Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Orthodontic Review Group Report

ORTHODONTIC REVIEW GROUP REPORT

December 2006

Orthodontic Review Group Table of Contents

Orthodontic Review Group

Terms of Reference

To review the recommendations contained in the Joint Oireachtas Committee Reports on the Orthodontic Service in Ireland (February 2002 and June 2005).

To examine the recommendations within the operational remit of the Health Service Executive (HSE) and establish their status.

To conduct an analysis of the HSE's existing orthodontic delivery structure and capacity. Based on that analysis, to make recommendations in that regard.

The recommendations thus made to be costed and a time-frame for their implementation proposed.

Report of Review Group to be submitted to Professor B. Drumm, Chief Executive Officer.

28 April 2006

MEMBERSHIP – ORTHODONTIC REVIEW GROUP

Chair:	Mr. Hugh Kane, Local Health Manager – Wicklow
HSE South:	Ms. Ann Kennelly, Local Health Manager, HSE South Mr. Ian O'Dowling, Consultant Orthodontist
HSE Dublin/Mid-Leinster:	Dr. Marielle Blake, Consultant Orthodontist Dr. David Hegarty, Consultant Orthodontist
HSE Dublin/North-East:	Ms. Bernadette Kiberd, Local Health Manager Dr. Pat McSherry, Consultant Orthodontist
HSE West:	Mr. John Hennessy, Local Health Manager Dr. Niall McGuinness, Consultant Orthodontist
Specialist Orthodontist:	Dr. Burga Healy, Specialist Orthodontist
Dental Schools:	Ms. Kathryn Neville, School & Hospital Manager University College Cork. Mr. Brian Murray, Chief Executive Officer Dublin Dental School and Hospital.
Department of Health & Children:	
	Mr. Greg Canning, Assistant Principal Officer (to June 2006)
	Mr. Chris Fitzgerald, Principal Officer (from June 2006) Dr. Margaret Shannon, Dental Advisor (from June 2006)
Business Unit Support:	Ms. Mary FitzPatrick, Manager, Orthodontic Service Ms. Martina Behan, Grade VI Mr. Keith Treacy, Grade V Ms. Laura Molloy, Grade V.

Foreword by Chair

The reorganisation of health structures and creation of the Health Service Executive (HSE) for the first time allowed for discussion and planning on a national basis with the aim of providing an equitable, transparent public orthodontic service readily available to those most in need.

The HSE Orthodontic Review Group afforded the public orthodontic service an opportunity to consider its current position and the future direction of the service.

The Orthodontic Review Group examined the Recommendations in the Joint Oireachtas Committee Reports[1] [2] under four principal headings:-

- Guidelines
- Training
- Manpower Planning
- Service Provision

The Recommendations which did not fall under the above headings were also considered by the Group.

(*Please note Recommendation Numbers from Joint Oireachtas Committee on Health and Children Report on the Orthodontic Service in Ireland (February 2002) are used throughout the Review Group Report to introduce the above topics).*

The Review Group worked to unify attitudes within the orthodontic service of the HSE and obtain a national orthodontic strategy that is progressive and in harmony with the needs of the primary and secondary care public dental services.

The current status of the existing orthodontic service infrastructure was established by the Orthodontic Review Group using a questionnaire. The Review Group considered that as there were regional differences in support services (physical and service structures) it would be more appropriate for each administrative region to undertake an infrastructural review. It is intended that the infrastructural review will feed into the normal service planning process.

All of the recommendations in this report, other than the recommendation on relationships (page 55), have the unanimous support of the group. The recommendation on page 55 is a majority recommendation, with Dr. O'Dowling dissenting.

Patient Journeys

It has been said that "a picture is worth a thousand words". This is particularly true in orthodontics. Throughout the Review Group Report we have included a number of patient journeys which illustrate the types of cases treated and results achieved by the public orthodontic service.

[1] Houses of the Oireachtas Joint Committee on Health and Children. Report on The Orthodontic Service in Ireland (February 2002).
[2] Houses of Oireachtas Joint Committee on Health & Children. Fourth Report. Review of Public Orthodontic Services (June 2005).

Glossary

For the convenience of non clinical readers we have included a glossary of terms at the end of the report.

Acknowledgements

I wish to acknowledge the commitment and hard work of the Review Group members. I am grateful to the clinical members of the Group who did research on behalf of the Group and assisted the non-clinical members of the group to understand the complex issues involved in the provision of a public orthodontic service.

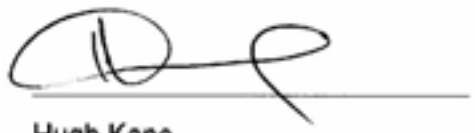
Other clinicians and organisations willingly shared their knowledge and I would particularly like to thank the Dental Schools in Dublin, Cork and Bristol, the Irish Committee for Specialist Training in Dentistry and the Registrar of the Dental Council of Ireland and our colleagues in the Primary Dental Care Services for their assistance.

My thanks to Dr. Michael O'Sullivan, Senior Lecturer/Consultant in Restorative Dentistry (Special Needs) who helped us to understand the importance of advanced restorative treatment for some of our patients and Professor Stephen Richmond for his advice on implementation of new guidelines.

The work of the following clinicians has been invaluable in the preparation of the Report. Drs. Marielle Blake and Simon Wolstencroft, Consultant Orthodontists, Drs. Ebrahim Al Awadahi and David Killian, Specialist Orthodontists.

A number of patients were asked if we could use their photographs/x-rays to illustrate the work of the public orthodontic service and I am extremely grateful to them for their consent to use their records.

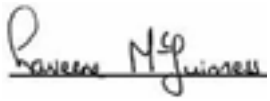
Finally, I would like to thank the business unit staff and other colleagues who worked in the background to draw together the important work of the Review Group.



Hugh Kane,
Chair, Orthodontic Review Group

20 December 2006

The Orthodontic Review Group Report and its recommendations were submitted to Professor Brendan Drumm, Chief Executive Officer and the Health Service Executive Management Team who accepted the recommendations at their management team meeting of Monday, 29th January 2007.



Laverne McGuinness,
National Director of
Primary, Community and Continuing Care.
30 January 2007

INTRODUCTION TO ORTHODONTICS

CHAPTER 1

Frequently asked questions:-

What is orthodontic treatment?

Orthodontic treatment is a way of straightening or moving teeth, to improve the appearance of the teeth and how they work. It can also help to improve the long-term health of the teeth, gums and jaw joints, by spreading the biting pressure over all the teeth.

Why might a patient need orthodontic treatment?

Many people have crowded or crooked teeth. Orthodontic treatment will straighten the teeth or move them into a better position. This improves the way in which the teeth bite together which makes them easier to clean and can also improve their appearance.

In some patients the upper front teeth stick out and look unsightly. These 'prominent' teeth are more likely to be damaged but orthodontic treatment can move them back into line. In others, the way the upper and lower jaws meet can cause teeth to look unsightly and lead to an incorrect bite. Orthodontic treatment may be able to correct both. Some patients require the extraction of teeth before they can start orthodontic treatment and occasionally patients require jaw surgery.

How do I find out if I am eligible for public orthodontic treatment?

Patients are referred for orthodontic assessment by the Primary Dental Care Service. The orthodontic assessment is carried out by an orthodontist and eligibility for a public orthodontic treatment place is determined against a set of clinical guidelines.

Introduction to Orthodontic Service

Orthodontics is a dental speciality that concerns itself with genetic variations and developmental aberrations in the dento-facial area, its aim is to improve oral function, create resistance to dental disease, improve dento-facial appearance and enhance psycho-social bearing.

The public perception of orthodontics, while encompassing the above, is highly focused on cosmetics and the correction of crooked teeth and falls in line with the growing trend in developed countries. This phenomenon has produced a high demand for orthodontic treatment and many families consider treatment as a rite of passage for their children. Ireland is not alone, many state funded health services find it difficult to cope with the demand for orthodontic treatment and private services are often needed to help meet the demand. The dilemma of course for public health providers and decision makers is where to draw the line, who should receive state funded treatment?

Treatment eligibility guidelines and indices are useful to resolve this dilemma, but only if they are applied universally across the country and by appropriately trained clinicians to ensure consistency. The adoption of the internationally validated 'Index of Orthodontic Treatment Need' as recommended in this report is a progressive step. It distinguishes those orthodontic patients who have a true dental need and will obtain health gain from the intervention, from those with a low dental health need, who on the whole, receive only cosmetic benefits. Prioritisation of care in this way ensures that public funds are diverted to the neediest and that treatment is provided in a timely manner by the orthodontic workforce.

To comply with European legislation, a multi-dimensional approach to orthodontic training is required that involves competitive entry to select the best students and ensure probity. Training requires collaboration between training institutions to deliver highly skilled clinicians able to work independently or as part of an inter-disciplinary dental team. This report reviews orthodontic training and manpower and makes recommendations for the future.

The report also investigates the scope and depth of orthodontic services provided and it is clear that orthodontics alone, in many cases, is not the answer. The regional orthodontic units act as gate keepers to the most dentally challenged children in Ireland and this report highlights the need for support from other dental and surgical specialities. The report lays bare the need to develop consultant led restorative dental services in each region to facilitate the treatment of patients with severe hypodontia (congenitally missing teeth) and amelogenesis imperfecta (defective enamel development with cosmetic and functional implications). The report highlights the importance of oral surgery services (surgery to facilitate the correction of un-erupted and misplaced teeth) and orthognathic surgery services (surgery to correct severe jaw disproportion) to meet the needs of the population.

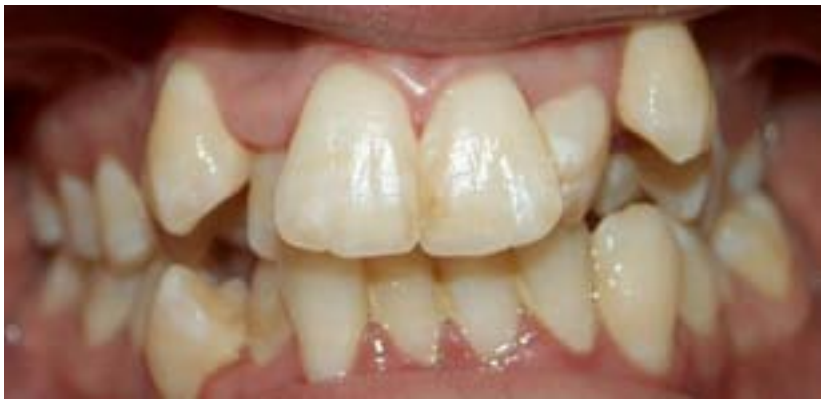
Significant resources are already assigned to the public orthodontic service (see Appendix A) and the implementation of the recommendations in this report will require further resources both within the orthodontic services and in other dental services. Our approach has been to recommend that the changes in eligibility guidelines be made and the impact monitored. In two years time the needs should be re-evaluated.

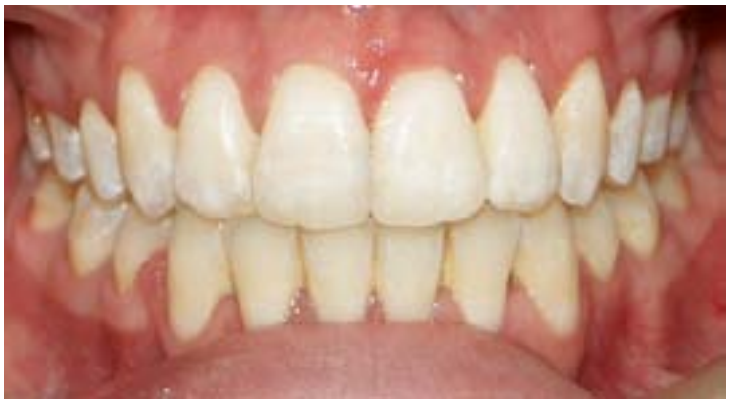
The orthodontic service has a historical backlog which has been addressed very proactively in many areas and where the backlog has been cleared the service is running very effectively. The effect of the enhancement proposed needs to be measured to establish the impact on future service provision.

Only through a collaborative approach from all stakeholders will the goals of this report be realised, to make the patient the priority and produce a world class orthodontic service.

A Standard Orthodontic Treatment Case

Good Jaw Relationship and Crowded Teeth



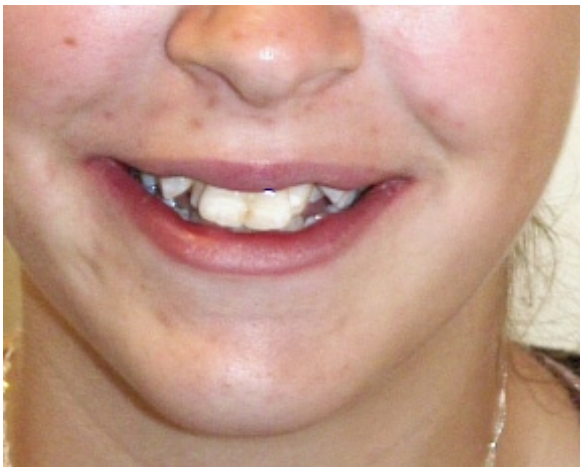


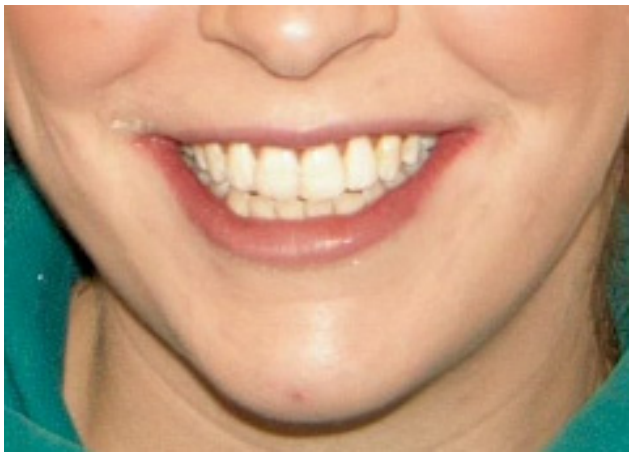
This patient is eligible for orthodontic treatment because one of the crooked teeth in the front causes the bottom jaw to bite in an incorrect position**.**

Most cases of crowding are not currently eligible for orthodontic treatment under the 1985 Department of Health Guidelines.

Treatment involves extraction of 4 permanent teeth and wearing upper and lower fixed appliances.

