hygiene and dietary advice.

Although orthodontic providers supervise patients in the initial stages of retention, the increasing trend to lifelong retention means that it is inevitable that patients will be discharged back to their GDPs whilst still in retention. Dentists may be asked to review, and where necessary, repair or replace retainers, only referring back to the orthodontist if they encounter special problems.

7.2.3 GDPs with an Interest in Orthodontics

GDPs with special interest are not recognised in Scotland. However, there are GDPs who carry out orthodontics in their general practice. There are potential risks for a GDP working in isolation having had little or no formal orthodontic training or local support. However, GDPs can have a valuable role when working within their competence and, particularly where they can be supported by a local Consultant or Specialist Practitioner for treatment planning, by offering simple treatments and treatment review, especially in remote and rural areas, where access to specialist orthodontic treatment may be limited.

7.2.4 Specialist Practitioners (SpPs)

SpPs have undergone formal training in orthodontics and have achieved the Membership in orthodontics (or equivalent) from one of the Royal Colleges. They are competent to offer

treatment, and act as a secondary gatekeeper, recognising when cases should be referred on to the Hospital Service for advice or treatment.

There is some degree of overlap between the specialist practices and secondary care, and in some areas where Hospital Orthodontic Services are heavily subscribed, or where geographical access may be difficult for some patients, SpPs can take on some of the more complex cases with advice offered by the consultant when required.

7.3 GDP and SpP Perceptions

For this Needs Assessment, the GDPs' and SpPs' perceptions were sought.

A survey (attached in Appendix 4) was sent to every GDP who had an active nhs.net email account and 17% of GDPs responded (their response rate and HB are shown in the Appendix 5).

Semi-structured interviews were conducted to investigate the perceptions of a representative sample of SpPs. Ten SpPs were interviewed representing both urban and rural areas of Scotland. The topic guide was not a rigid set of questions, but contained a number of topics (which is attached in the Appendix 6).

The GDPs had variable experience ranging from Continuous Professional Development (CPD) courses, ongoing experience, Section 63 courses as well as formal qualifications as shown in Table 6.

Table 6: GDPs Qualifications

What is the Highest Level of Training in Orthodontics You Have Achieved		
Answer Options	Response Percent	Response Count
Undergraduate training	55.4%	118
Ongoing work experience	8.5%	18
CPD courses	11.3%	24
Section 63 courses	22.5%	48
MSc	2.3%	5
		213

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Of these, 31% indicated that they provide orthodontic treatment. There was a relationship between those GDPs who provided orthodontic treatment and their location, with those in remote areas more likely to undertake orthodontic treatment in their own practices.

The SpPs reported that over 95% of their patients are children undergoing NHS treatment. They reported that the average duration for a course of orthodontic treatment is around 18-24 months, but acknowledged that it might vary depending upon the complexity of the treatment.

7.3.1 Referral and Treatment Planning

The majority of sampled GDPs indicated that they refer orthodontic patients on to both SpPs and the Hospital Service.

The SpPs interviewed agreed that the majority of their referrals come from GDPs but acknowledged that they also receive some referrals from Public Dental Service (PDS) and the Hospital Dental Service. In general, the SpPs were happy with the current referral model and felt that GDPs should be free to refer patients directly to the orthodontist of their choice.

"I think GDPs should refer to whoever they feel is appropriate".

However, some specialists in urban areas felt that a centralised referral system would be practical due to the presence of large number of specialist practices in one area.

7.3.2 Risks and Benefits

Over 79% of GDPs reported that they discuss possible risks and benefits with patients before referral. A large number (88%) indicated that they undertake an oral health risk assessment before referral with almost 63% indicating that they assess caries status, oral hygiene and take x-rays.

The majority of SpPs also reported that they discuss risks and benefits with the patients, normally during the treatment planning and consent visit. They also discuss the different orthodontic treatment options before starting the treatment with patient and parent/guardian.

The SpPs agreed that the most important risks of orthodontic treatment are possible decalcification, root resorption and relapse. They cited that broken appliances and failure to comply with retainer wear were also risks to a good long-term outcome.

The SpPs reported that they believed the main benefit of orthodontic treatment to be aesthetic which can have positive psychosocial implications, but they also felt there are dental health benefits as it is easier to maintain good oral hygiene after treatment. They thought that the

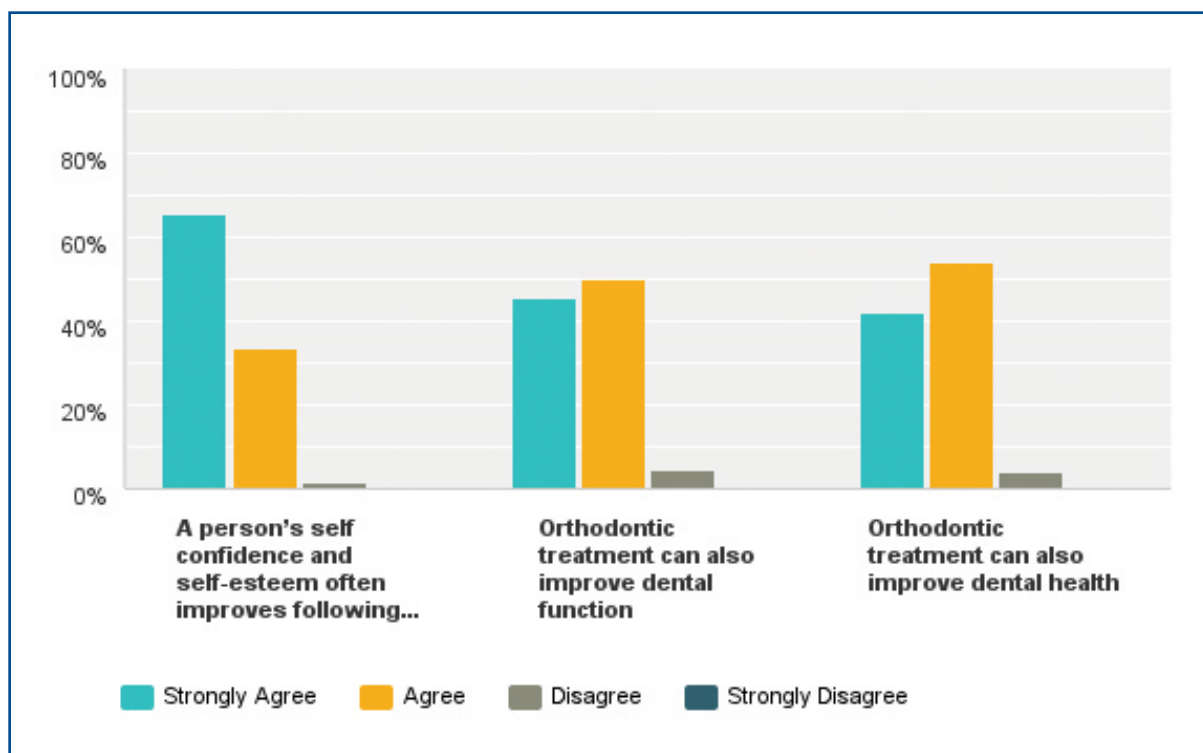
psychosocial benefits of orthodontic treatment should not be taken lightly as these benefits can have a significant impact on the quality of life of an individual. However, the IOTN assessment which is currently the index for acceptance for treatment under GDS regulations is primarily based on the dental health benefits of treatment.

