The following recommendation was made by the Clinical Recommendations Committee (CRC), at the meeting held on 7 February 2008.

**Recommendation 01/08: The Development of an Integrated Care pathway for NHS Orthodontic Services including criteria for treatment as a High Priority.**

Approved by the Minister on 17 March 2008.

**POLICY:**

**Orthodontic Care on the Island**

**Introduction**

Orthodontics is the branch of dentistry concerned with the growth and development of the teeth and jaws and their corrective treatment ("Braces"). On the Island services span both primary and secondary care and operate alongside, the salaried and community dental service, general dental practitioners, maxillofacial surgery and restorative dentistry. The need for orthodontics varies from an aesthetic dimension to more complex dental health needs.

**Background**

Clinician feedback suggests an escalating patient demand due to the increasing awareness of the benefits of orthodontics, often accentuated by peer pressure and bullying in the child population. The vast majority of assessments concerning the need for orthodontic intervention are undertaken when children are between nine and ten years of age. There were 881 children, within this age group, on the Department of Education school roll on 1st September 2006. Although orthodontics is usually equated with young people (in legislative terms below 18 years) there is a significant tranche of adults presenting with difficult destructive bite problems which often require a hospital based multi-disciplinary treatment approach for resolution. Sadly, this group often missed out on successful child orthodontic treatment. The present Orthodontic Service arrangements have largely been developed in an adhoc manner and are now facing considerable challenges. (See appendix 1 for an overview of current services)

**Present challenges facing service delivery:**

1. The Orthodontic Service is overwhelmed as measured by the waiting lists for assessment and treatment throughout the Island.
2. Inappropriate referrals are being made to Nobles Hospital.
3. There is no overall agreed clinical management strategy for service provision – who does what, where and for whom to the best advantage.
4. There is a lack of equity of access to the service. The waiting time to be seen depends largely upon who makes the referral and to whom the referral is made. Waiting times have varied from 8 weeks to 2 years. The recent waiting list initiative has reduced the wait to six months, however when the initiative ends, without increased resources, waiting times will once again increase. A business case is being prepared to address the need for more resources.
5. The service provision is fragmented and lacks co-ordination.
Ways forward

One effective way to proceed would be to set out eligibility criteria for which patients the Orthodontics Service will treat, by whom they will be treated and in which setting they will be treated. This could be accomplished by the introduction of an integrated care pathway (ICP) designed to ensure that assessment of need for treatment is carried out more fairly and consistently in order to make the best use of available resources. It would also strive to improve the quality of orthodontic interventions across the board by following recognised standards that will assist in the provision of the best and most stable outcomes for patients.

In order to target resources effectively it is necessary to identify and prioritise need objectively. In this respect it is proposed that from a given date the NHS orthodontic services adopt the following access criteria;

a) Children under the age of 18 years
b) Adults who have been identified in childhood as requiring surgical intervention in adulthood. e.g. Patients requiring Orthognathic surgery (surgical repositioning of the maxilla, mandible, and the dentoalveolar segments to achieve facial and occlusal balance)
c) Adults who present with complex problems who fulfil specific criteria. E.g. those who meet the IOTN who were missed in childhood, psychiatric patients, those who have had previous intervention in childhood and require further treatment and patients who present with anodontia.

In treatment terms those working under the General Dental Service regulations already have contractual IOTN restrictions applied. In broad terms the Hospital follows a similar pattern, with some flexibility to meet special needs. Although the ICP should improve clinical management, integration and patient flow it may also highlight the need for increased resources to meet demand.

The Index of Orthodontic Treatment Need (IOTN) should be used universally within dental practice. IOTN measures a series of dental parameters relative to the “norm” or “ideal” working to a five point severity scale with qualifying subdivisions. The index prioritises orthodontic treatment need in terms of dental health and aesthetics. It should be noted however that the IOTN is not a complete indicator of the degree of difficulty that is required to treat, manage and resolve orthodontic problems.