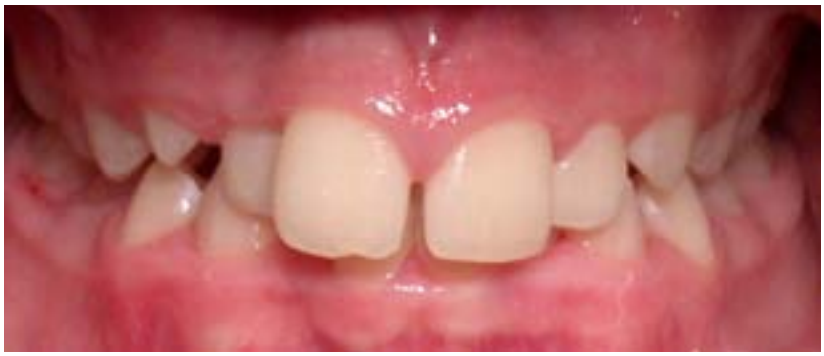
Total treatment time:	**2 years 8 months.**
Total no of visits:	**33 visits.**

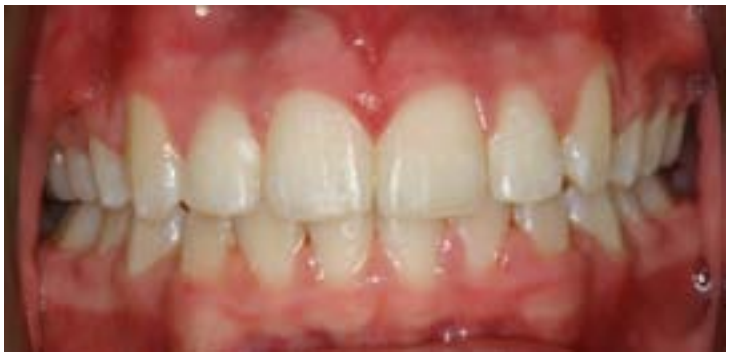




Functional Appliance Treatment

Poor Jaw Relationship, Growth required to produce an ideal result.





The treatment for this patient involved a removable brace (functional appliance to correct the bite relationship). This was then followed by a course of fixed appliances (train tracks) to definitively align the teeth.

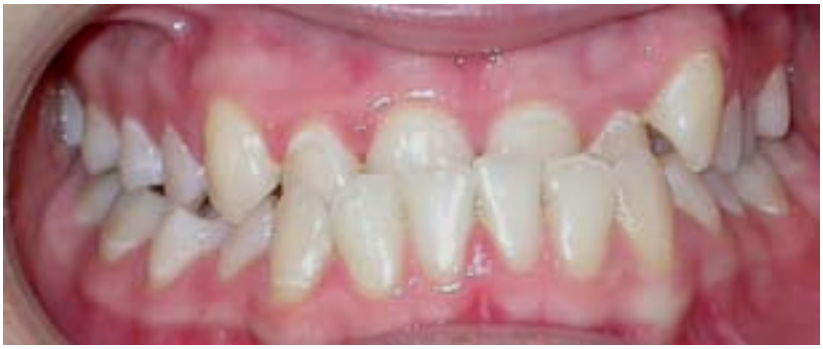
These types of cases are eligible for treatment if the upper front teeth are ahead of the lower front teeth by 10mm and make up approximately 50% of the patients on the Category A treatment waiting list.

Total treatment time:	**4 years.**
Total no of visits:	**20 visits.**

At the end of the first stage of treatment there may be a delay waiting for all the permanent teeth to erupt before the fixed appliances are fitted.

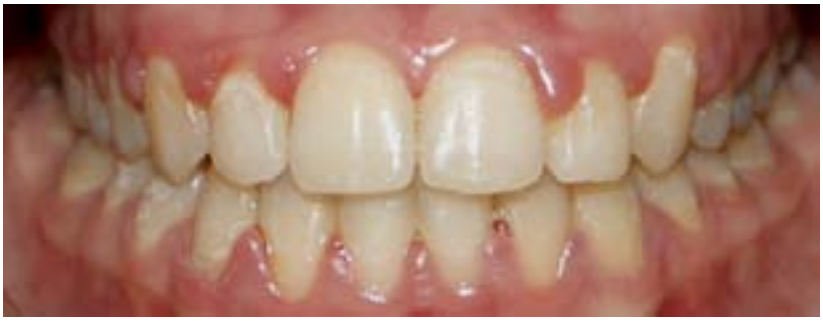
Crossbite

This patient's lower teeth bite in front of the upper teeth and cause the lower jaw to bite in a forward position.



Treatment involves wearing fixed orthodontic appliances with some removable braces.

Treatment time - 2 years 6 months
Total no of visits – 32 visits to removal of braces



After every course of orthodontic treatment orthodontic retainers are recommended to hold the teeth in the treatment position. Most cases are monitored for two years following removal of the braces before they are definitely discharged from the service.

ORTHODONTIC SERVICE CATCHMENT AREAS

HSE's Four Administrative Areas and 32 Local Health Offices

HSE West: Donegal, Sligo & Leitrim; Mayo, Galway & Roscommon; Clare, Limerick & North Tipperary.

HSE South: Cork, Kerry ,Tipperary S.R.; Waterford, Carlow, Kilkenny and Wexford.

HSE Dublin Mid-Leinster: Dun Laoghaire, Dublin South City; Dublin South East, Dublin South West, Dublin West, Kildare West Wicklow, Wicklow, Laois/Offaly, Longford/Westmeath.

Dublin North East: Dublin North Central; North West Dublin; Meath, Louth, Cavan/Monaghan.

ORTHODONTIC REVIEW GROUP

SUMMARY OF RECOMMENDATIONS

CHAPTER 2

ORTHODONTIC REVIEW GROUP - SUMMARY OF RECOMMENDATIONS

GUIDELINES

1. The Review Group recommends the adoption by the Health Service Executive of the eligibility guidelines (which are based on IOTN) for public orthodontic treatment places.

2. Adoption of the modified IOTN guidelines will result in more patients being eligible for public orthodontic treatment places. The impact of the extension of these guidelines nationally will have resource implications which need to be quantified.

3. **Training in Use of Proposed New Guidelines (Calibration)**
   To ensure a consistent approach both in Primary Dental Care and with the orthodontic service it is essential that all staff be trained in the use of the new guidelines.

4. **Implementation of Guidelines**

   a. The Review Group recommends that consultant orthodontists and specialists undertaking assessment should undergo calibration training using the new guidelines.

   b. Following this training, key clinicians will be identified who would provide training for primary dental care staff.

   c. The Review Group recommends that in future the Dental Schools should train undergraduate students in IOTN. Both Dental Schools in Cork and Dublin will be allocated two placed on the calibration training programme outlined above.

   d. Once the training dates for the proposed guidelines have been organised an implementation date for the use of the new guidelines can be agreed.

   e. The Review Group recommends that the proposed guidelines are introduced within six to eight weeks of the training of the consultant orthodontists and specialists.

   f. Key Orthodontic Consultants to be identified who will provide training in guidelines for other HSE staff.

   g. An information day for the primary dental care service should be undertaken in each administrative region by HSE Orthodontic Consultants

   h. The revised Guidelines will impact on the Primary Dental Care Services as they act as gatekeepers for the orthodontic service. The Primary Dental Care Service will benefit from clearer criteria with wider eligibility which will be welcomed by patients and parents alike. The Primary Dental Care Service provides an extraction service and oral hygiene instruction for patients in orthodontic treatment so they will receive more referrals from the orthodontic service. The Review Group recommends that the impact of the extension of eligibility guidelines on the resources of the Primary Dental Care Service be quantified.

5. Training Recommendations

a. The Review Group recommends that the Dental Council of Ireland and the General Dental Council U.K. urgently address the outstanding issue in relation to cross jurisdictional training pathways.

b. The HSE needs to continue to access training in the two dental schools in Ireland, in the United Kingdom as long as the option remains viable and through the use of outreach models such as the Distance Learning Model outlined in this report. The HSE can only support training models which meet the statutory requirements and standards.

c. The Review Group recommends that an additional Senior Lecturer/Consultant post is approved for the Dublin Dental School and Hospital to allow the re-introduction in 2007 of the Specialist Orthodontist training programme.

d. The Review Group noted that four specialists commenced State funded training in the U.K. in 2005. The Review Group recommends that the Health Service Executive continue to support the four training places in the United Kingdom and that this funding should be transferred to support training in Ireland when the current cohort of students qualify.

e. The Review Group recommends that a uniform sponsorship agreement be established for specialist orthodontic training and those sponsored (sponsorship includes salary for three years and fees) should commit to working in the public orthodontic service for a period of four years.

f. The Review Group recommends that in future, funding and sponsorship agreements for training of Specialist Orthodontist should come under the remit of the Assistant National Director Professional Education & Development.

6. Manpower Planning Recommendations

a. The Review Group recommends that consultant orthodontist staffing levels should be reviewed by each administrative region.

b. The Review Group recommends that dentists currently employed in HSE orthodontic services should be facilitated to pursue the MFDS requirement (entry requirement for specialist training).

c. The Review Group recommends that the number of Specialist Orthodontists employed in the HSE should be reviewed every two years.

d. The Review Group recommends that the terms and conditions of the Orthodontic Therapist grade should be negotiated by the HSE Employers Agency.

e. The Review Group recommends that the administrative areas examine all options to maximise utilisation of existing resources (both physical and staffing). When this exercise has been completed further investment should then be considered.

f. The Lead Local Health Manager with responsibility for Oral Health in conjunction with Local Health Managers and Clinicians should be responsible for the development of the capital investment plan. The Review Group recommends that the infrastructural review should be completed by July 2007.

7. Service Provision Recommendations

a. The Review Group recommends ICT service are asked to review the efficacy of Orthotrac and make a recommendation on a uniform system for use throughout the national public orthodontic service.

b. The Review Group recommends that the Lead Local Health Manager for Oral Health in each administrative region should examine the regions existing interdisciplinary services and make appropriate recommendations to the national forum to meet oral heath needs of patients nationally.

c. The Health Service Executive requires that all orthodontic waiting lists are validated at regular intervals. Validation of the waiting list must occur prior to any assessment or treatment initiative.

d. The Review Group recommends that the orthodontic units be allowed direct referral access to the National Treatment Purchase Fund to access surgical interventions.

e. The Review Group recommends that clinical audit be introduced, and supported (both financial and manpower) and encouraged in all orthodontic units and the knowledge gained should be shared within units and at clinical meetings.

f. Clinical staff in each administrative region should hold two half day meetings annually to share knowledge gained from clinical audit, these meetings should be organised by the Consultant Orthodontists.

g. A national structure in Oral Health would facilitate the development and roll-out of clinical audit and quality improvement.

8. Remaining Recommendations From Report On The Orthodontic Service In Ireland (February 2002) Not Addressed Under Other Headings

(For the convenience of the Reader the Recommendation Numbers used in the Joint Oireachtas Report on The Orthodontic Service in Ireland have been included after the Orthodontic Review Group Recommendations).

a. The Review Group recommends that under the HSE's Dignity at Work Policy, an independent, skilled and experienced person, acceptable to all parties, be appointed by the Chief Executive Officer to investigate complaints of Consultants A, B & C when received in writing, and make a report of the findings. (Recommendation 1 refers)

b. The Review Group recommended the introduction of performance measures (page 55). The proposed measures are an extension of the current data set used by the Department of Health. A number of existing data measures have been subdivided. As some services collate data manually the sub-group felt that it would be appropriate to review the data collection to ensure consistency of data after six months. A review of the data collected should be undertaken after 12 months of data collection. (Recommendation 2 refers)

8. Remaining Recommendations from Report on The Orthodontic Service in Ireland (February 2002) Not Addressed Under Other Headings contd.

(For the convenience of the Reader the Recommendation Numbers used in the Joint Oireachtas Report on The Orthodontic Service in Ireland have been included after the Orthodontic Review Group Recommendations).

c. The Review Group noted that this is a matter for the Department of Health & Children and the Interim HIQA is now in place. (Recommendation 3 refers).

d. The Review Group noted that this is a matter for the Dental Council of Ireland and the Dental Schools in Dublin and Cork. (Recommendation 6 refers).

e. The Review Group noted that this is a matter for the Department of Health and Children. (Recommendation 14 refers).

f. The Review Group noted that the Specialist Grade is now in place. (Recommendation 16 refers).

g. The Review Group recommends that the possibility of a grant in aid scheme should be investigated by the Department of Health and Children's Eligibility Review Group. (Recommendation 26 refers).

h. The Review Group noted that the Dental School in Dublin and Cork provide treatment for Health Service Executive patients. (Recommendation 27 refers).

i. The Review Group noted that this is a matter for the Department of Health and Children. (Recommendation 29 refers).

GUIDELINES

CHAPTER 3

Recommendations from Joint Oireachtas Committee on Health and Children

Report on the Orthodontic Service in Ireland (February 2002)

GUIDELINES

Recommendation 4:

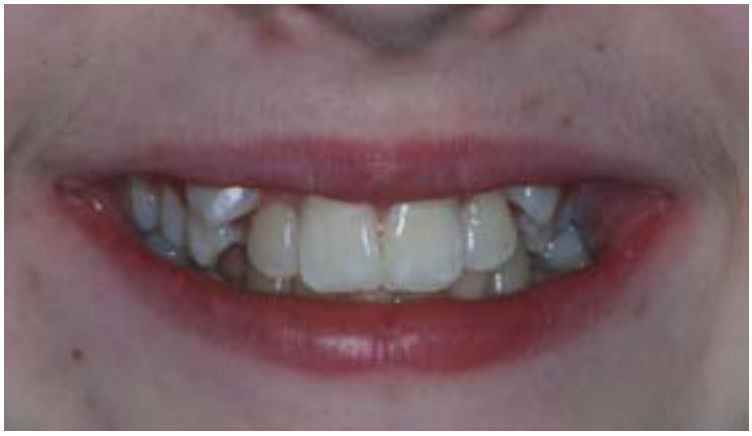
Guidelines for prioritising services to be considered by Committee before implementation.

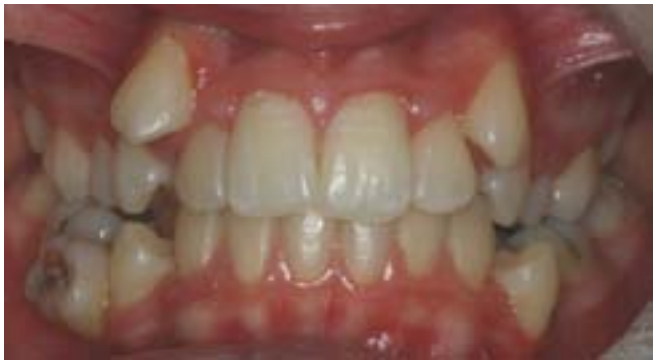
Recommendation 5:

Reduction in 1985 guidelines if appropriate should apply only to next group of 12 year olds – not to those on existing waiting lists.