They agreed that the main motivation for some patients to seek orthodontic treatment is to improve the appearance of their teeth and smile, but acknowledge that some patients ask for treatment in order to help improve function for example chewing and cleaning.

“Usually the greatest motivation would be aesthetic improvement to improve their looks but also a functional improvement as well”.

Figure 2 below shows the GDPs response to the question on orthodontic treatment benefits. The majority of GDPs agreed that orthodontic treatment improves a person’s self-confidence and self-esteem, in agreement with the SpPs, but they also indicated that treatment can improve dental function and dental health.

Figure 2: Orthodontic Treatment Benefits



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In general, the SpPs agreed that GDPs with little or no orthodontic training are not best placed to carry out orthodontic treatment. The SpPs reported that they generally do not write treatment plans for GDPs and neither do they usually receive requests of this nature. However, of those GDPs providing orthodontic treatment in their practices, almost 30% indicated that they always obtain a treatment plan from a local consultant or specialist practitioner, a further 58% indicating that they sometimes do, but with the remaining 12% working to their own treatment plans.

Unsurprisingly, the SpPs generally referred cases requiring multidisciplinary care and surgical input to the HOS e.g. severe hypodontia, cleft, orthognathic cases etc. In some boards where there is only one specialist practice the hospital service had agreed a referral protocol with the local GDPs.

7.3.3 Adult Patients

The SpPs' view on adult orthodontic treatment was variable, with some SpPs treating adults under NHS regulations, while others were more reluctant but said they felt an obligation to do so.

"I don't do much adult treatment under the National Health Service, although my hand has been forced recently to do that".

Overall, they agreed that children made up the majority of their lists. The SpPs reported that often adult patients are not suitable for orthodontic treatment because of underlying periodontal conditions, poor oral hygiene or missing teeth, making adult patients more complicated in general. The SDR narrative does not appear to support adult orthodontic treatment and it is generally difficult to get funding for adult patients.

Some SpPs felt that adult orthodontic treatment should not be funded by NHS.

"Within the SDR narrative when the narrative was created, it was created as an adjunct to a general dentist providing orthodontic treatment the same as they provide dentures or fillings or crowns. And it was always aimed at a child population".

"I don't agree that adults necessarily should be entitled to National Health Service treatment because, in many respects, they've missed the boat. Should they pay for it? Yeah, I think they should".

7.3.4 IOTN

Only 38% of GDPs indicated that they use IOTN to assess patients. However, it is not mandatory for GDPs to use IOTN when referring to specialist practice or the hospital service. It was perceived from the comments that GDPs were not confident using IOTN.

“I undertake IOTN assessment as much as knowledge allows”.

“The Board still doesn’t give me this training”.

The GDPs reported that the introduction of IOTN had had a variable impact on their practice. Some GDPs reported that its introduction had been beneficial and they don’t refer as many cases to specialist practice or hospital as before. Others disliked that the fact that “borderline cases” do not qualify for treatment under the NHS. GDPs agreed that they are spending more time explaining to patients why they may not get their treatment under the NHS. It was reported that the number of appeals have increased and some patients are now opting to seek private orthodontic treatment.

The SpPs view on the impact of the introduction of IOTN was also variable. It is understood that patients with an IOTN DHC grade of 3 and an IOTN AC grade of less than 6 will not normally receive funding. Some SpPs reported that certain patients do not now qualify for treatment due to a low IOTN score, while others felt that there had been no significant change. The SpPs agreed that the actual referral numbers had not significantly changed but now fewer of the referrals progress into treatment.

“It reduced probably by a third the number of patients that we could treat. So there’s obviously a sort of financial impact of that as well”.

“It’s not impacted greatly because I was already applying IOTN when I opened the practice up”.

Some SpPs felt that they are now undertaking more complex treatment, which they would not have undertaken before, in order to compensate for fewer patients. Some SpPs also reported that they are seeing an increase in number of private patients but others had not seen any increase.

The SpPs reported that it has become easier for them to explain to the patients why they don’t qualify for treatment since the introduction of IOTN but felt that its implementation at the Scottish Dental Practice Board is inconsistent.

“IOTN has helped because it has allowed us to speak more frankly with some of the patients as to why they aren’t entitled National Health Service Orthodontics. I have to say, actually, I think the ground rules for IOTN seem to be inconsistent at the Dental Practice Board”.

7.3.5 Prior Approval

The GDPs who are providing orthodontic treatment indicated that prior approval had an impact on their practice, reporting that the delay between initial referral and receiving approval has significantly increased.

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There was also agreement among the SpPs that the prior approval system is currently very slow. They reported that in the past, prior approval used to take four weeks but more recently the average turnaround time for prior approval has been eight to twelve weeks.

The SpPs reported that delay in getting prior approval has a negative impact on some patients. They have to prioritise certain patients based on the treatment required and the optimum age to treat the patient. The SpPs stated that they do inform the patients regarding the delays at PSD.

The SpPs reported that the high need cases (IOTN DHC grade 5), previously agreed by PSD to be “fast-tracked”, also face significant delays of up to twelve weeks.