The Dental Health Component (DHC) ranks cases from 1 to 5 as follows:

Grade 1 – no need for treatment
Grade 2 – little need
Grade 3 – borderline/moderate need
Grade 4 – definite need
Grade 5 – great need
The aesthetic component (AC) ranks cases from 1 to 10 as follows:

- Grades 1 to 4 – little or no need
- Grades 5 to 7 – borderline/moderate need
- Grades 8 to 10 – definite need

There is a good evidence base that children with an IOTN DHC of 5 or 4 and those with an IOTN DHC of 3 plus an aesthetic component of 6 or above will benefit from orthodontic treatment. Therefore the orthodontic eligibility criteria that must be applied to patients referred for treatment from a given date are:

- Grades 5 or 4 of the Dental Health Component (DHC) of the Index of Orthodontic Treatment Need (IOTN); or

- IOTN DHC Grade 3 with an Aesthetic Component (AC) of 6 or above.

However not all children in these categories will necessarily be suitable for, or desire, treatment. Studies have shown that approximately one third of children fall into IOTN DHC categories 5 and 4 with a further one third falling into IOTN category 3. (One third equates to approximately 293 children a year)

A survey of 14 year old children on the Island was conducted in 2002/3 that assessed orthodontic need and reported on the numbers of children receiving orthodontic treatment. The survey found the orthodontic demand to be 42.2%. (See Appendix 2)

Suggested guidelines for referring and accepting patients for orthodontic treatment are outlined in Appendix 3 and the advantages and disadvantages of the system are outlined in Appendix 4.

Patients who have commenced treatment prior to the IOTN guidance and those patients who have been assessed and offered treatment prior to the new contract have a reasonable expectation that the treatment will be continued or provided.

The Department may take a different view for patients who have been referred but are still to be assessed.

The Department will need to agree local protocols for managing patients who have been referred for an orthodontic assessment but have not yet been seen or patients who have been assessed but their treatment has not yet been started and who's clinical needs fall outside the new orthodontic eligibility criteria

- Individuals previously examined and placed on a treatment waiting list who meet the new IOTN criteria.
Training

An Integrated Care Pathway (ICP) would help to identify clearly the existing resources and enable them to be used appropriately. The gatekeepers of the ICPs are the general practitioners who are the prime referrers. Dental professionals will require training as their understanding of IOTN before a patient enters the system is paramount and should obviate unrealistic patient expectations.

Training will also be required in the Patient Assessment Review (PAR) index, a score that measures the improvements gained following intervention.

Information for Patients

Patients will require information regarding any changes relating to access to orthodontic services.

Appeals Procedure

An appeals procedure will require development that outlines;

   a) The procedure for dental health professionals to request for variances to be treated e.g. a child with additional needs where the state of the dentition is having a detrimental effect on the child’s psychological or behavioural well-being.

   b) A procedure for members of the general public to appeal against decisions made.

References

Further information on IOTN and PAR scoring can be found in the publication *An Introduction to Occlusal Indices* Richmond, O’Brien, Buchanan and Burden (1992: Victoria University of Manchester, ISBN 1-898922-00-4.

*Methods to determine outcome of orthodontic treatment in terms of improvement and standards* (see the European Journal of Orthodontics 14, p125-139 Richmond S. Shaw W.C. Anderson M, and Roberts C.T.


Heart of Birmingham PCT Appeals Process for Orthodontic Cases Falling Outside Index of Orthodontic Treatment Need Criteria (2007)


Lewis C Survey of IOM Children to Assess Orthodontic Need
GDPs refer to Specialist Practitioner or visiting consultant

GDPs with special interest refer to visiting Consultant
(1 practice contracted to assess, refer and treat their own patients who require orthodontic intervention following the consultant treatment plan)

Community Dental Service and other health professionals refer to staff grade orthodontist

Staff Grade Orthodontist treats to consultant treatment plan; and returns to the care of community dentists or further refers to consultant as appropriate.
(10 clinical sessions a week)
80% of clinical time is in the community setting

Specialist Practitioner assesses, reviews, treats patient and returns to the care of GDP or refers to consultant as appropriate.
(Contracted)

Visiting Consultant sees patients in Nobles Hospital and community settings; assesses, reviews, arranges treatment and/or advises referrer.
(63 sessions a year)
## IOM Orthodontic Need Survey