The two photographs below are examples of children who may not have been eligible under the Department of Health guidelines but who will now be eligible under the revised guidelines. This exclusion was of particular concern to members of the Review Group.

Crowding Cases – IOTN 4D





GUIDELINES

The 1985 Department of Health Guidelines present difficulties in that there are varying interpretations in operation throughout the country and some high need cases are not included in the 1985 Guidelines.

Discussion

The Review Group noted that the application of the Department of Health guidelines varied greatly across former health board areas.

Recommendation 4[3] suggested that a mechanism be put in place to look at the guidelines and that any amendments made to guidelines be ratified by the Houses of the Oireachtas prior to implementation. Up to this point no focussed attempt was made to resolve this issue nationally.

This Review Group is making a unanimous recommendation to the HSE to replace the 1985 guidelines with new assessment criteria based on Index of Orthodontic Treatment Need (IOTN). The national implementation of the proposed guidelines will ensure equity of access to treatment for all patients deemed eligible.

The Index of Orthodontic Treatment Need (IOTN) is an internationally recognised valid reliable and reproducible assessment of the severity of a malocclusion. Malocclusion is the clinical term used to describe the variation from the norm (crooked teeth, bad bite, and jaw disharmony). Clinicians and potential patients and their families may have differing views of what should be treated and what should be accepted as a modest and harmless variation. The use of IOTN will reduce the inevitable subjective bias, which results from clinical opinion alone.

IOTN has two components, a dental health and an aesthetic component. The Dental Health Component has five categories ranging from 1 (no need for treatment) to 5 (great need). IOTN grades 1 to 3 are not considered severe enough to be treated within the public health system. The Aesthetic Component is a 10 grade scale ranging from a very pleasing (1) to a very unpleasing appearance (10).

PROPOSED NEW HSE GUIDELINES ON ELIGIBILITY

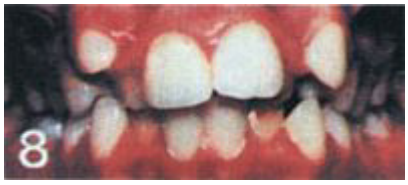
All eligible patients should be free of untreated dental caries with all lesions satisfactorily restored and they should be free from active gum disease (gingivitis and periodontitis). Patients and parents are advised of the need for full compliance and co-operation with all aspects of maintaining good dental health and the wearing of appliances. Failure to comply with these issues could render a patient not eligible on dental health or compliance grounds.

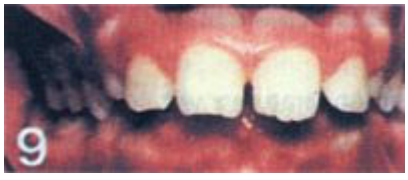
[3] Joint Oireachtas Committee on Health and Children, Report on The Orthodontic Service in Ireland (February 2002) pages 7, 23 and 24 refer).

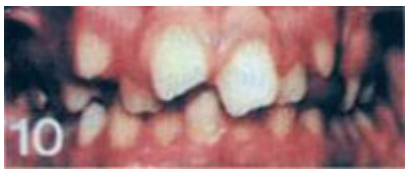
PROPOSED NEW HSE GUIDELINES ON ELIGIBILITY

Grade 5	Treatment required
5.a	Increased overjet > 9 mm
5.h	Extensive hypodontia with restorative implications (more than one tooth missing in any quadrant requiring pre-restorative orthodontics). Amelogenesis imperfecta and other dental anomalies which require pre-prosthetic orthodontic care.
5.i	Impeded eruption of teeth (apart from 3rd molars) due to crowding, displacement, the presence of supernumerary teeth, retained deciduous teeth, and any pathological cause
5.m	Reverse overjet > 3.5 mm with reported masticatory and speech difficulties
5.p	Defects of cleft lip and palate
5.s	Submerged deciduous teeth – arrange removal of teeth but orthodontic treatment not necessarily provided
Grade 4	**Treatment required**
4.b	Reverse overjet > 3.5 mm with no masticatory or speech difficulties
4.c	Anterior or posterior crossbites with > 2 mm discrepancy between the retruded contact position and intercuspal position
4.d	Severe displacements of teeth > 4 mm but only with Aesthetic Component of 8 to 10 (see photographs below).
4.e	Extreme lateral or anterior open bites > 4 mm
4.f	Increased and complete overbite with gingival or palatal trauma
4.l	Posterior lingual crossbite with no functional occlusal contact in one or more buccal segments
4.m	Reverse overjet > 1 mm but < 3.5 mm with recorded masticatory and speech difficulties

Aesthetic Component 8 - 10





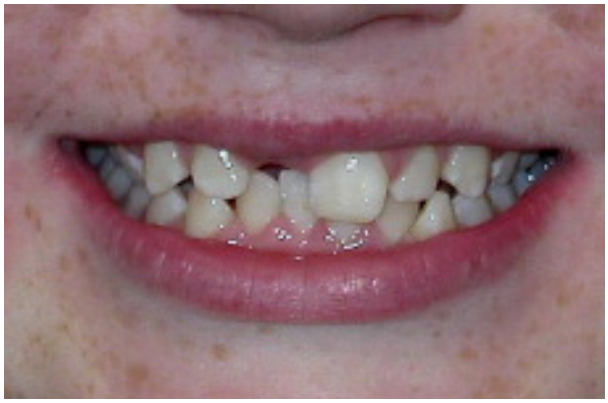


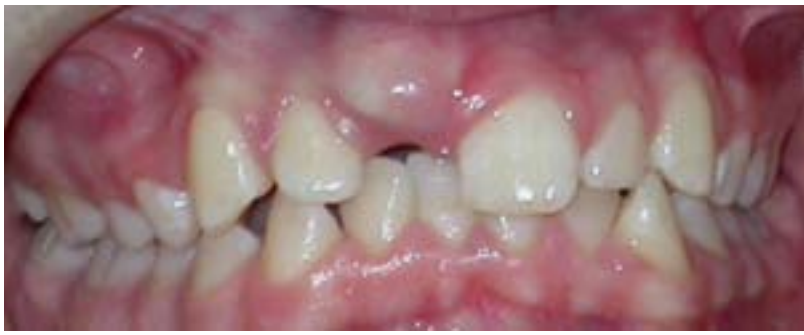
Additional Eligibility Criteria – assessed on a case by case basis.

- Children who are in the care of the Health Service Executive and do not fall under any of the other eligibility criteria.
- Children with special needs who are referred by the primary dental care special needs service or a paediatric dental consultant.

Unerupted upper front tooth.

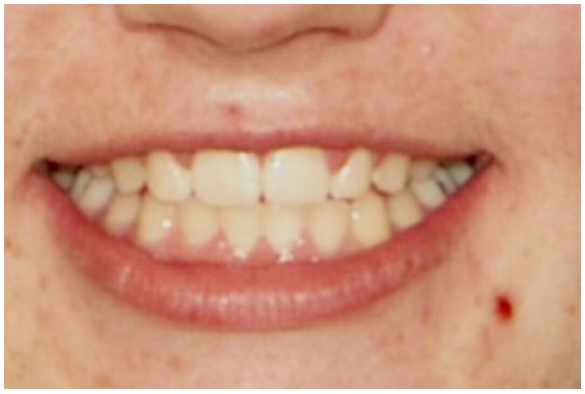
This patient presents with failure of eruption of an upper front tooth. There are several causes for this condition.

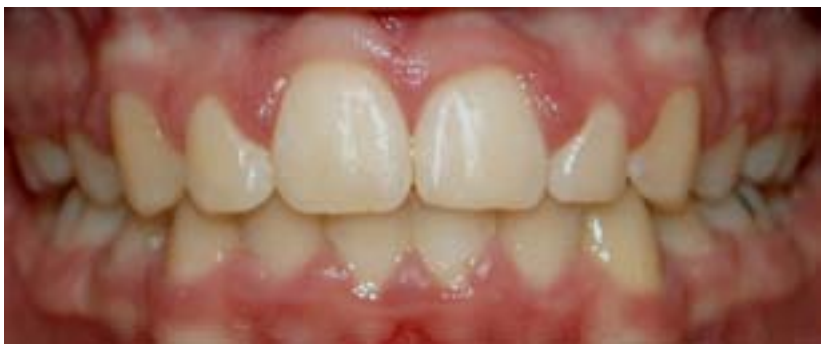




Treatment involves surgical uncovering of the buried tooth (oral surgeon or periodontist) and placement of orthodontic fixed appliances to bring the tooth into the ideal position.

Treatment time - 2 years 5 months
Total no of visits – 21 visits





Recommendations - Guidelines

- The Review Group recommends the adoption by the Health Service Executive of the eligibility guidelines (which are based on IOTN) for public orthodontic treatment places.

- Adoption of the modified IOTN guidelines will result in more patients being eligible for public orthodontic treatment places. The impact of the extension of these guidelines nationally will have resource implications which need to be quantified.

Training in Use of Proposed New Guidelines (Calibration)

To ensure a consistent approach both in Primary Dental Care and with the orthodontic service it is essential that all staff be trained in the use of the new guidelines.

Recommendations - Implementation of Guidelines

- The Review Group recommends that consultant orthodontists and specialists undertaking assessment should undergo calibration training using the new guidelines.

- Following this training, key clinicians will be identified who would provide training for primary dental care staff.

- The Review Group recommends that in future the Dental Schools should train undergraduate students in IOTN. Both Dental Schools in Cork and Dublin will be allocated two placed on the calibration training programme outlined above.

- Once the training dates for the proposed guidelines have been organised an implementation date for the use of the new guidelines can be agreed.

- The Review Group recommends that the proposed guidelines are introduced within six to eight weeks of the training of the consultant orthodontists and specialists.

- Key Orthodontic Consultants to be identified who will provide training in guidelines for other HSE staff.

- An information day for the primary dental care service should be undertaken in each administrative region by HSE Orthodontic Consultants

- The revised Guidelines will impact on the Primary Dental Care Services as they act as gatekeepers for the orthodontic service. The Primary Dental Care Service will benefit from clearer criteria with wider eligibility which will be welcomed by patients and parents alike. The Primary Dental Care Service provides an extraction service and oral hygiene instruction for patients in orthodontic treatment so they will receive more referrals from the orthodontic service. The Review Group recommends that the impact of the extension of eligibility guidelines on the resources of the Primary Dental Care Service be quantified.

TRAINING

CHAPTER 4

Recommendations from Joint Oireachtas Committee on Health and Children

Report on the Orthodontic Service in Ireland (February 2002)

TRAINING

Recommendation 7
Dublin Dental Hospital and School receive State funding to upgrade their facilities for orthodontic postgraduate training with a view to catering for up to 18 trainees.
[Chapter 5.12(ii)]

Recommendation 8
All specialist training places in Dublin and Cork be funded by the State and attached to health authorities until health authorities have a minimum of 50 specialists.
[Chapter 5.12(iii)]

Recommendation 10.
The minimum number of trainee's specialists in training to be increased to 24 by 2004 at latest, with not less than 6 of these being trained in Cork.
[Chapter 5.12(v)]

Recommendation 11
Flexibility be shown to Dentists with considerable experience in Orthodontics so that they can avail of specialist training.
[Chapter 5.12(vi)]

Recommendation 12
Health authorities encourage and the Department facilitate dentists to apply for specialised courses in the U.K. and N.I.
[Chapter 5.12(vii)]

Recommendation 13
That Health Boards be facilitated in developing links with U.K. and N. Ireland Dental Colleges to train specialists in view of the inadequate training facilities available at present.
[Chapter 5.12(viii)]

Recommendation 22
State funding be provided to training Consultant Orthodontists, to try and avoid a shortage at this level and to facilitate manpower planning.
[Chapter 7.7(vii)]

Recommendation 28
Video conferencing links with Cork, Galway and other appropriate Orthodontic Units be the subject of public funding to facilitate more efficient training
[Chapter 8.8]

SPECIALIST TRAINING

The Orthodontic Review Group examined a number of different specialist training models to establish the training models which would best address the need for Specialist Orthodontists in Ireland.

North American Model

The length of specialist training programmes varies from two to five years. The training programmes are based on clinical training, core courses and speciality education, research training and project work. Students are also required to publish the results of their research. Most of the training is undertaken in academic institutions. Students treat 25-50 new cases and accept some transfer cases in their second year. Students are expected to complete 22-30 cases; this opportunity for reflective learning is regarded as very helpful by students. The weekly timetable consists of 6 clinical sessions, some undergraduate teaching, 2-3 didactic teaching seminars and 1-2 sessions a week on research.

Advantages

The programmes are well organised and undertaken in a university environment. There is an opportunity for interaction with postgraduates in other dental disciplines and most aspects of multidisciplinary dental treatment were available on site. Patients were treated to a high standard and there was an emphasis on completing patient treatment. This avoids the need to transfer patients to another student when the specialist has qualified.

It was noted that the supervisor sees all treatment cases before treatment commences at each visit and after treatment is completed. The course content also allowed for treatment of adult patients.

Disadvantages

The programmes in North America tend to be oversubscribed, the fees are high and living in some locations is expensive.

The Review Group decided not to pursue this model as the logistical difficulties of sourcing both training places and trainees willing to move to North America were significant and other models would address the needs of the Irish health service.

European Model

The Review Group noted that the content and duration of undergraduate dental education and specialist training courses in Orthodontics and Oral Surgery are prescribed by European Union Directives 78/686/EEC and 78/687/EEC. These directives only list topics to be covered during training and do not indicate the level of competence required which is left to the discretion of the individual States.

Free movement of dentists and specialists presupposes that training standards reach a safe and acceptable level and that there will be a degree of harmonisation of standards across the EU and EEA States. The European Union Advisory Committee on the Training of Dental Practitioners recommended competencies for specialist training. The Erasmus guidelines provide a framework for orthodontic training. In Ireland the Dental Council has approved training programmes which meet the Erasmus guidelines, the

Dental Council has the authority to approve a training programme or make recommendations which would bring the programme up to a standard that it deems acceptable.

The Review Group did not see a need to pursue specialist training places in Europe as the training provided in Irish Dental Schools receives international recognition.

The importance of mutual recognition of qualifications at all levels of dental education allows those trained in Irish Dental Schools to work in health services in other countries.