7.3.6 Retention

Generally, SpPs discharge patients back to their GDP after 12 months of retainer supervision. The SpPs agreed that retention is an essential part of orthodontic treatment and in many cases retention may be for life. They agreed that long term treatment relapse is more likely to occur if there is failure of compliance with retention.

Following the initial period, there is no funding for supervision of retention or replacement of retainers under the current statement of Dental Remuneration. Most GDPs (70%) indicated that they would be prepared to replace a retainer if they were remunerated appropriately. Some GDPs stated that they are not confident managing supervision and replacement of retainers and suggested a need for training.

The SpPs reported that they are making patients aware that under NHS regulations they will only receive funding for one retainer and they will be charged for replacements. Some believed that the NHS should not fund replacements.

“I only do bonded retainers which are like a permanent retainer. And the reason I do that is to try and minimise relapse for the long term”.

The SpPs stated that they do treat some relapse cases. They also reported that GDPs do re-refer patients with relapse, but acknowledged that these patients are usually treated privately.

7.3.7 Payment for Repairs

There was general agreement among the SpPs that cessation of payment for repairs has impacted upon them financially. They reported that the removal of payments for repairs was introduced unexpectedly and they were neither warned nor consulted. Some SpPs felt that that it was akin to being asked to treat patients free.

“We are asked to treat patients under NHS but the NHS is not going to refund us”.

7.3.8 Interaction with Practitioner Services Division (PSD)

The SpPs’ views on their interactions with PSD were variable. Some SpPs reported that interaction has been reasonably amicable whilst others felt that their relationship has become strained. There was general agreement among the SpPs interviewed that they can receive poor correspondence from PSD.

“There is a condescending tone to letters and correspondence”.

The SpPs felt that the communication has been a major problem with PSD and a proper communication plan would be of help.

“For instance, it was decided that study models had to be trimmed and marked by hand. Things like that would have been simple enough to communicate, but the way it was handled was that the models were returned, ‘not properly marked’, and some came back broken. So the NHS has to pay for new models to be taken, the practices had to get patients back in to get impressions done. It could all have been avoided with a phone call”.

It was perceived that the SpPs felt that they were being watched by PSD and other authorities. The SpPs stated that the morale among the Specialists Group was low.

They were concerned that currently, specialist orthodontists have no representation at Scottish Dental Practice Board (SDPB) level and no direct formal negotiating arrangement with the Scottish Government, Department of Health or the PSD. They believe that this lack of formal representations has led to abrupt changes in the SDR by PSD and the SDPB.

7.4 PSD Perceptions

Semi-structured interviews were conducted to investigate the perceptions of the Orthodontic Advisors at PSD regarding the specialist orthodontic service in particular. Three advisors were interviewed. The topic guide was not a rigid set of questions, but contained a number of items and is attached in the Appendix 7.

7.4.1 Referral Triage

The Orthodontic Advisors reported that they have a system of triaging referrals. The referrals were first separated by IOTN grades and then each Orthodontic Dental Advisor inspects five referrals

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of Grade 5 and Grade 4. It was stated that all Grade 3 referrals were inspected by Dental Advisors for both the Dental Health and Aesthetic Components of IOTN.

7.4.2 Appeals

The Advisors confirmed that in 2012/13 the numbers of appeals had increased. They suspected that GDPs or SpPs were possibly advising their patients to appeal. However, patients do have the right to appeal and practitioners are obliged to remind them of their rights.

The majority of the patients appear to accept the decision made by PSD concerning their treatment, with only a small proportion raising an appeal. PSD stated that in general, appeals were lodged by parents of children whose malocclusions were borderline (just below IOTN 3.6) but that their original decision to decline funding was upheld in over 90% of cases.

They suggested that the appeal panel should consist of a specialist and a lay person. To reduce conflict of interest PSD insisted that the specialist recruited to the panel should not work or reside in the local area. PSD also stated that specialists sometimes refer patients to the hospital for second opinion when the treatment has been declined by PSD.

7.4.3 Prior Approval

PSD reported that in 2012/13 they have received approximately 22,700 cases from specialists for approval. They stated that a proportion of these cases were below IOTN 3.6 and so did not normally qualify for treatment under the NHS. PSD reported that average turnaround time for 50% of cases is around ten days but acknowledged that the other 50% of cases may take seven to eight weeks. They reported that they were making changes to expedite the process. They did state, however, that the delay can be due to the lack of information in the letters and that the quality of letters from practitioners was variable.

7.4.4 IOTN

PSD stated that IOTN is used as an index for assessing cases for funding under the GDS. They reported that they had not noticed a change in the volume of referrals since the introduction of IOTN. However, some practitioners still send prior approval forms with IOTN grades below 3.6, possibly due to the fact that specialists find it difficult to inform the patients that they do not qualify for treatment under the NHS.

However, they also reported that sometimes they do approve cases that are graded below 3.6 which have a potential dental health benefit (e.g. to prevent deterioration of dentition). In these cases PSD stated that they use guidance and also conduct risk versus benefit analysis.

7.4.5 Communication with Specialists

The orthodontic Dental Advisors reported that they meet with a group of SpPs two to three times a year to discuss orthodontic issues. They reported that they communicate by letter, e-mail, and telephone but confirmed that their usual way is by letter.

“It is sometimes not feasible to discuss a case over the phone or via e-mail, especially when specialists have busy appointment lists”.

It was acknowledged that communication is a two way process and specialists should also make an effort to communicate effectively.

7.5 Secondary Care – The Hospital Orthodontic Service (HOS)

The HOS is led by Consultant Orthodontists, who typically treat, or supervise treatment for patients in the following categories:

1. Patients with Cleft Lip and/or Palate or other craniofacial anomalies.
2. Patients whose malocclusions are based on marked skeletal disproportions and are likely to require Orthognathic Surgery to correct their malocclusion.
3. Patients requiring multidisciplinary planning involving Restorative Dentistry or Paediatric Dentistry, e.g. treatments complicated by hypodontia or trauma.
4. Patients with management difficulties, such as those with Special Needs/Learning Difficulties, or complex Medical Histories.
5. Some less complex cases may also be taken on for training purposes, or where other provision in that area is limited or lacking.