<table>
<thead>
<tr>
<th>Isle of Man</th>
<th>Children wearing an appliance</th>
<th>Children who have worn an appliance</th>
<th>Children with an AC 8-10 or DHC = 1, who are not and have not worn an appliance and would like treatment</th>
<th>TOTAL NEED A+B+C</th>
<th>TOTAL DEMAND A+B+D</th>
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<td><strong>Survey Year</strong></td>
<td>Total 14 yr old Population</td>
<td>Children Examined</td>
<td>number</td>
<td>% of children examined</td>
<td>number</td>
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<tr>
<td>2002/03</td>
<td>939</td>
<td>258</td>
<td>42</td>
<td>16.3</td>
<td>54</td>
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<tr>
<th>Isle of Man</th>
<th>Children wearing an appliance</th>
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<th>TOTAL NEED A+B+C</th>
<th>TOTAL DEMAND A+B+D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Survey Year</strong></td>
<td>Total 12 yr old Population</td>
<td>Children Examined</td>
<td>number</td>
<td>% of children examined</td>
<td>number</td>
</tr>
<tr>
<td>2000/01</td>
<td>891</td>
<td>258</td>
<td>53</td>
<td>20.5</td>
<td>17</td>
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</table>
Isle of Man

<table>
<thead>
<tr>
<th>Survey Year</th>
<th>Estimated % needing and wanting treatment per year (% demand)</th>
<th>Estimated annual cases both needing and wanting treatment (% demand* pop)</th>
<th>% already received orthodontic treatment (A+B)</th>
<th>% needing treatment now (C)</th>
<th>% needing and wanting treatment (D)</th>
<th>Unmet Demand (cases) (% D * pop)</th>
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<tr>
<td>2002/03</td>
<td>42.2</td>
<td>397</td>
<td>37.2</td>
<td>10.1</td>
<td>5.0</td>
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</tr>
<tr>
<td>2000/01</td>
<td>36.0</td>
<td>321</td>
<td>27.1</td>
<td>16.7</td>
<td>8.9</td>
<td>79</td>
</tr>
</tbody>
</table>

(Source Carolyn Lewis, Clinical Director Salaried Primary Care and Community Dental Services)
**Appendix 3**

**SUGGESTED GUIDELINES FOR REFERRING AND ACCEPTING PATIENTS FOR ORTHODONTIC TREATMENT**

**Introduction**
Orthodontic treatment can only be provided within the NHS for patients who have significant malocclusions assessed using the Index of Orthodontic Treatment Need (IOTN). The IOTN has two components: Aesthetic (AC) and Dental Health (DHC). The DHC consists of 5 grades ranging from Grade 5 having the greatest need to Grades 2 and 1 with little or no need. For example, an overjet of 3.5mm with competent lips will be classified as Grade 2 (2.a) as the overjet increases the level of need increases 6-9 mm – Grade 4 (4.a) and greater than 9mm Grade 5 (5.a). The suffix relates to the type of anomaly in each grade; a - overjet.

The AC consists of ten photographs showing different levels of attractiveness, 1 being the most attractive and 10 the least attractive arrangements of teeth.

Only those patients who have a Dental Health Component of Grades 4 and 5, and Dental Health Component Grade 3 (BORDERLINE) in association with an Aesthetic Component of greater than 5 will be accepted for orthodontic treatment within the NHS contract.

To maintain an efficient orthodontic service it is important to follow the referral criteria appropriately. A brief description of IOTN is given below.  

**Dental Health Component of IOTN**
(Treatment need from a dental health perspective)

| Grade 5 (very great) | a) Increased overjet > 9 mm  
| h) Extensive hypodontia with restorative implications (more than one tooth missing in any quadrant) requiring pre-restorative orthodontics  
| i) Impeded eruption of teeth (with the exception of third molars) due to crowding, displacement, the presence of supernumerary teeth, retained deciduous teeth and any pathological cause  
| m) Reverse overjet greater than 3.5 mm with reported masticatory and speech difficulties  
| p) Defects of cleft lip and palate  
| s) Submerged deciduous teeth |