Specialists who have qualified in other countries within the European Union in turn have their qualifications recognised by the Dental Council of Ireland.

UK Model

The United Kingdom training model is in line with the European Directives and Erasmus guidelines. (Full time three year course or part time equivalent training).

During the period 2002 to 2005 training for 13 specialist orthodontists was sponsored by the Irish health services in the UK. The health service was responsible for their fees, course allowances and salaries. The newly qualified specialists are now contracted to work in the Irish health service for a three year period. The importance of Irish postgraduates being on a par with their UK contemporaries was emphasised.

The annual cost per student trained in the U.K. varies. The M.Sc. fees which are payable for two years (of the three year course) vary from 3,214 to 28,571. The annual pay cost is approximately 58,389.

Advantages

The UK programme requires minimal administration from Ireland and the links are already established.

Disadvantages

Potential candidates are not always in a position to move to the United Kingdom for the three year training period. The programme is provided in a different health service environment and students do not treat any patients from the Irish health service waiting list. All postgraduate students require National Training Numbers (NTN). At present these numbers are restricted creating a blockage to further UK training.

The Review Group recommends that the Dental Council of Ireland and the General Dental Council U.K. urgently address the outstanding issue in relation to cross jurisdictional training pathways. In the past there have been difficulties in establishing which jurisdiction would provide the qualification.

IRISH TRAINING MODELS

Cork Dental School

Cork Dental School commenced a three year specialist training course in October 2006. The training is full-time and of a three years duration. The intake in October 2006 was four students. Over a three year period the School will train two students per year. Students have three days clinical practice, one day of didactic training and a day a week for study/research. Successful candidates will be awarded a Doctorate in Clinical Dentistry.

Cost of training place to HSE: the salary cost is approximately 58,389 per year, and the fees are 30,000 per annum per student. Students are contracted to the HSE after qualification for a two year period.

As part of the training programme postgraduate students are restricted to treating approximately 125 patients (Erasmus Guidelines).

Dublin Dental School

During the period 1989 to 1999 the Dublin Dental School and Hospital trained 10 postgraduate students to specialist level and five specialists completed training to consultant level. During the period 2000 to 2005, 16 dentists completed orthodontic specialist training. This training was in conjunction with regional orthodontic units and all trainees were funded by the State with a requirement to work in the public service for three years following graduation.

Cost of training place to HSE: the salary cost is approximately 58,389 per year and the fees were 16,000 per annum per student. Last intake of students qualified in 2005.

As part of the training programme postgraduate students were restricted to treating approximately 125 patients (Erasmus Guidelines). The training programme followed the guidelines of the Erasmus Project (see Appendix 9, Houses of the Oireachtas, Joint Committee on Health & Children, Fourth Report. Review of Public Orthodontic Services – June 2005). The Dublin Dental School & Hospital is currently unable to provide a training programme but hopes to recommence training in 2007.

In 2007 the training programme will be primarily based in the Dental School with one day in the regional unit, this is subject to the appointment of an additional Senior Lecturer/Consultant in the Dublin Dental School.

Advantages of Irish Training Models

The advantages of postgraduate training in Ireland are the students treat health service patients during the course. There is a flexible transition from postgraduate student to working specialist.

Disadvantages of Irish Training Models

The programme which operated in the Dublin Dental Hospital & School had a considerable impact on service provision as Consultant Orthodontists who were involved in the programme were also service providers and could spend a significant proportion of their clinical week providing training.

The Joint Oireachtas Fourth Report Review of Public Orthodontic Services (June 2005) recommended that the Training Programme provided by a number of Orthodontists in the former Mid-Western Health Board area that was stopped should be reinstated immediately, with the requisite academic supports, as a means of further increasing the supply of trained orthodontists.[4]

Distance Learning Model

The programme was previously undertaken in regional orthodontic units (e.g. Mid-Western Health Board). It involved students moving between health board units. The academic component consisted of lectures from visiting lecturers, early morning tutorials, and attendance at specialised orthodontic courses in the UK. The focus of the programme was on training, and treatment to the highest standard for health board patients by salaried health board employees. The Royal College of Surgeons syllabus was followed.

It was proposed that a similar programme be provided over an extended period. Students would have ample time to both study and provide treatment. Bristol Dental School has indicated that it would be in a position to offer a distance learning programme for specialist training in Ireland.

The Review Group sought advice from the Dental Council of Ireland and the Irish Committee for Specialist Training in Dentistry on this training option. The Group wished to establish if a trainee who pursued this training programme would be eligible for entry on the Registrar of Specialists (Orthodontics) maintained by the Dental Council of Ireland. The Dental Council of Ireland recommended that a formal submission on the training course should be sent to the Irish Committee for Specialist Training in Dentistry.

Advantages

The programme would permit students to complete patient treatment.

Disadvantages

The proposed programme would involve a very high level of consultant commitment to student training.

DISCUSSION ON TRAINING MODELS

The Review Group recognise the need for ongoing training for both Specialist and Consultant Orthodontists. This training needs to be of the highest standard and must conform to the regulatory requirements both in Ireland and in the European Union.

Training programmes must meet the standards set by the Irish Committee for Specialist Training in Dentistry so that those who complete the course are eligible to register on the Specialist Registrar for Orthodontics maintained by the Dental Council of Ireland. The Review Group recognised that all training models should consider the manpower requirements of the HSE public orthodontic service.

[4] Conclusions & Recommendation from Joint Oireachtas Committee Fourth Report Review of Public Orthodontic Services (June 2005), page 13.

The HSE needs to continue to access training in the two dental schools in Ireland, in the United Kingdom as long as the option remains viable and through the use of outreach models such as the Distance Learning Model outlined previously.

The HSE can only support training models which meet the statutory requirements and standards.

Training the Orthodontic Team

The Review Group considered the skill mix required to provide a public orthodontic service. This includes Consultant Orthodontists, Specialist Orthodontists, and Dentists within the HSE Orthodontic Service, Dental Nurses, Radiographers, Dental Hygienists, Orthodontic Therapists, and the Primary Dental Care Service, the Allied Specialised Dental Services, management and administrative staff.

Consultant Orthodontist

Consultant Orthodontists are responsible for the development, management and provision of the public orthodontic service to eligible patients. The consultant provides guidance to HSE staff regarding orthodontic procedures. They are responsible for the organisation and delivery of patient care, liaising with consultant colleagues in other disciplines to plan and provide both the care for these patients and the development of clinical protocols.

There is an established consultant training pathway in the United Kingdom (FTTA fixed term training appointment). The previous Irish consultant training pathway paralled this UK model. No one is pursuing a consultant training programme in Ireland using this model at this time.

Specialist Orthodontist

The Specialist Orthodontist participates in the organisation and delivery of orthodontic services under the overall direction of the Consultant Orthodontist. The Specialist provides complex orthodontic treatment to patients, assists in assessment of need for orthodontic treatment in accordance with Guidelines, and participates in clinical audit. The Specialist Orthodontist is trained to a level which permits them to operate independently.

Dentists within the HSE Orthodontic Services

One of the entry requirements for specialist training is the MFD/S examination. This is a postgraduate examination run by the Royal College of Surgeons in Ireland and the United Kingdom. At present one years experience in a recognised training post (e.g. one year as a House Officer in a Dental School) is required to sit the examination.

The Review Group noted that the entitlement to sit the MFD/S requirements is due to be amended in 2007. In the past to be eligible to sit the MFD/S examination dentists needed one year's experience working in a Dental Hospital. In 2007 dentists who work in the public dental service with 5 years experience (post qualification) will no longer require the dental hospital experience they will then be eligible to pursue the MFD/S (i.e. entry requirement to Specialist Orthodontist course). This change will facilitate HSE dentists to sit the MFDS examination thereby achieving the basic entry requirement for Specialist Orthodontist training.

The HSE needs to establish the number of dentists currently employed in the public orthodontic service who are interested in pursuing both the MFDS examination and specialist training. Arrangements should be made to facilitate these staff.[5]

Orthodontic Therapist

The orthodontic therapist will be permitted to undertake cleaning and polishing of teeth, take impressions, bite registration and photographs. The therapist will be allowed to fit space maintainers, retainers, orthodontic headgear and other duties associated with the provision of orthodontic treatment. The orthodontic therapist will only carry out work after the orthodontist has examined the patient and has indicated the course of treatment to be provided by the patient. All treatment provided by the therapist must be inspected and approved by the orthodontist before the patient leaves the premises.

The Review Group examined the proposed duties of the orthodontic therapist grade. However in the absence of a training programme and staff working in this position it is difficult to make a recommendation on the introduction of the grade.

Dental Schools are currently preparing a training course for the orthodontic therapist grade. The Review Group recommends that the Dental Schools continue this preparation.

Dental Nurse

The Dental Nurse is an integral part of the team providing public orthodontic treatment to eligible patients. The Dental Nurse provides clinical support to orthodontists and works closely with colleagues to improve the quality of the service to patients. Duties include chairside assistance, preparation of surgery, sterilisation of instruments and disinfection of clinical areas, and administrative duties such as recording, charting clinical notes and organising appointments.

[5] Recommendation 11, Joint Oireachtas Committee on Health and Children Report on The Orthodontic Service in Ireland, February 2002 refers.

National Training courses for dental nurses both full-time and part-time are run by Dental Schools in Cork and Dublin. These training courses which are available in Dublin, Cork and a number of other centres nationally, are adequate to meet the needs of the HSE.

Video Conferencing

In 2005 it was noted that video conferencing facilities exist in the Dental Schools in Cork and Dublin for dental hygienist and dental nurse training.

Video conferencing facilities should be considered in the context of the development of outreach training programmes where a significant group of trainees are involved.

Training Recommendations

- The Review Group recommends that the Dental Council of Ireland and the General Dental Council U.K. urgently address the outstanding issue in relation to cross jurisdictional training pathways.

- The HSE needs to continue to access training in the two dental schools in Ireland, in the United Kingdom as long as the option remains viable and through the use of outreach models such as the Distance Learning Model outlined in this report. The HSE can only support training models which meet the statutory requirements and standards.

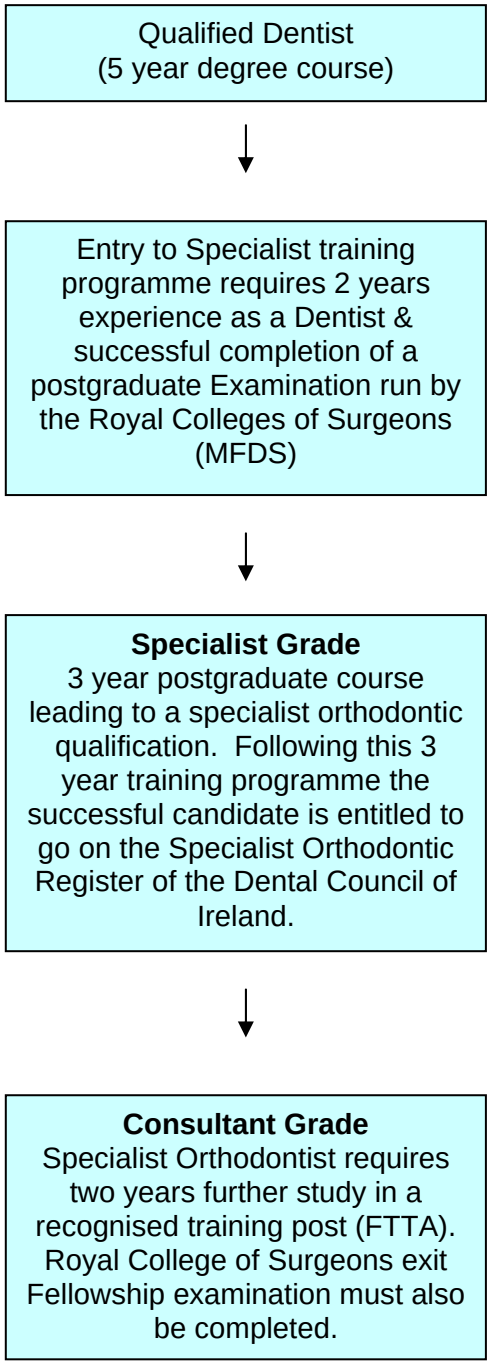
- The Review Group recommends that an additional Senior Lecturer/Consultant post is approved for the Dublin Dental School and Hospital to allow the re-introduction in 2007 of the Specialist Orthodontist training programme.

- The Review Group noted that four specialists commenced State funded training in the U.K. in 2005. The Review Group recommends that the Health Service Executive continue to support the four training places in the United Kingdom and that this funding should be transferred to support training in Ireland when the current cohort of students qualify.

- The Review Group recommends that a uniform sponsorship agreement be established for specialist orthodontic training and those sponsored (sponsorship includes salary for three years and fees) should commit to working in the public orthodontic service for a period of four years.

- The Review Group recommends that in future, funding and sponsorship agreements for training of Specialist Orthodontist should come under the remit of the Assistant National Director Professional Education & Development.

TRAINING PATHWAY IN ORTHODONTICS



MANPOWER PLANNING

CHAPTER 5

Recommendations from Joint Oireachtas Committee on Health and Children

Report on the Orthodontic Service in Ireland (February 2002)

MANPOWER PLANNING

Recommendation 9
A second Consultant Orthodontist be appointed to each Health Board to speed up assessments and facilitate training of Dentists and trainee specialists.

[Chapter 5.12(iv)]

Recommendation 15
Specialist manpower levels should be based on the 1985 guidelines and on a caseload of 250 completed cases each year per Specialist Orthodontist.

[Chapter 6.4]

Recommendation 17
The number of permanent whole-time posts of Specialist Orthodontist in each health authority be decided as a matter of urgency and that the position of existing qualified specialists and trainees be sorted so that the remaining posts in Health Boards are clearly identified.

[Chapter 7.7(ii)]

Recommendation 18
Planning should now commence involving the appropriate recruitment body, the Department and the Health Authorities to:

- identify and target recruitment of 15 Irish postgraduates students mentioning in 7.5
- identify countries and schools training prospective Specialists and identify appropriate times for focused targeting of personnel.
- Travel to interview applicants for Specialist posts in their country of residence if necessary.

[Chapter 7.7(iii)]

Recommendation 19
The health authorities prepare an attractive pack for circulation to prospective Specialist applicants.

[Chapter 7.7(iv)]

Recommendation 20
Priority in the filling of permanent whole-time specialist posts be given to health authorities with the greatest need e.g. Southern and Eastern authorities.