They may also offer advice on mixed dentition management or interceptive orthodontic measures to alleviate a developing malocclusion, second opinions or treatment planning for general dentists and SpPs, on request either from the practitioner or PSD. They also sometimes accept transfer cases, particularly from other hospital orthodontic departments.

Most of the patients in the HOS will have significant need for treatment with high complexity and will have IOTN DHC grades of 4 or 5, although there may also be a small number of milder cases amongst those accepted for training purposes.

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The HOS is well placed to liaise with consultants and therapists in other disciplines, such as Oral and Maxillofacial Surgery, Restorative Dentistry, Paediatric Dentistry, Plastic Surgery, Cleft and ENT Surgery, Paediatric Medicine, Speech and Language Therapy, Audiology, specialist nurses and other members of the multi-disciplinary teams.

Consultants also have a key role in undergraduate and postgraduate teaching and examining for universities and Royal Colleges.

The HOS is thus fundamental in teaching and training dental students, junior dentists and future specialists as well as Orthodontic Therapists. Consultants also offer training locally to GDPs in the form of Section 63 Courses.

7.5.1 Orthodontic Provision in HOS

Table 7: Total Patient Attendances

NHS Board of Treatment	2010	2011	2012	2013	2014
Ayrshire and Arran	10283	10442	10366	10324	
Borders	1540	875	1020	1243	
Dumfries and Galloway	6547	6097	5170	4606	
Fife	11784	12001	11494	11403	
Forth Valley	4593	11715	11611	11248	8463
Grampian		6090	8599	8413	7906
Greater Glasgow and Clyde	-	18223	20459	19659	18109
Highland	4380		5692	7098	
Lanarkshire	13589	13000	13152	12062	
Lothian	19347	17618	15434		
Tayside	8438	9978	11098	12347	
Western Isles	303	434	249	192	

Source: Individual health boards

Table 8: New Patient Attendances

NHS Board of Treatment	2010	2011	2012	2013	2014
Ayrshire and Arran	923	901	860	851	
Borders	249	214	166	150	
Dumfries and Galloway	479	487	465	473	
Fife	1749	1662	1449	1496	
Forth Valley	299	801	511	494	515
Grampian		672	775	725	734
Greater Glasgow and Clyde		2018	2190	1570	1624
Highland	705		714	840	
Lanarkshire	1172	1045	778	674	
Lothian	2190	2029	1768		
Tayside	808	708	661	907	
Western Isles	94	193	79	40	

Source: Individual health boards

NB; Not all 2014 data were available at time of printing

Tables 7 and 8 above show the total patient attendances and the new patient attendances in secondary care from 2010 to 2014. Each patient has, on average, a minimum of eight appointments throughout their course of orthodontic treatment, but can have many more. There has not been a noticeable increase in new patient attendances in the HOS since the change in regulations in 2011.

7.5.2 Workforce in the HOS

The current hospital-based orthodontic workforce includes;

- NHS Consultants
- Academic Consultants/Teaching Consultants
- Staff Grade Dentists, Speciality Doctors or Associate Specialists
- Speciality Training Registrars (StRs) and Post CCST trainees (previously FTTAs)
- Senior House Officers/DF2s/CT2s
- Orthodontic Therapists

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7.5.3 Consultants

Consultants have typically undergone a further 2-3 years post-CCST training in treatment of multidisciplinary and other complex cases after attaining their Membership in Orthodontics. They offer an orthodontic service for the more complex groups of orthodontic patients described in the previous chapter. They should also have some availability to support GDPs and SpPs in treatment planning and during treatment, or where a second opinion is required. In addition, they are also responsible for contributing to undergraduate, postgraduate and therapist training, including planning and overseeing treatment carried out by trainees. Consultants also have management responsibility within the department and may additionally be involved in research and development.

7.5.4 Staff Grades/Speciality Dentist or Associate Specialists

Staff Grade, Speciality Dentists or Associate Specialists work within an orthodontic department to provide specialist treatment usually following assessment and treatment planning by the Consultant. They are considered a valuable member of the team and can increase the capacity of the unit.

7.5.5 Specialty Registrars (StRs) and Post-CCST Development Posts

There are two levels of training registrars: Pre- and post- CCST (Certificate of Completion of Specialist Training). These trainees are fully qualified dentists who are undergoing specialist training, either at basic speciality level to gain access to the GDC Specialist Register in Orthodontics, or in the case of Post-CCST Registrars, qualified orthodontists undergoing further training, after attainment of their Membership in Orthodontics, in complex and multidisciplinary treatments to attain their Intercollegiate Speciality Fellowship and become NHS Consultants or senior clinical academics in the Hospital or University Services.

7.5.6 Pre-specialist Trainees:

Senior House Officer (SHO) and Dental Foundation or Core Trainees (DF2s/CT2s)
SHOs and DF2s/CT2s attend orthodontic Consultants' clinics and may undertake some basic orthodontic work as part of their pre-specialist training.

7.5.7 Orthodontic Therapists (OTs)

OTs have been trained in Scotland since 2006. They work under supervision as per General Dental Council (GDC) regulations. OTs can greatly increase the capacity of a unit but require support from the specialist or Consultant as they have a limited scope of practice and cannot make decisions on treatment planning or progress of treatment.

The clinical remit of OTs includes taking impressions, bonding brackets, de-bonding appliances, making certain adjustments to fixed and removable appliances and emergency care. OTs adhere strictly to the prescription given by the Consultant or SpP which can be verbal or written.

They can also obtain consent from patients and are involved in giving advice and information on appliance and oral care.

Orthodontic therapists in the hospital setting typically see approximately 7-8 patients per session (these can be complex and more demanding cases). However, an orthodontic therapist based in a specialist practice can see up to 20 patients per session which are typically routine cases. In some hospital departments the orthodontic therapist can help to absorb the majority of patients who are still under treatment after the StR has moved on. The current orthodontic workforce in the hospital service is summarised in the following table.