| Grade 4 (great) | a) Increased overjet > 6 mm but ≤ 9 mm  
| b) Reverse overjet > 3.5 mm with no masticatory or speech difficulties  
| c) Anterior or posterior cross bites with > 2 mm discrepancy between retruded contact position and intercuspal position  
| d) Severe displacements of teeth > 4 mm  
| e) Extreme lateral or anterior open bites > 4 mm  
| f) Increased and complete overbite with gingival or palatal trauma  
| h) Less extensive hypodontia requiring pre-restorative orthodontics or orthodontic space closure to obviate the need for a prosthesis  
| l) Posterior lingual cross bite with no functional occlusal contact in one or both buccal segments  
| m) Reverse overjet greater than 1 mm but ≤ 3.5 mm with recorded masticatory and speech difficulties  
| t) Partially erupted teeth, tipped and impacted against adjacent teeth.  
| x) Supplemental teeth. |

| Grade 3 (Borderline) | a) Increased overjet > 3.5 mm but ≤ 6 mm with incompetent lips.  
<p>| b) Reverse overjet greater than 1 mm but ≤ 3.5 mm |</p>
<table>
<thead>
<tr>
<th>Grade (little)</th>
<th>a</th>
<th>Increased overjet &gt; 3.5 mm ≤ 6mm with competent lips.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>Reverse overjet &gt; 0 mm but ≤ 1mm</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>Anterior or posterior crossbite with ≤ 1 mm discrepancy between retruded contact position and intercuspal position.</td>
</tr>
<tr>
<td></td>
<td>d</td>
<td>Displacement of teeth &gt;1 mm but ≤ 2 mm</td>
</tr>
<tr>
<td></td>
<td>e</td>
<td>Anterior or posterior open bite &gt; 1 mm but ≤ 2mm</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>Increased overbite ≥ 3.5 mm without gingival contact</td>
</tr>
<tr>
<td>Grade (none)</td>
<td>1</td>
<td>Extremely minor malocclusions including displacements &lt;1 mm</td>
</tr>
</tbody>
</table>

Method of Measurement

Dental Health Component

To ensure consistency in evaluating malocclusions, the dentition must be assessed in a systematic (hierarchical) way. Firstly, always check that all the teeth are present as teeth may be impacted (5.i) or that they did not develop (5.h or 4.h). If there are no missing teeth the overjet should be measured. However, if the overjet is less than 6mm the deviation of the lower dentition resulting from a crossbite should be recorded. The displacement of contact points should be recorded that are greater than 2mm and overbite and open bites falling into Grades 3 and above.

This sequence can be remembered by the mnemonic “MOCDO”.

ONLY THE WORST OCCLUSAL ANOMALY IS RECORDED.

M     Missing teeth (5i, 5.h, 4.h)
O     Overjet (5.a, 4.a, 3.a, 2.a / 5.m, 4.m, 4.b, 3.b, 2.b)
C     Crossbite (4.c, 3.c, 2.c)
D     Displacement of contact points (4.d, 3.d, 2.d)
O     Overbite/open bite (4.f, 3.f, 2.f / 4.e, 3.e, 2.e)
Orthodontic thresholds

<table>
<thead>
<tr>
<th>Date Policy adopted:</th>
<th>2008</th>
<th>Date of next Review:</th>
<th>2010</th>
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**Policy:** The Clinical Recommendations Committee (CRC) has considered evidence of clinical effectiveness, cost and benefits for orthodontics and recommend its use to be a LOW PRIORITY except for patients who meet the criteria below.

Orthodontics should be made available to those with greatest needs and in exceptional circumstances where it is needed to achieve improvement in the patient’s health status. This includes patients for whom orthognathic surgery was planned in childhood but will receive the treatment in adulthood.

Patients under 18 years of age at the time of case assessment will be eligible for treatment if they have treatment needs assessed as Grades 4 or 5 of the Dental Health Component of the Index of Orthodontic Treatment Need (IOTN) or Grade 3 DHC with an Aesthetic Component of 6-10.

Approval should be sought from the CRC for orthodontic treatment in exceptional circumstances to achieve significant improvement in the patient’s health status where:

- Patients under 18 years of age at the time of case assessment are assessed as below 3 of the IOTN Dental Health Component and have significant need for treatment.
- Patients above 18 years of age at the time of the case assessment have a significant clinical need for treatment.

It is up to the requesting clinician to demonstrate why the patient should be considered as an exception. **Orthodontic treatment is not available for aesthetic reasons alone.**

Note: This policy will be reviewed in light of new evidence or guidance from NICE.