[Chapter 7.7(v)]

Recommendation 21
A recruitment campaign for permanent whole-time Specialist posts focusing on Scandinavia, Northern Europe and U.S.A. be undertaken as soon as possible in view of the perceived overproduction of Specialists in these areas.

[Chapter 7.7(vi)]

Recommendation 23
Consideration be given to the provision of free accommodation or accommodation allowance, for first two years, to qualified applicants from aboard.

[Chapter 7.7(viii)]

MANPOWER PLANNING

HSE Orthodontic Staffing levels are identified in Appendix A.

Consultant Orthodontist

The role of consultant is generic to the United Kingdom and Ireland and does not exist in Europe.

The introduction of the Specialist Orthodontist grade has implications for the number of consultants required in the public orthodontic service. Specialists are trained to work independently and deal with all patients presenting in the public orthodontic service. Therefore the number of consultant orthodontists required to work in the service may not be as high as identified in Recommendation 9 Joint Oireachtas Committee on Health and Children Report on The Orthodontic Service in Ireland, February 2002.[6] The implementation of this recommendation would require the appointment of ten additional orthodontic consultants.

Each administrative region should have a minimum of two consultants. Some regions may require an additional consultant due to particular area needs e.g. demography, geography.

The Review Group recommends that consultant orthodontist staffing levels should be reviewed.

Specialist Orthodontist

Specialists are required in each of the regions and at a minimum the population ratio should be 1 Specialist per 125,000. The introduction of the Specialist Grade occurred in 2002 and staffing levels are still stabilising. Thirteen Specialist Orthodontists joined the public service in October 2005. Given the variety and complexity of cases, and the increase in productivity which occurs with experience it is difficult to predict Specialist Manpower requirements particularly when the revised guidelines are considered.

In the absence of agreed measurement indicators it was not possible for the Review Group to make more definitive recommendations on the number of Specialists required.

The Review Group recommends that the number of Specialist Orthodontists employed in the HSE should be reviewed every two years.

Orthodontic Therapist

The introduction of the Orthodontic Therapist Grade will assist in the provision of a public orthodontic service.

The Review Group recommends that the terms and conditions of this grade should be negotiated by the HSE Employers Agency.

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[6] Recommendation 9 "A second Consultant Orthodontist be appointed to each Health Board to speed up assessments and facilitate training of Dentists and trainee specialists".

Physical Infrastructure

The Review Group noted that in many areas the existing physical locations are functioning at full capacity. Experience in a number of locations has shown that service provision out of hours is a viable option and meets patient needs as they find it more accessible.

The Review Group recommends that the administrative areas examine all options to maximise utilisation of existing resources (both physical and staffing). When this exercise has been completed further investment should be considered.

The Lead Local Health Manager with responsibility for Oral Health in conjunction with Local Health Managers and Clinicians should be responsible for the development of the capital investment plan. The Review Group recommends that the infrastructural review should be completed by July 2007.

Information on Vacancies & Accommodation Allowance

The Review Group noted that all Specialist and Consultant posts are advertised through the Public Appointments Service and all public competitions publish information on the vacant post(s), job description and provide a brief description of services.

Salary Scales at 1st June 2006.

Consultant Orthodontist	164,516
Specialist Orthodontist	132,347

The current salaries for the Consultant Orthodontist and Specialist Orthodontist make the posts more attractive. The support for Specialist training has attracted staff to the public orthodontic service which offers flexible working hours, an opportunity to work as part of a team, support to attend conferences and courses.

The public orthodontic service also has a support structure which deals with the business issues related to the provision of the service.

The Review Group believes it is possible to fill vacancies without the necessity to provide the accommodation allowance recommended in the Joint Oireachtas Committee on Health and Children Report on the Orthodontic Service in Ireland (February 2002) [Recommendation 23 refers].

Manpower Planning Recommendations

- The Review Group recommends that consultant orthodontist staffing levels should be reviewed by each administrative region.

- The Review Group recommends that dentists currently employed in HSE orthodontic services should be facilitated to pursue the MFDS requirement (entry requirement for specialist training).

- The Review Group recommends that the number of Specialist Orthodontists employed in the HSE should be reviewed every two years.

- The Review Group recommends that the terms and conditions of this the Orthodontic Therapist grade should be negotiated by the HSE Employers Agency.

- The Review Group recommends that the administrative areas examine all options to maximise utilisation of existing resources (both physical and staffing). When this exercise has been completed further investment should be considered.

- The Lead Local Health Manager with responsibility for Oral Health in conjunction with Local Health Managers and Clinicians should be responsible for the development of the capital investment plan. The Review Group recommends that the infrastructural review should be completed by July 2007.

SERVICE PROVISION

CHAPTER 6

Recommendations from Joint Oireachtas Committee on Health and Children

Report on the Orthodontic Service in Ireland (February 2002)

SERVICE PROVISION

Recommendation 24
Each Health Board initiate a review of its awaiting assessment lists immediately.
[Chapter 8.4]

Recommendation 25
An automated appointment system be considered for use by each Health Board.
[Chapter 8.5]

Recommendation 30
Planning for the orderly provision of oral surgery in the Health Boards commence immediately.
[Chapter 8.10]

Recommendation 31
An accurate system of outcome measurement and audit is put in place as a matter of urgency to verify completed cases, confirm quality and facilitate comparisons.
[Chapter 8.11]

Assessment Initiative

Where lengthy historic assessment waiting lists exist consideration should be given to assessment initiatives[7] to establish the number of eligible patients who require treatment. Assessment and treatment waiting lists can change over time e.g. when patient changes address. A validation[8] of the exisiting waiting list must take place before an assessment initiative can occur.

To prevent the build up of further assessment waiting lists, assessment initiatives should be organised as required. Patients should be advised of their eligibility for a public orthodontic treatment place at the earliest possible date. At the time of assessment patients should be advised of the waiting time for a treatment place.

HSE Orthodontic Waiting Lists for Assessment and Treatment at 30th September 2006

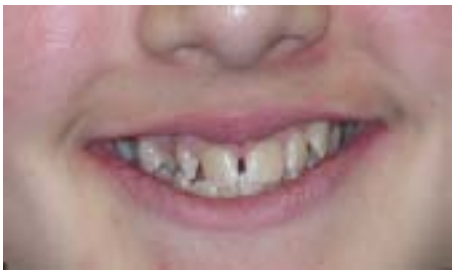
	Assessment Waiting List		Treatment Waiting List			
HSE Area		Average Waiting Time (Months)	Category A	Waiting time (Months)	Category B	Waiting time (Months)
South Western	142	3-6	468	<6	269	<12
East Coast	177	3	75	6-12	321	12-18
Midland	83	3	Nil	No waiting time	51	6
Dublin Mid Leinster	**402**		**561**		**641**	
Northern	25	<3	8	<3	1279	<36
North Eastern	Nil	Nil	3	1.5-2	377	12-15
Dublin North East	**25**		**11**		**1656**	
Mid Western	1017	24-36	Nil	No waiting time	786	24-36
North Western	1311	10	284	16	1086	29
Western	232	1	Nil	No waiting time	693	18
West	**2560**		**284**		**2565**	
South Eastern	408	<5	Nil	No waiting time	622	18
Southern	3182	42-48	Nil	No waiting time	3685	42-48
South	**3590**		**0**		**1307**	
Total	**6577**		**856**		**9169**	

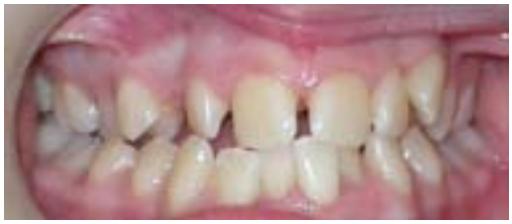
* Some dealt with in 6 months.

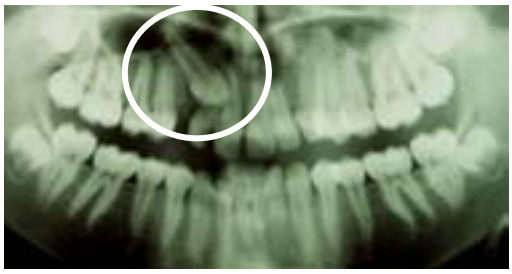
[7] Assessment Initiative is a number of assessment clinics undertaken outside normal working hours to clear a waiting list.

[8] Validation – contacting public orthodontic patients to see if they remain interested in an assessment appointment or treatment place

Impacted canine - Tooth in the palate



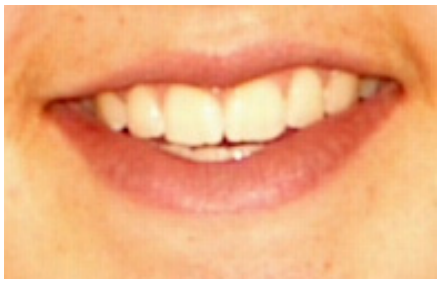


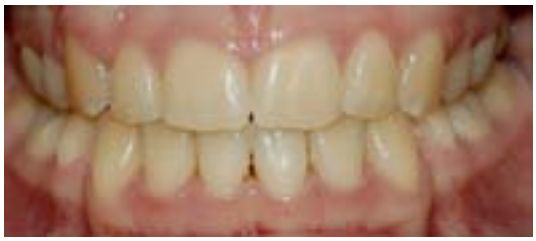


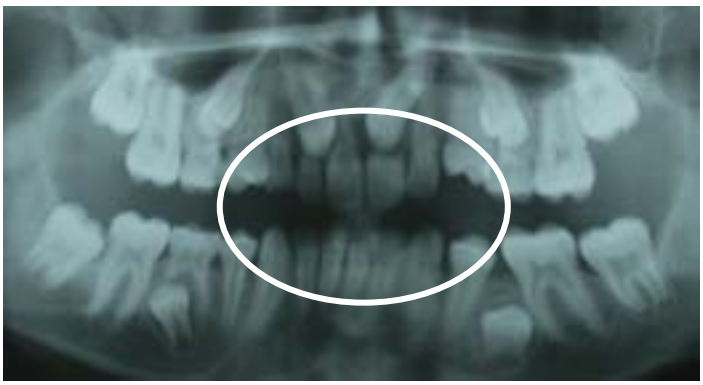
X-ray shows the eye tooth in the incorrect position

Treatment involves wearing orthodontic appliances upper and lower arch with a surgical procedure to uncover the buried eye tooth.

Treatment time - 2 years 4 months
Total no of visits – 27 visits







These cases are considered high priority as they can damage the roots of the adjacent permanent teeth leading to the loss of these teeth.

Information Technology

The Review Group noted that five orthodontic services currently use Orthotrac (a computerised patient management system which includes clinical records).

The Review Group recommends that the ICT service is asked to review the efficacy of Orthotrac and make a recommendation on a uniform system for use throughout the national public orthodontic service.

Interdisciplinary Teams

The Review Group noted that orthodontic services do not operate in isolation. In order to provide many types of orthodontic treatment allied specialised services are required to support the team, this is illustrated in flow charts on pages 48, 49 and 50. 33% of the patients on the Category A waiting list (snapshot taken 18 October 2006) require oral surgical, periodontal or maxillofacial surgical services in addition to orthodontic treatment.

If the range of allied specialised services is not available the ability of orthodontic services to provide treatment is significantly delayed or not possible at all. Any delays involving patients wearing fixed appliances can significantly impact on dental health. The expansion of the orthodontic services nationally has strained the primary dental care service and interdisciplinary teams.

Primary Care Dental Service:

The Primary Care Dental Service provided the following treatment:

- Prevention, Education, assessment and treatment (fillings and extractions) for children up to age 16.
- Adult Choice of Dentist Scheme (Dental Treatment Services Scheme)
- Extraction service for children under sedation.
- Services to Patients with Special Needs.
- Oral Health Promotion.
- Monitoring of Fluoride Levels
- Referral of patients to the orthodontic service for assessment.

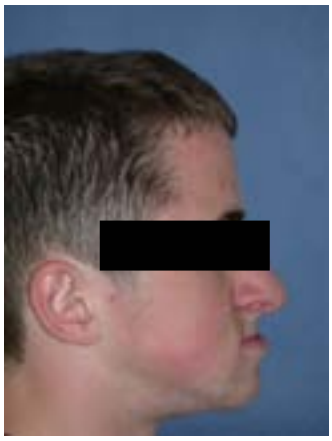
Many patients who are eligible for orthodontic treatment attend the primary dental care service for restorations, extractions and oral hygiene instruction.

Oral Surgery Services:

23% of Category A patients (snapshot taken on 18/10/2006) require surgical extraction or surgical exposure of buried teeth as part of their orthodontic treatment (See Impacted Canine Patient Journey page 42). Some of these procedures are too complex to be carried out under local anaesthetic and require general anaesthetic. These patients currently experience significant delays in accessing the oral surgical services which in turn delays the orthodontic treatment.

Maxillofacial Surgical Services:

10 % of Category A Patients (snapshot taken on 18/10/2006) have a significant skeletal discrepancy. Definitive correction of these cases requires a combined treatment approach involving the orthodontic and the maxillofacial surgical team. See patient journey, page 46.



Strong bottom jaw requiring surgical correction
Maxillofacial Surgery

This is an example of a patient with a discrepancy in the size of his top and bottom jaws.

Correction of this malocclusion will require a combination treatment of upper and lower fixed appliances together with surgery to both top and bottom jaws to correct the skeletal relationships.

Oral Surgery and Maxillofacial Surgery

In 2005 the Joint Oireachtas Committee recommended "that at least 5 additional Oral Surgeons and 5 Maxillofacial Surgeons should be appointed without delay to complement Orthodontic treatment services"[9].

The Review Group recommends that the Lead Local Health Manager for Oral Health in each administrative region should examine the regions existing interdisciplinary services and make appropriate recommendations to the national forum to meet oral heath needs in each region.