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Table 9: Current Hospital Orthodontic Workforce

	NHS Consultants		Academic Consultants		Specialty Registrar (StR)		Senior House Officer (SHO)		Staff Grade		Specialty Dentists		Therapists	
	WTE	Head Count	WTE	Head Count	WTE	Head Count	WTE	Head Count	WTE	Head Count	WTE	Head Count	WTE	Head Count
Ayrshire and Arran	2.7	3	-	-	0.3	1	-	-	-	-	-	-	2	2
Borders	0.7	1	-	-	-	-	-	-	-	-	-	-	-	-
Dumfries	1	1	-	-	-	-	0.2	1	1	1	1	1	-	-
Fife	1	1	-	-	0.4	2	-	-	1	1	1	1	1	1
Forth Valley	1.8	2	-	-	0.2	1	-	-	0.9	1	-	-	1	1
Greater Glasgow and Clyde	5.5	6	1.2	2	2	2	1	5	-	-	1.2	3	1	1
Grampian	3.3	3	0	0	0.2	1	0.3	3	0.5	1	-	-	0.2	1
Highland	1.2	1	-	-	-	-	-	-	-	-	0.6	2	2	2
Lanarkshire	2.6	3	-	-	0.4	2	0.8	2	-	-	3	1.4	-	-
Lothian	2.9	5	0	0	1.0	1.0	0.0	0.0	0.0	0.0	1	0.1	1	0.3
Tayside	2.2	2	1	2	6	6	0.1	1	1	0.6	1	0.6	0	0

Table 9 above shows the orthodontic workforce in Scotland at the end of 2014. There are variations from year to year with staff moving and variations in the numbers of trainees. Broadly speaking, from the numbers in the HOS service, together with the numbers in SpPs, it can be concluded that overall, Scotland has adequate workforce numbers to meet the orthodontic treatment need, but there are some marked regional inequalities within this balance leading to increased waiting times for treatment in some areas.

7.6 Consultant Perceptions

Semi-structured interviews were conducted to investigate the perceptions of a representative sample of consultants in orthodontics. Fourteen consultants were interviewed from thirteen hospital locations, which included District General Hospitals and Dental Hospitals. A topic guide was used to interview consultants to ensure relevant areas were covered (attached in Appendix 8).

7.6.1 Orthodontic Service

There was agreement among the consultants that patients were referred appropriately and often required multidisciplinary care. In some units, less complex cases were also accepted for teaching and training purposes.

They reported that they had not noticed a change in the volume of referrals after the introduction of IOTN in 2011.

7.6.2 Waiting List

There was general agreement among the consultants that they were able to meet the first appointment target time for the majority of patients. However, some departments were unable to meet the 18 week Referral to Treatment (RTT) target.

“New patients are seen but I would say the majority of our patients do not start treatment within 18 weeks”.

The following comment is from a consultant in a District General Hospital;

“What we really, really need is just to have somebody on the Restorative or Paediatric Dentistry side, preferably both. But that’s the problem. We are liaising with the Dental Hospital [for these specialists] and that’s not ideal”.

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The Consultants felt it was difficult to meet the 18 week target for complex or multidisciplinary cases due to:

- The first clinic appointment is not long enough to gather all the information required to treat a complex case.
- Joint clinics are difficult to organise in time to meet RTT e.g. orthognathic clinic is held only once a month in some areas.
- There is a significant problem across the country concerning restorative input, some consultants reported that they refer patients to Dental Hospitals for restorative advice, which has significant impact on RTT.
- Many departments' capacities are inadequate to safely take on new patients at the rate at which they are being referred. Some Boards addressed this issue by recruiting orthodontic therapists to increase capacity.

7.6.3 Risks and Benefits

The consultants agreed that the most important risks of treatment were decalcification or caries, root resorption, loss of gingival attachment or loss of vitality. They also reported that broken appliances, failure to complete treatment and relapse posed risks to securing a good outcome. The consultants generally agreed that a significant benefit of treatment is improvement in aesthetics which can have substantial psychosocial benefits, but there are also functional and oral health benefits for those with complex problems.

7.6.4 Retention and Post Treatment Change

The consultants reported that they advise patients that retention may be for life, but concurred the vast majority of patients do not comply. Some consultants monitor retention for two years, others for one year. The GDP is then asked to monitor the retention. All acknowledged that, since there is no fee in the GDS for long-term retention, the patient may be charged for any replacement retainers.

Consultants reported that they do not routinely treat patients for relapse, but reported that relapse has become a problem and these cases are increasing in numbers.

"Probably the biggest area of problem I see are an increasing number of patients coming back saying 'I haven't worn my retainers and I've got some relapse'".

7.6.5 Adult Orthodontic Patients

Consultants felt that many of the orthodontic treatments offered within the HOS do not normally commence until late adolescence, from around the age of 16 at the earliest. Certain secondary care treatments such as provision of implants to replace missing teeth or osteotomies are not indicated until growth has ceased. Orthodontics is therefore often planned to finish around that age to facilitate a smooth progression from one phase of treatment to the next. Such orthodontic treatment is usually carried out within the HOS and is free at the point of delivery, as are the surgical or restorative components also offered within the Hospital Service.

However, recent years have seen an increase in numbers of adult patients presenting to HOS for routine orthodontics, who may not have had the opportunity for such treatment at the usual age, who might have declined it as a child, or who may have had orthodontics, perhaps with a removable appliance, that was either unsatisfactory or has relapsed. These patients are often referred to the HOS even when their treatment does not require inter-disciplinary management.

There is no physiological reason for withholding treatment from adults, and to do so would be contrary to the principles of equal opportunities, but treatment of adults can sometimes be complex, due to teeth being heavily restored, or having periodontal conditions, or where teeth have already been extracted. Furthermore, tooth movement is typically slower than in a child or adolescent. To treat such adults towards ideal standards is often difficult and lengthy, and sometimes an informed decision is taken either to accept the current occlusion or a compromise treatment, e.g. perhaps accepting a small increase in overjet to allow anterior alignment to be re-established without further extractions. However, at present such treatments may not be supported in the GDS.

SpPs are often not keen to treat adults unless on a private basis, even though they may have IOTN grades of 3.6 or higher. Furthermore, when treated in the GDS, adult patients are subject to the maximum GDS charge, so some referrals to the HOS are for economic reasons.

It is reasonable for adults to be considered for orthodontic treatment, and some consideration that their needs may be different from those of children and adolescents may be appropriate. However it is not reasonable for them to be referred to the HOS, unless they do require the kinds of special management described previously as being the remit of the HOS. Otherwise, with the current increases in adult demand, and without considerable further resources, the HOS is likely to become overloaded to the extent that it cannot meet its remit to treat complex multidisciplinary cases in a timely manner.