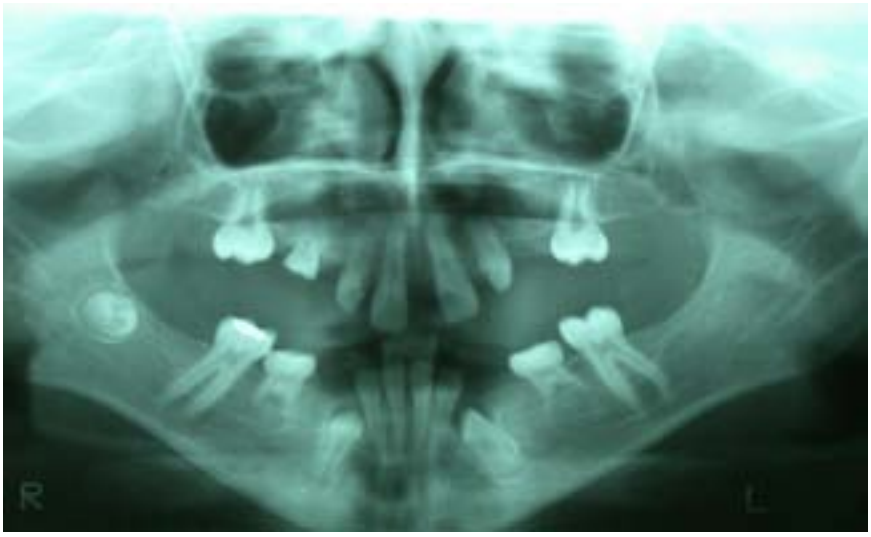
The Review Group recommends that the orthodontic units be allowed direct referral access to the National Treatment Purchase Fund to access surgical interventions.

Restorative – Special Needs Dentistry

Patients with Hypodontia (multiple missing teeth see X-ray page 45) comprise 4% of the Category B treatment list (snapshot taken 18/10/06, page 50). These patients require advanced restorative treatment and close co-operation between several specialities is required. Examples of this type of patient journey can be found of pages 51 and 52.

[9] Houses of the Oireachtas Joint Committee on Health & Children. Fourth Report. Review of Public Orthodontic Services June 2005.

Hypdontia – multiple missing permanent teeth.



This patient is missing 14 permanent teeth. The patient will requires very complex restorative treatment, implant replacement of the missing teeth together with orthodontic treatment to position the teeth present into ideal position to facilitate implant placement.

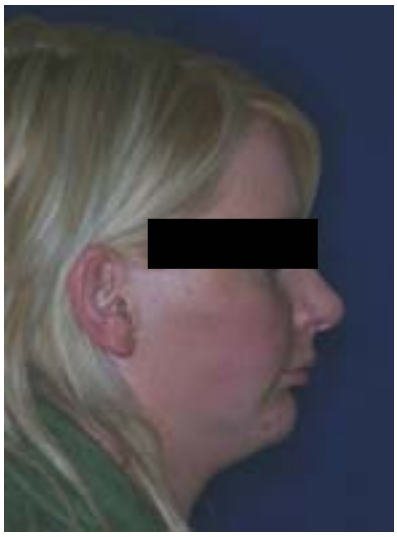
Clinical Audit

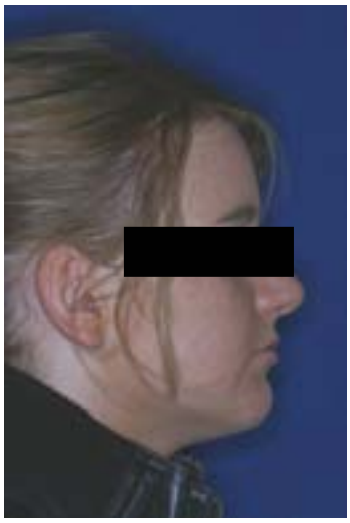
The Review Group recommends that clinical audit be introduced, supported (both financial and manpower) and encouraged in all orthodontic units and the knowledge gained should be shared within units and at clinical meetings.

Clinical staff in each administrative region should hold two half day meetings annually to share knowledge gained from clinical audit. These meetings should be organised by the Consultant Orthodontists.

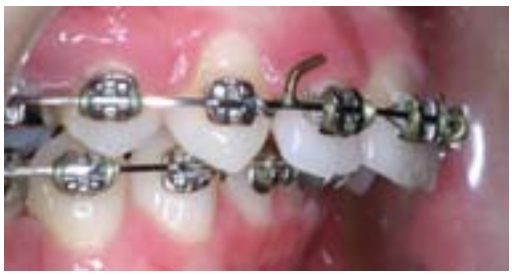
A national structure in Oral Health would facilitate the development and roll-out of clinical audit and quality improvement.

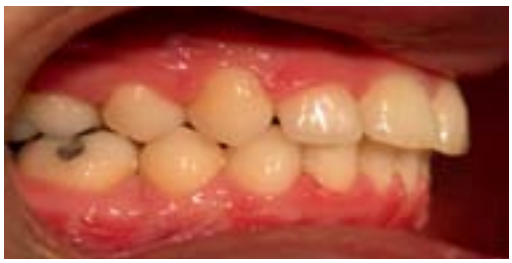
Orthognathic Correction of Skeletal Disharmony
Maxillofacial Surgery





This patient had a very weak bottom jaw. In a non growing patient (over 16 yrs) treatment of this condition involves upper and lower fixed appliances together with an operation to move the bottom jaw forward. The braces remain attached to the teeth during the surgery and are removed approximately six months after the surgery.





Treatment time – 4 years 9 months
Total no of visits – 41 visits

The treatment time here was extensive due to delays experienced in accessing the surgical services required both at the start of treatment and prior to surgery.

Service Provision Recommendations

- The Review Group recommends that the ICT service is asked to review the efficacy of Orthotrac and make a recommendation on a uniform system for use throughout the national public orthodontic service.

- The Review Group recommends that the Lead Local Health Manager for Oral Health in each administrative region should examine the regions existing interdisciplinary services and make appropriate recommendations to the national forum to meet oral heath needs of patients in each region.

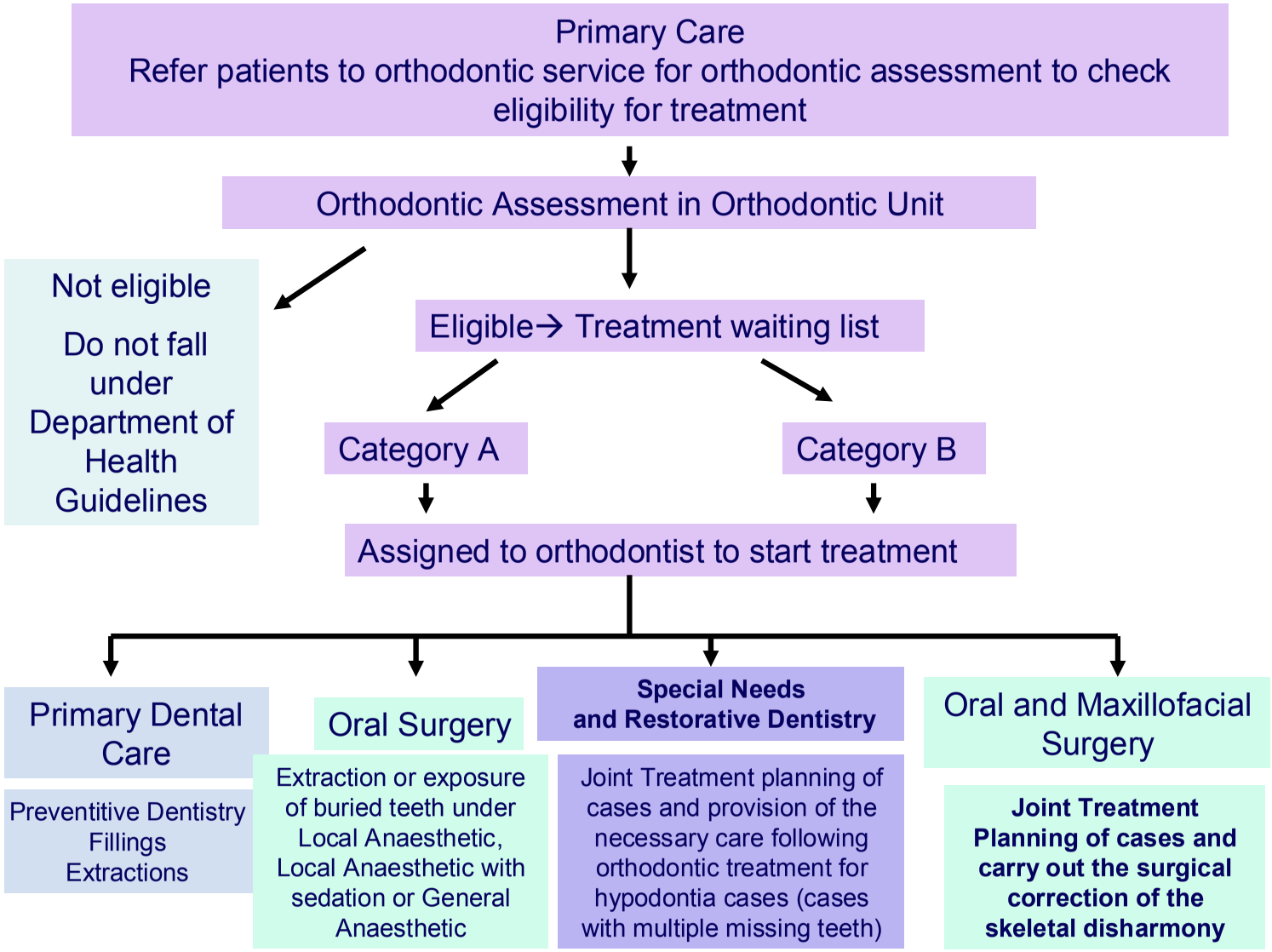
- The Health Service Executive requires that all orthodontic waiting lists are validated at regular intervals. Validation of the waiting list must occur prior to any assessment or treatment initiative.

- The Review Group recommends that the orthodontic units be allowed direct referral access to the National Treatment Purchase Fund to access surgical interventions.

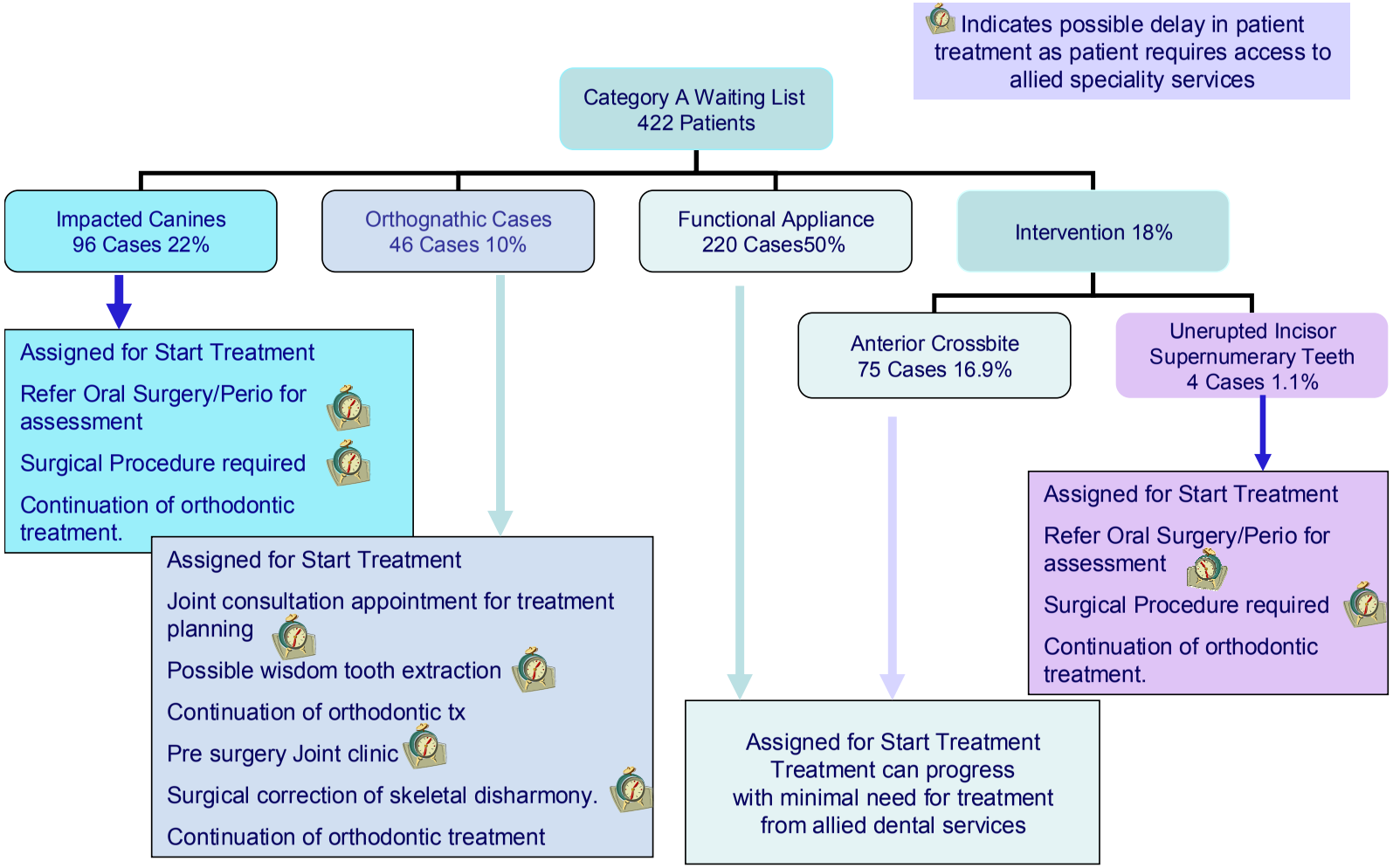
- The Review Group recommends that clinical audit be introduced, supported (both financial and manpower) and encouraged in all orthodontic units and the knowledge gained should be shared within units and at clinical meetings.

  Clinical staff in each administrative region should hold two half day meetings annually to share knowledge gained from clinical audit. These meetings should be organised by the Consultant Orthodontists.

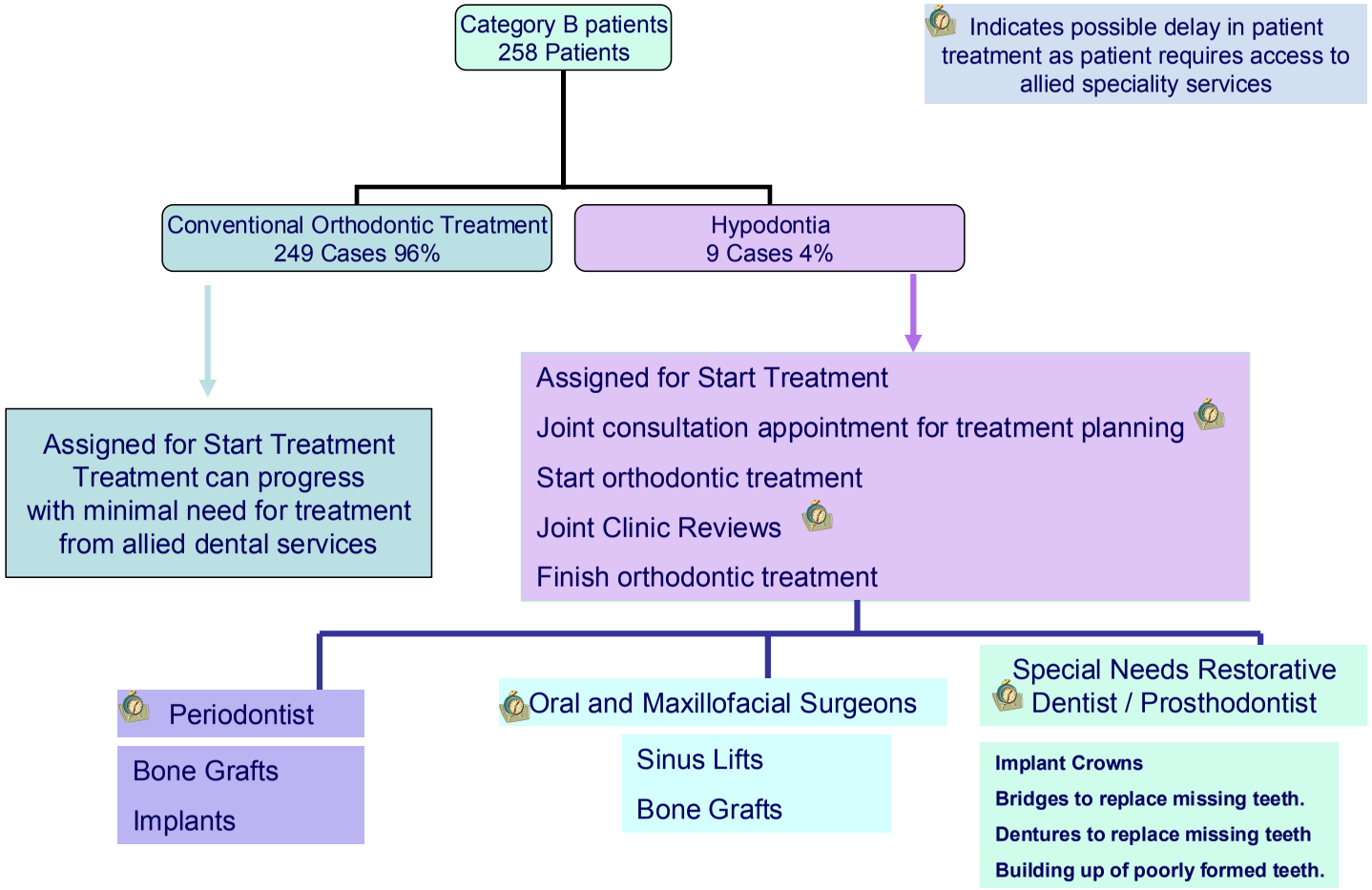
  A national structure in Oral Health would facilitate the development and roll-out of clinical audit and quality improvement.


Primary Care
Refer patients to orthodontic service for orthodontic assessment to check eligibility for treatment
Orthodontic Assessment in Orthodontic Unit
Not eligible
Do not fall under Department of Health Guidelines
Eligible→ Treatment waiting list
Category A
Category B
Assigned to orthodontist to start treatment
Primary Dental Care
Preventitive Dentistry
Fillings
Extractions
Oral Surgery
Extraction or exposure of buried teeth under Local Anaesthetic, Local Anaesthetic with sedation or General Anaesthetic
Special Needs and Restorative Dentistry
Joint Treatment planning of cases and provision of the necessary care following orthodontic treatment for hypodontia cases (cases with multiple missing teeth)
Oral and Maxillofacial Surgery
Joint Treatment Planning of cases and carry out the surgical correction of the skeletal disharmony

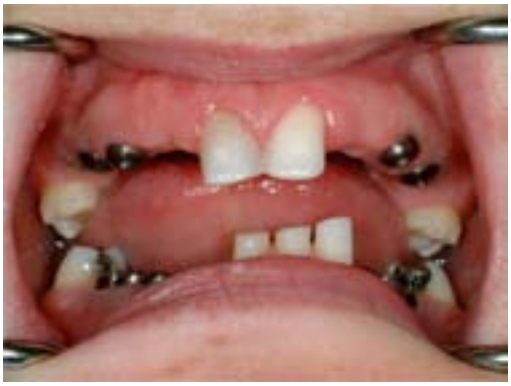
Category A Waiting List
Snapshot of waiting list on 18/10/06 in Orthodontic Unit St. James Hospital.

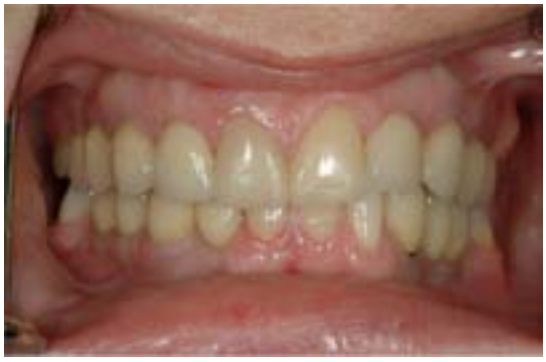


Category B Waiting List
Snapshot of waiting list on 18/10/06 in Orthodontic Unit St. James Hospital.



Special Needs Restorative Dentistry
Severe Hypodontia – multiple missing teeth



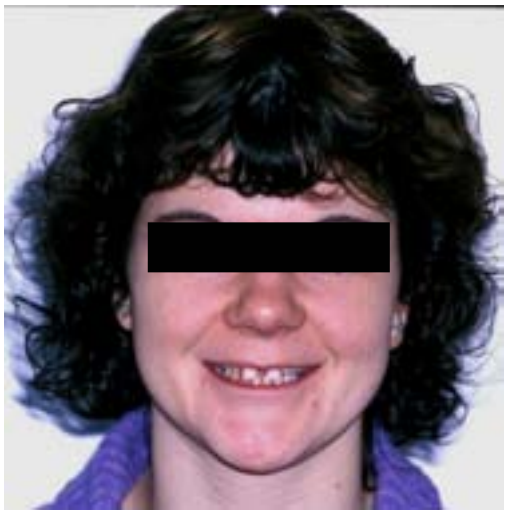


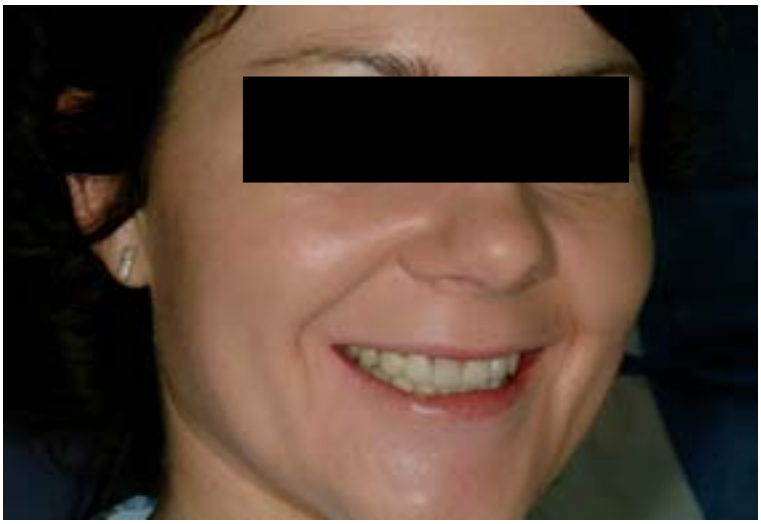
Patient: 24-year old female
Presenting Complaint: painful baby teeth.

Treatment:
- Orthodontic alignment of teeth
- Implant placement (13)
- Restorations
- Dental Hygiene support

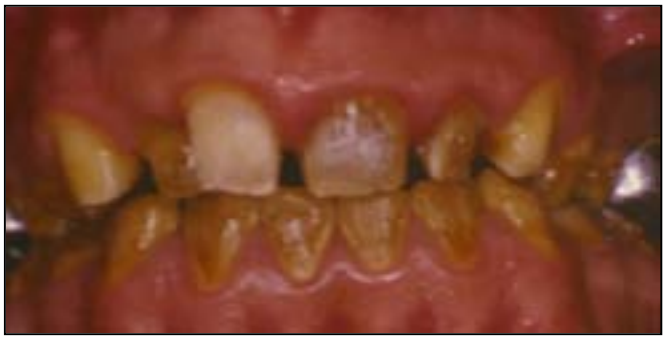
Maintenance: Will require ongoing reviews and hygienist support and possibly 2-3 re-treatments over her lifetime.

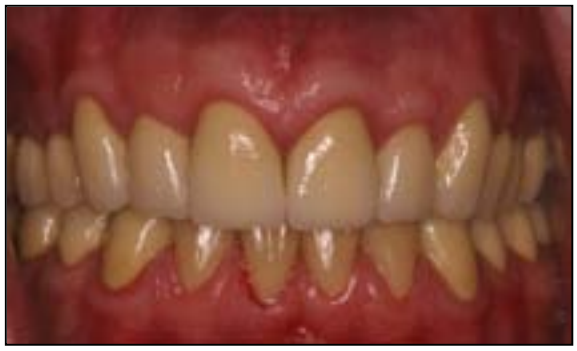
Number of Appointments: 45
Cost of treatment: 15,000
Estimated Private cost: 63,000





Special Needs Restorative Dentistry - Amelogenesis imperfecta (abnormal enamel formation)





Patient: 20 year old male

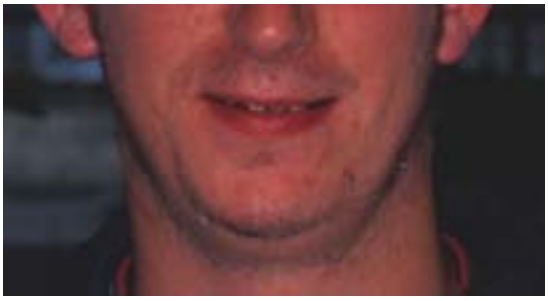
Presenting Complaint: Presented with very discoloured teeth. Very conscious of appearance. One of three affected siblings

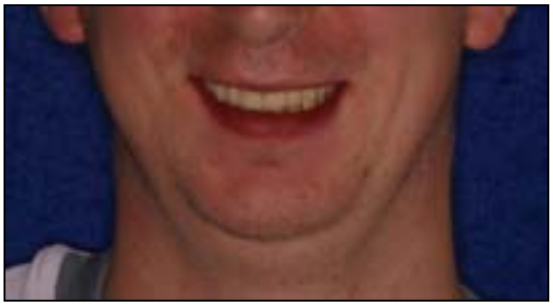
Treatment:

- Mock up of new teeth appearance and agree final tooth appearance
- Orthodontic treatment to improve tooth alignment
- Periodontal surgery to lengthen teeth
- Long term provisional restorations
- Definitive 28 crowns followed by on-going reviews

Maintenance: Will require 3-monthly reviews. Life span of treatment 10-12 years. Will need 2-3 re-treatments over his lifetime.

Number of Appointments:	**78**
Cost of treatment:	**£18,000**
Estimated Private	**£80,000**





REMAINING RECOMMENDATIONS FROM REPORT ON THE ORTHODONTIC SERVICE IN IRELAND (FEBRUARY 2002) NOT ADDRESSED UNDER OTHER HEADINGS

CHAPTER 7

Recommendations from Joint Oireachtas Committee on Health and Children

Report on the Orthodontic Service in Ireland (February 2002)

Recommendation 1

In the continued absence of agreement from all Regional Consultants, the areas of dispute should be referred to an expert panel. This panel should consist of an expert nominated by the three consultant orthodontists in question, an expert nominated by the other parties in the dispute, and an independent Chairman to be agreed by the two other nominees. The finding of this panel should be binding on all parties.

[Chapter 8.12]"

Relationships between key players[10]

1.7 It became clear to the Joint Committee during its consideration of this matter that there were difficulties between the three longest serving Consultant orthodontists in the Health Board sector and other key players in the sector.

It is not within the present remit of the Joint Committee to give views on the rights or wrongs of these difficulties. However having regard to the magnitude of the problems facing the service the Joint Committee would appeal to all involved to now give priority to the National interest in this area. The Joint Committee note the recent appointment of a Director of Training by the Irish Committee for Specialist training in Dentistry and would ask all key players to co operate with him in the development of existing training programmes and establishing new programmes.

Co-operation of Regional Consultants[11]

8.12 The co-operation of all regional consultants is required if the arrears are to be decreased and an efficient service delivered. The recently appointed Director of Training is endeavouring to get the co-operation required. In the continued absence of agreement from all Regional Consultants, the areas of dispute should be referred to an expert panel. This panel should consist of an expert nominated by the three consultant orthodontists in question, an expert nominated by the other parties in the dispute, and an independent Chairman to be agreed by the two other nominees. The findings of this panel should be binding on all parties.

The Chair highlighted the significant progress made by the Review Group in reaching agreement on guidelines and training issues. The outstanding pieces now relate to personal issues raised by a number of consultants. The HSE has a policy to address staff grievances called "Dignity at Work". Under that policy a redress route exists for all employees of the HSE. The policy allows for the appointment for third parties to independently adjudicate on issues of concern.

[10] Page 14 Joint Oireachtas Committee on Health and Children Report on The Orthodontic Service in Ireland, February 2002 refers.
[11] Page 42 Joint Oireachtas Committee on Health and Children Report on The Orthodontic Service in Ireland, February 2002 refers.

The Review Group recommends that under the HSE's Dignity at Work Policy, an independent, skilled and experienced person, acceptable to all parties, be appointed by the Chief Executive Officer to investigate complaints of Consultants A, B & C when received in writing, and make a report of the findings.

Recommendation 2

An Orthodontic Action plan should be prepared within the next months by Department of Health and Children in which critical success factors, performance indicators including timeframes for access to service and possible corrective action are clearly spelled out.

[Chapter 3.7(i)]

The Review Group Report sets out HSE policy in relation to orthodontic services. The Review Group considered in detail the existing data set and recommended its expansion. The Review Group also noted that the existing data definitions required clarification and uniform implementation.

The Review Group recommended the introduction of the following Performance measures. The proposed measures are an extension of the current data set used by the Department of Health. A number of existing data measures have been subdivided.

PERFORMANCE MEASURES

Assessment Waiting Lists

Total number of assessments completed since 1st January: _____
(to be included in data collection)

Average Waiting Time from Referral to Assessment

The average waiting time to be included once the new guidelines are in place (see data definitions). Grade 5 and Grade 4 replace Categories A and B on Department of Health data collection form.