7.6.6 Clinical Network

There was general agreement among the consultants that Clinical Networks (CNs) are beneficial. Some consultants reported that they are already part of CNs.

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"I think the Managed Clinical Network (MCN) is great although the board offers no resources to support it whatsoever so it's done entirely on good will and it involves everybody's own time to make it happen."

7.6.7 Dentists with an Extended Role in Orthodontics

The consultants agreed that GDPs with an extended role or dentists with interest in orthodontics are not generally required due to the presence of the large number of SpPs. However, they agreed that, with proper supervision, remote and rural areas can benefit from dentists with an extended role or interest in orthodontics.

7.6.8 Specialists Practitioners (SpPs)

The consultants agreed that the specialist practitioner service has benefited the HOS, and that the HOS is able to concentrate on providing treatment for the complex and multidisciplinary cases. Consultants in some areas reported that their waiting lists had in some areas reduced due to the specialist service.

Some consultants felt that SpPs should only refer cases requiring multidisciplinary care and surgical input. They expected SpPs to undertake all routine and some complex orthodontic cases.

Most of the consultants reported that they don't make direct referrals to specialist practices but refer more routine patients back to the GDP with advice for the onward re-referral to a local specialist practitioner. Some consultants reported that a number of specialist practices were recruiting non-specialists. There were concerns that patients may not be informed about the qualifications of some of these clinicians.

Some consultants reported that the large numbers of specialists practices concentrated in urban areas do not facilitate equity of access nationally.

7.6.9 Orthodontic Therapists (OTs)

There were differences of opinion concerning training and recruitment of orthodontic therapists. Some consultants valued the contribution made by OTs and used them to manage waiting lists. Others were unhappy about the number of OTs trained by NHS Education for Scotland (NES) and felt that this reduces opportunities available for specialist trainees.

Some consultants suggested a review of training numbers of OTs. It was reported by NES that trainee OTs are supported by organisations who take the responsibility of paying the fees and supervising the trainee.

"I have no problem with therapists per se but we need to get the numbers right so that we're training the appropriate number of specialists and the appropriate number of therapists".

7.6.10 Appeals

There has been an increase in the number of cases sent to consultants for second opinions/appeals against Dental Practice Board decisions to decline treatment. They agreed that these patients should ideally essentially go to an Appeals Panel. Some letters sent by both GDPs and the Practice Board were of poor quality. In some cases, it was not possible to infer from the referral letter if the patient was being sent for second opinion or if the patient was actively appealing.

It was reported that the time taken to manage these second opinions and appeals can be considerable and the consultants felt they were not best placed to manage it. They reported that this process is laborious and has significant impact on their time and capacity to see other patients in a timely manner.

7.6.11 Administration

The consultants reported that the centralised booking system used at some hospitals has caused significant problems. This seemed to be due to a lack of knowledge of the staff who are making appointments and lack of awareness of facilities and other relevant aspects of clinical availability e.g. radiography department opening times.

"The front desk doesn't realise if it is debond or a surgical case and they book it into the wrong time-slot or the wrong time of the day because x-ray is closed and it just turns into a mess".

They felt that management wasn't engaging with them and has a fundamental lack of understanding about the service.

"Allow the consultants to have a proper say, so rather than the managers being completely fixated on meeting targets".

"It would make a big difference if the managers took time to understand what the service is trying to provide.they actually don't know what we do".

7.7 Orthodontic Therapist Perceptions

Face-to-face interviews with orthodontic therapists were carried out in three hospitals and one specialist practice. A topic guide was used to ensure relevant areas were covered (attached in Appendix 9).

A total of seven orthodontic therapists were interviewed.

7.7.1 Job Description/Remuneration

The OTs reported that they always have on-site support from a consultant or SpP and have a contingency plan in place for unexpected absences.

They generally have designated surgeries, and generally have nursing support.

It was clear that there is no national job profile or matching job profile for orthodontic therapists in the Agenda for Change system in Scotland. The job description of the orthodontic therapists is not consistent across Scottish Health Boards, with some Boards having no job description for the OTs.

The remuneration and Agenda for Change banding for OT posts across Scottish Health Boards differed considerably from Band 5 to Band 7. OTs working in a specialist practice tend to receive higher remuneration compared to those working in a hospital setting.

7.7.2 Continuing Professional Development (CPD)

Orthodontic therapists are expected to complete 150 hours of CPD over a five year period of which at least 50 should be verifiable.

It was understood from the interviews that orthodontic therapists attend CPD courses that are aimed at dental nurses as there are no courses designed specifically for them. However, it was reported that the British Orthodontic Conference which is held every year, has introduced a day specifically for orthodontic therapists, but gaining funding to attend the conference was perceived to be difficult.

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Appendix 1: SDR Items 32, 55(e) & 55(f)

32	Orthodontic treatment	55e1	Ortho - repairing cracks or fractures
32a1	Removable spring and or screw appliance	55e2	Ortho - refixing a metal component
32a2	Simple fixed type appliance	55e3	Ortho - repairing a functional appliance
32a3	Fixed multiband or multibracket appliance	55e4	Ortho - repairing to a fixed appliance
32a4	Functional appliance	55e	Additional fee for impression technique
32a5	Bite plane appliance	55e	Combination repairs max
32a	Extra-oral traction and anchorage reinforcement	55f	Other orthodontic repairs
32b1	Supervision of retention		
32b2,1	Removable retainer in acrylic resin		
32b2,2	Fixed or bonded retainer		
32b2,3	Removable pressure formed retainer		
32c1	Repairing cracks or fractures		
32c2	Refixing a metal component		
32c3	Repairing a functional appliance		
32c4	Repairing to a fixed appliance		
32c	Additional fee for impression technique		
32c	Combination repairs		
32c			
32d	Addition of tooth to an appliance or retainer		
32e	Replacement appliance		
32f	Any other orthodontic treatment		
32	Interim payment		
intpay			