Treatment Waiting Lists

Change from Category A and Category B to Grade 5 and Grade 4. It is hoped that in future when the collection systems permit to gather data on the waiting times for cases where there is a need for support from another service.

Total Number of Patients currently receiving treatment:-

- Active treatment with appliance.
- Observation i.e. patient assigned to clinician who is under treatment without appliance – under review e.g. canines, deciduous teeth, adult teeth.
- Patient in Retainers.

Total Number of Patients who had completed treatment since 1st January of year

- Active treatment completed – end of appliance therapy or active intervention.
- Functional finished.
- Debond.

Discharges

- Patients discharged following retention.
- Patients not eligible for public treatment place.
- Patient discharged – not compliant (e.g. regularly failed to attend for appointment or poor oral hygiene).

Collection of Data

It was noted that it may not be possible for all areas to commence collecting data at the same time. A lead in time may be required so that appropriate collection systems can be put in place in each orthodontic service.

Review

As some services collate data manually the sub-group felt that it would be appropriate to review the data collection to ensure consistency of data after six months.

A review of the data collected should be undertaken after 12 months of data collection.

DATA DEFINITIONS

Assessment Waiting Lists:
The number of referrals from the primary Dental Service awaiting assessment by orthodontist.

Average Waiting Time:
The length of time those currently being taken off the waiting list have waited. Excluding those referred as urgent (Category 5)

Treatment Waiting List:
Only patient's ready to start treatment should be placed on treatment waiting list. Where the patients will be eligible at a future date they should be reviewed and placed on the waiting list when ready to commence treatment.

Average Treatment Waiting Time by Category
This refers to standard orthodontic cases.

Recommendation 3

The proposed legislation for an independent Health Information and Quality Authority provides that the relevant Houses of the Oireachtas Committee may request it to review matters it considers appropriate, in a similar manner to the Public Accounts Committee's access to the Comptroller and Auditor General.

[Chapter 3.7(iii)]

The Review Group noted that this is a matter for the Department of Health & Children and the Interim HIQA is now in place.

Recommendation 6

The primary Dental Degree course in Dublin & Cork be upgraded/amended to cover primary level orthodontics.

[Chapter 5.12(i)]

The Review Group noted that this is a matter for the Dental Council of Ireland and the Dental Schools in Dublin and Cork.

Recommendation 14

Section 34 of the Dentists Act 1985, which sets out the duties of the Dental Council in relation to education and training; be amended to require the Council to ensure that the number of people in training is adequate to meet public dental needs.

[Chapter 5.12(ix)]

The Review Group noted that this is a matter for the Department of Health and Children.

Recommendation 16

The qualifications for the grade of Specialist Orthodontist be directed by the Minister as a matter of urgency.

[Chapter 7.7(i)]

The Review Group noted that the Specialist Grade is now in place.

Recommendation 26

A Grant-in-Aid option be provided for persons over 16 years on the treatment waiting lists either by amending legislation or through the Social Welfare System.

[Chapter 8.6]

The Review Group recommends that the possibility of a grant in aid scheme should be investigated by the Department of Health and Children's Eligibility Review Group.

Recommendation 27

Arrangements with the Dental Schools be negotiated to treat the maximum number of public service patients at a minimum fee.

[Chapter 8.7]

The Review Group noted that the Dental School in Dublin and Cork provide treatment for Health Service Executive patients.

Recommendation 29

The Joint Oireachtas Committee consider that the Chief Dental Officer of the Department of Health should be at least of equal status with Consultant Orthodontists.

[Chapter 8.9]

The Review Group noted that this is a matter for the Department of Health and Children.

APPENDIX A

ORTHODONTIC STAFFING

HSE Public Orthodontic Service Staffing Levels

Grade	Whole Time Equivalent
Consultant Orthodontist	9.25
Specialist Orthodontists	37.7
Senior Dental Surgeon	6.4
Dental Surgeon	6.77*
Radiographer	4.1
Dental Hygienist	6.4
Dental Nurses	82.56
Administrative Staff	26

*Since these figures were collected 2 dentists have commenced a three year postgraduate training course in Cork Dental School. When qualified they will be eligible to have their names entered on the Specialist Orthodontist Register.

The above figures may have changed since September 2006.

APPENDIX B

NOTES ON MEETINGS WITH DENTAL SCHOOLS

Video conference with Cork Dental School & Hospital

on 13th September 2006.

Cork:	Ms. K. Neville, School & Hospital Manager; Professor D. Millett, Professor of Orthodontics; Ms. G. Crowley, Local Health Manager, HSE.
HSE:	Mr. H. Kane, Chair, Orthodontic Review Group; Ms. M. FitzPatrick, Senior Manager.

Cork Dental School will commence a three year postgraduate orthodontic training course on 2nd October 2006. The four places on the course have been assigned and a sponsorship agreement has been put in place. Two of the current intake of students had previously been employed in the orthodontic unit in St. Finbarr's Hospital.

It was noted that the postgraduate students would receive all their training in the Cork Dental School and Hospital. The possibility of additional trainees with a regional commitment was discussed and Professor Millett emphasised that he was supportive of such a training model. Professor Millett indicated that subject to staffing he would be in a position to examine a regional component in 2007.

All candidates enrolled in the postgraduate orthodontic course must meet the entry requirements set down by University College Cork. The course is accredited by the National University of Ireland.

The Irish Committee for Specialist Training in Dentistry inspected the training programme, visited the training facilities and granted approval for an initial intake of four students with provision for an additional intake of four students in year three subject to staffing levels being increased. Any changes in the number of postgraduate students in training (including a regional component) would require the approval of the Irish Committee for Specialist Training in Dentistry.

Meeting with the Dublin Dental School & Hospital

15th September 2006

Dublin Dental School:	Professor N. Claffey, Dean; Professor J. Nunn, Mr. B. Murray, Chief Executive Officer.
HSE	Mr. H. Kane, Chair, Orthodontic Review Group; Ms. M. FitzPatrick, Senior Manager.

The purpose of the meeting was to discuss postgraduate orthodontic training.

The Dublin Dental School pointed out that whilst they had trained a large number of specialist orthodontists in the past they were not in a position to train any students commencing October 2006. The Dean advised that subject to approval for another Senior Lecturer/Consultant post they anticipated an intake of students in October 2007.

In the past the Dublin Dental School has co-operated closely with the regional orthodontic units and they would be happy to continue this type of training.

Professor Nunn pointed out the importance of exposing the postgraduate students to more than one trainer (hence the requirement for another Senior Lecturer/Consultant post). Professor Nunn also outlined the benefits to students of studying in an academic environment where they have access to multidisciplinary clinics, an ability to clarify issues with lecturers and the support of their peers.

Postgraduate students also have access to extensive library facilities, and support from other University departments when undertaking their research projects.

The postgraduate course offers the students an opportunity to treat a wide case mix with appropriate clinical and academic support.

The importance of international recognition of qualifications granted in Ireland was also highlighted.

GLOSSARY

GLOSSARY OF TERMS

Aesthetic Component	This is a 10 grade scale of dental images ranging from a very pleasing (1) to very unpleasing appearance (10)
Amelogenesis Imperfecta	Hereditary condition in which the enamel formation is disturbed. The teeth have an unusual surface but are not more prone to decay.
Anterior	Situated in the front, a term commonly used to denote the incisor and canine teeth
Appliance	A fixed or removable device which the orthodontist uses to change the position of teeth or jaws
Arch	The ensemble of teeth in either jaw in a horseshoe shape
Band	A thin strip of metal which is placed around the back teeth with dental cement and allows brackets to be attached
Banding	The process of cementing orthodontic bands to the teeth
Bite	An imprint of the teeth, usually on wax used to examine the relationship of the upper and lower teeth on study models
Braces	Appliances used to move teeth and jaws into the correct position
Bruxism	The grinding of the teeth during sleep; occurs in children and adults and causes abrasion of the tooth enamel
Buccal Segments	The side view of the bite
Caries	Dental decay resulting from the action of bacteria on sugary foods
Cast	A study model, in plaster or in stone, of the teeth and dental arch
Cephalometric X-Ray	An X-ray of the head and jaw bones that shows how the teeth and jaws are aligned and whether they are growing properly (c.f. tracing)
Class I malocclusion	The teeth are mis-aligned and irregular but meet correctly
Class II malocclusion	The upper jaw and teeth protrude relative to the lower jaw and teeth, the teeth may also be irregular
Class III malocclusion	The lower jaw and teeth protrude relative to the upper jaw and teeth, the teeth may also be irregular
Cleft Palate	A congenital opening in the palate, it maybe involve the hard or soft palate or both
Cleft Lip	A congenital opening in the lip
Consultation	A meeting with an orthodontist where the orthodontic problem is diagnosed and discussed, often with the aid of X-rays and study models
Congenital	Occurring before birth
Cross Bite	A malocclusion where the upper teeth bite inside the lower teeth
Crowding	A malocclusion caused by insufficient space for the teeth
Deciduous teeth	Baby or first teeth which fall out and are replaced by the permanent teeth, there are 10 in each jaw
Deep bite	Excessive over bite which may damage the gingiva
Dental Health	The overall health of the mouth, teeth, gums and supporting tissues
Didactic	The branch of education dealing with formal teaching
Erosion	A defect in the surface of a tooth, usually the result of the chemical action of acids in fizzy drinks

Eruption	Emergence of the tooth through the gums
Extra-Oral	Outside the mouth
Exit Fellowship	This is an examination run by the Royal Colleges which is taken towards the end of a consultant training pathway.
Fixed appliance	Any orthodontic component that is cemented or bonded to the teeth, it is extremely accurate at moving teeth and needs careful adjustment and monitoring
Fluoride	A natural element which strengthens teeth and prevents dental decay, when used during orthodontic treatment it helps protect the teeth from decay
Functional Appliance	A special removable appliance which changes the way the teeth and jaws bite together
FTTA	Fixed Term Training Appointment
Gingiva	That part of the gum which surrounds the teeth
Gingivitis	Inflammation of the gums. The gums are swollen and bleed easily
Guidelines (Clinical)	Statements developed through a specific process that are designed to assist health professionals make a consistent and reliable decision on the provision of treatment.
Hypodontia	Congenital absence of one or more teeth
Impacted tooth	A tooth that is embedded in the jaw and is prevented from erupting normally
Interceptive Treatment	Treatment carried out at an early age to allow the more definitive treatment to be more easily completed at a later stage
Intercuspal	The way the tips (cusps) of the teeth in one jaw meet with the teeth in the opposing jaw.
Intra-Oral	Inside the mouth
Intra Oral Traction	Attaching elastic bands or other devices to the upper and lower teeth in order to produce the force to move teeth
IOTN	Index of Orthodontic Treatment Need
Lingual	The lingual surface of a tooth is the surface adjacent to the tongue
MFD/S	Postgraduate examination run by the Royal Colleges which is taken a minimum of two years after qualification as a dentist. This examination is an entry requirement for Specialist Training Programmes.
Malocclusion	Abnormal occlusion of the teeth or jaws
Mandible	The lower jaw
Mastication	The processes of chewing food
M.Dent.Ch.	Postgraduate dental qualification awarded by the University of Dublin Trinity College
Maxilla	The upper jaw
Mouthguard	A soft moulded appliance which protects the teeth and orthodontic appliances when playing contact sports
Occlusal Anomalies	Anomalies which relate to the masticatory (chewing) surfaces of the posterior (back) teeth.
Occlusion	The meeting together of the upper and lower teeth and jaws
Open bite	A malocclusion in which the teeth do not meet together
Oral Surgery	The specialty of dentistry concerned with surgical procedures in and about the mouth and jaws
Orofacial	Pertaining to the mouth and face.

Orthodontics	This is the area of dentistry which deals with the position of the teeth and the way they come together (bite).
Orthodontic Therapist	Health care professional who works with orthodontist – responsible for changing archwires, taking records, etc. Carries out clinical procedures under the supervision of an orthodontist.
Orthognathic Surgery	Correction of the jaws by means of an operation, usually combined with orthodontic straightening of the teeth
Overbite	The vertical overlap of the upper over the lower teeth
Overjet	The horizontal overlap of the upper teeth over the lower teeth
Palatal	Towards the palate
Pathological	Relating to or arising from disease
Periodontics	The speciality of dentistry concerned with diseases of the gums
Periodontist	Health care professional who specialises in the treatment of periodontal conditions (gum disease), implants and bone grafts.
Periodontitis	This disease results in the formation of spaces between the gums and teeth, the loss of some fibres that attach the tooth to the jaw, and the loss of bone. This is the most common cause of tooth loss in older people and poor oral hygiene is a major contributory factor.
Permanent teeth	The secondary or adult teeth, there are 16 in each arch
Phlebotomist	Trained hospital employee who takes blood samples for laboratory testing.
Plaque	A deposit formed by the action of bacteria on sugary foods, the cause of caries
Posterior	Situated at the back of the mouth, refers to the premolar and molar teeth
Protrusion	An increased overjet
Pulp	The internal part of the tooth containing nerves and blood vessels
Radiograph	A type of photograph using x-rays which shows the teeth and jaws
Referral	Sending a patient to another dentist or specialist for diagnosis and/or treatment
Relapse	The return of features towards the original malocclusion following orthodontic treatment
Retainer	A fixed or removable appliance for maintaining the positions of the teeth and jaws after orthodontic treatment
Retruded	Further back than ideal
Reverse overjet	Lower row of teeth bite in front of upper row of teeth.
Sleep Apnoea	A condition where normal breathing pattern is disturbed during sleep, may be correctable by orthodontic treatment
Space Maintainer	An appliance used to prevent adjacent and opposing teeth from moving into the space left by the loss of a tooth
Speech Therapist	A person who specialises in correcting speech defects
Specialist Orthodontist	A dentist who has special qualifications and training in orthodontics
Sterilisation	The destruction of bacteria or germs by heat or chemical means
Study Models	Plaster casts of the teeth which allow the position of the teeth and jaws to be examined
Supernumerary	An extra tooth

Temporomandibular Joint [TMJ]	The joint formed by the head of the mandible and the base of the skull
Tooth Displacement	Abnormal or incorrect position of the tooth.
Tracing	A measurement of a Cephalometric x-ray which helps the orthodontist in diagnosis and treatment planning line
Trauma	An injury to the teeth or jaws
Treatment Plan	An outline of the clinical steps which are to be followed in restoring a mouth to health and function
Wax	Prevents braces from rubbing the cheeks and lips
Wisdom teeth	The third molars
X-rays	Used to produce radiographs of the teeth and jaws

Source: British Orthodontic Society