Appendix 2: Patient Interview questionnaire

1. Why do you think you are undergoing treatment? Reasons for treatment
2. What kind of treatment are you undergoing? Type
3. Are you wearing removable or fixed brace?
4. Why did you want the treatment? Motivation
5. Did the family dentist or orthodontist?give you Information about braces (types, effect on diet, oral hygiene, duration etc)
6. Will you follow the oral hygiene regime recommended?
7. Were you made aware of any risks of orthodontic treatment?
 - By your dentist?
 - By your orthodontist?
8. How long did you wait to start treatment?
9. How long have you been under treatment? Duration
10. How were the appointments? Did it affect your school attendance?
11. Was the treatment painful?
12. Will you wear the retainer?
13. Living with braces, how does the treatment affect your
 - Eating
 - Lifestyle?
14. How did your friends react?
15. What do you think the benefits of the treatment are/will be?
 - Appearance: Feeling better about the way you look and feel
 - Self esteem: Feeling more confident
 - Improvement in health of your teeth and gums.
16. If you had known at the start of treatment what it would be like, how long it would take -and the improvements to your teeth and smile - would you still have gone ahead with it?
17. How would you feel if you were not offered the treatment

Appendix 3: P7 Focus group topic guide

1. What do you know about orthodontic treatment?
2. Has anyone you know well had braces?
3. Do you think you need the treatment? Why?
4. What benefits are you expecting from orthodontic treatment?
5. Are you aware of any risks to your teeth or gums from the treatment?
6. How will you feel if you have to wear braces?
7. How will your friends react?
8. How do you think braces will affect what you eat?
9. How do you think braces will affect keeping your teeth clean?
10. Do you think you'll need to wear a retainer at the end of your treatment?
11. How will it affect you if you are not allowed the treatment

APPENDICES

Appendix 4: GDP Survey

Please indicate your Health Board

- | | | |
|--|--|--|
| <input type="checkbox"/> Ayrshire and Arran | <input type="checkbox"/> Grampian | <input type="checkbox"/> Orkney |
| <input type="checkbox"/> Borders | <input type="checkbox"/> Greater Glasgow and Clyde | <input type="checkbox"/> Shetland |
| <input type="checkbox"/> Dumfries and Galloway | <input type="checkbox"/> Highland | <input type="checkbox"/> Tayside |
| <input type="checkbox"/> Fife | <input type="checkbox"/> Lanarkshire | <input type="checkbox"/> Western Isles |
| <input type="checkbox"/> Forth Valley | <input type="checkbox"/> Lothian | |

Do you provide orthodontic treatment?

- Yes
 No

If yes, do you obtain treatment plan from a consultant or a specialist practitioner?

- Never
 Sometimes
 Always

Other (specify)

How many orthodontic cases do you usually have in treatment?

- <10
 10 – 20
 20 – 50
 > 50

To whom do you refer your orthodontic patients?

- Dentist with a special Interest (DwSI)
 General Dental Practitioner practicing Orthodontics
 Specialist Practice
 Hospital Service
 Private Practice
 All of the above

Do you undertake a oral health risk assessment before referring patients to orthodontics?

Yes

No

Which of the following do you assess?

Caries status

Oral hygiene

X-rays

All of the above

Do you use Index of Orthodontic Treatment Need (IOTN) chart to assess patients before referring?

Yes

No

Other (specify)

Before referring patients to orthodontics I discuss the possible risks and benefits with my patients

Agree

Disagree

Other (specify)

The parents/guardians' motivation for seeking orthodontic treatment influences the child decision to have orthodontic treatment

Strongly Agree

Agree

Disagree

Strongly Disagree

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The introduction of the Index of Orthodontic Treatment Need (IOTN) has had impact on your practice?

- Yes
 No

Please describe the impact the introduction of IOTN has had

Does prior approval for orthodontic cases have an effect on you or your practice?

- Yes
 No

Please specify

What is the current waiting time for orthodontic treatment to be treated in a specialist practice in your area?

- 1-3 months 4-6 months
 7-9 months 10-12 months

Other (specify)

Would you be prepared to offer retainer supervision and replacement to patients post orthodontic treatment?

- Yes
 No

Please comment

Orthodontic treatment benefits

a. A person's self confidence and self-esteem often improves following a course of orthodontic treatment

Strongly Agree
 Disagree

Agree
 Strongly Disagree

b. Orthodontic treatment can also improve dental function

Strongly Agree
 Disagree

Agree
 Strongly Disagree

c. Orthodontic treatment can also improve dental health

Strongly Agree
 Disagree

Agree
 Strongly Disagree

What level of training did you receive?

- Undergraduate training
- Ongoing work experience
- CPD courses
- Section 63 courses
- MSc

Other (specify)

Additional information/comments

Appendix 5: Health Board Area and Response Rate from GDP Survey

GDPs Health Board and Response Rate

Health Board	Response Percent	Response Count
Ayrshire and Arran	2.6%	6
Borders	0.4%	1
Dumfries and Galloway	3.4%	8
Fife	5.6%	13
Forth Valley	9.4%	22
Grampian	20.6%	48
Greater Glasgow and Clyde	16.3%	38
Highland	18.5%	43
Lanarkshire	9.0%	21
Lothian	2.1%	5
Orkney	2.6%	6
Shetland	2.1%	5
Tayside	4.3%	10
Western Isles	3.0%	7
		233

Appendix 6: Specialist Practitioner Semi-Structured Interview Topic Guide

1. What kinds of patients would you:
 - a. Treat yourself
 - b. Refer to the Hospital Orthodontic Service?
2. Do you formulate simple treatment plan for GDPs?
3. What kind of referral model do you follow (referral accepted from and referred on)? Can it be improved
4. What is the impact of IOTN on your practice?
5. How has prior approval affected you with orthodontic cases?
6. How has changes to SDR/Payment system affected you?
7. How would you describe the interaction with Practitioner services?
8. Do you discuss possible benefits of Orthodontics with your patients?
9. Do you discuss risks of orthodontic treatment with them?
10. What are the factors motivating patients and their parents to seek orthodontic treatment?
11. Generally how much is the parental motivation key compared to the child's motivation?
12. What do you consider are the benefits of orthodontic treatment?
13. What is the typical treatment time (duration) and average cost of orthodontic treatment in your practice?
14. What are your views about long term retainer provision? Maintenance? Relapse?
15. How do you think orthodontic treatment affects self esteem?
16. What are your views about current NHS orthodontics provision? Primary Care/Secondary Care/ Service Model
17. Where are the gaps in the service? Adult treatment
18. What is needed to improve the orthodontics services?
19. Do you undertake private treatment? NHS: Private

Appendix 7: PSD Interview Topic Guide

1. What are views on orthodontic service?
2. Approximately how many orthodontic referrals do you receive in a month?
3. Please describe referral triage process undertaken in PSD?
4. What are views about prior approval waiting time?
5. What are your views about Appeal process?
6. What is the impact of IOTN on your department?
7. How do communicate with Specialist practitioners?

Appendix 8: Consultant Interview Topic Guide

1. Type of contract (NHS consultants, honorary, part time/full time)
2. What kinds of treatment do you provide? All Ortho or only Multidisciplinary/Complex?
3. Do you undertake vetting of the referrals? If so what is the process and who is involved? Time taken to carry out vetting....
4. Approximately how many referrals do you receive each month?
5. What kind referrals do you receive? Need for treatment by the Dental Health Component of IOTN/ complexity.
6. Source of referral GDP, Specialist Practitioner, CDS or other.
7. Views about private treatment?
8. Is the treatment only offered to patients with IOTN 3.6, 4 or above?
9. What is the Impact of IOTN?
10. What kind of appliances do you use?
11. What are views on relapse and long-term management of retention?
12. Do you routinely treat adult patients? Age group of patients
13. What do you consider are the benefits of the treatment?
14. What do you consider are the risks of the treatment?
15. Do you frequently refer patients to specialist practitioner in your area?
16. What kind of treatments do you expect a specialist practitioner to undertake?
17. How does specialist practitioner service affect the waiting list?
18. Are you happy with current service model?
19. What kind of model would you prefer?
20. Are the treatment facilities up to date?
21. How are your workforce numbers?
22. How would you improve the service?
23. Is your department able to meet RTT targets?

Appendix 9: Orthodontic Therapist Interview Guide

1. What kind treatments do you provide?
2. Who formulates treatment planning?
3. Are you involved in the treatment planning or do you work by prescription only?
4. Do you have onsite support from consultant/other?
5. What level of support do you need? Infrastructure and nurse
6. Does your training reflect your day to day work?
7. What are gaps in the service?
8. Do you discuss risks and benefits with patients?
9. How many patients do you see in a session?
10. How many clinical and admin session do you do?
11. Is your department organised to support your post?
12. What are your CPD requirements?
13. Are you happy with the Banding?

AC	Aesthetic Component
CCST	Certificate of Completion of Specialist Training
CDS	Community Dental Service
CN	Clinical Networks
CPD	Continuing Professional Development
DHC	Dental Health Component
DF2	Dental Foundation Training Year 2
FTTA's	Fixed Term Training Appointment
GDP	General Dental Practitioner
GDPA	General Dental Practice Allowance
GDS	General Dental Services
HNA	Health Needs Assessment
HOS	Hospital Orthodontic Service
IOTN	Index of Orthodontic Treatment Need
ISD	Information and Statistics Division
MCN	Managed Clinical Networks
MIDAS	Management Information & Dental Accounting System
NDIP	National Dental Inspection Programme
NHS	National Health Service
NRS	National Records of Scotland
OT	Orthodontic Therapist
PDS	Public Dental Services
PSD	Practitioner Services Division
RTT	Referral to Treatment Time
SDNAP	Scottish Dental Needs Assessment Programme
SDPB	Scottish Dental Practice Board
SDR	Statement of Dental Remuneration
SHO	Senior House Officer
SIMD	Scottish Index of Multiple Deprivation
SNAP	Scottish Needs Assessment Programme
SpP	Specialist Practice
SpPs	Specialist Practitioners
StR's	Speciality Training Registrars
TTG	Treatment Time Guarantee
WTE	Whole Time Equivalent

GLOSSARY OF TERMS

Anterior open bite

The lower incisors are not overlapped in the vertical plane by the upper incisors and do not occlude with them.

Archwire

A wire engaged into orthodontic brackets which delivers a force to produce tooth movement.

Bracket

A precisely fabricated fixed orthodontic attachment made from metal, ceramic or plastic that is bonded to the teeth.

Caries

Disease process that destroys the structure of the tooth.

Complete overbite

An overbite in which the lower incisors make contact with either the upper incisors or the gum tissue in the roof of the mouth.

Crossbite

The upper incisor teeth or upper molar teeth bite on the inside on the lower teeth.

Decalcification

Loss of mineral from the tooth surface immediately surrounding an orthodontic appliance. It is caused by excessive intake of sugar and accumulation of bacteria (plaque) on the tooth surface. It results in permanent discolouration of the tooth surface and cavitation if extreme.

Dental arch

The arch formed by the upper and lower teeth when viewed from below or above respectively.

Ectopic eruption

The eruption of a tooth in an abnormal position.

Epidemiology

The branch of medicine which deals with the incidence, distribution, and possible control of diseases and other factors relating to health.

Fixed appliance

An appliance that is fixed to the tooth surfaces in order to produce tooth movement.

Gingiva

The gum tissue surrounding teeth.

Gingival recession

A shift of the gum margin exposing the root surface.

Graft

Any material or tissue that is not normally part of an organ or tissue, implanted or transplanted for the purpose of reconstruction or repair.

Hypodontia

Congenitally missing teeth.

Impression

An imprint of the upper and/or lower teeth used to make study models of the teeth.

Index of Orthodontic Treatment Need (IOTN)

The IOTN is a clinical index to assess orthodontic treatment need.

Malocclusion

A poor relationship between the upper and lower dental arches or abnormal tooth positions.

Oral surgery

Surgical management of the teeth and supporting hard and soft tissues.

Overbite

The overlap of the lower incisors by the upper incisors in the vertical plane.

Overjet

The distance between the front surface of the lower incisors and the front surface of the upper incisors. The front surface of the upper incisors is usually 2-4 mm ahead of the front surface of the lower incisors.

Retainer

An orthodontic appliance used following orthodontic treatment in order to maintain the corrected tooth positions whilst the surrounding bone and gum tissue adapt to the new positions.

Root resorption

Loss of root length often accompanying orthodontic treatment.

Study models

Casts of the upper and lower teeth used to plan and monitor treatment changes.

Tooth wear

Loss of tooth tissues by mechanical or chemical processes other than dental decay.

