# GUIDELINES ON THE PRE & POST OPERATIVE MANAGEMENT OF CHILDREN WITH CLEFT LIP & PALATE AND PALATAL SPEECH SURGERY

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<tr>
<th>Version Number</th>
<th>V1</th>
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<tr>
<td>Date of Issue</td>
<td>July 2016</td>
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<td>Approved By</td>
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<tr>
<td>Title:</td>
<td>Consultant in Plastic Surgery</td>
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<td></td>
<td>[Signature: July 2016]</td>
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<td>[Consultant in Plastic Surgery]</td>
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<td>Authorised By</td>
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<td>Cormac Breatnach</td>
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<td>Respiratory Consultant</td>
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<td>[Signature: July 2016]</td>
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<td></td>
<td>[Chair of Clinical Guidelines Committee]</td>
</tr>
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<td>Author/s</td>
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<tr>
<td>Location of Copies</td>
<td>On Hospital Intranet and locally in department</td>
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## Document Review History

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<th>Review Date</th>
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## Document Change History

<table>
<thead>
<tr>
<th>Change to Document</th>
<th>Reason for Change</th>
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APPENDICES

Appendix 1: Pre admission & discharge advice for Parents / Guardians of a child following cleft lip and/or palate surgery
Appendix 2: Diet Post Palatal Surgery
1.0 Introduction

On average approximately 50 – 60 children are admitted to OLCHC for primary and secondary cleft lip and or palate surgery each year. Palatal surgery can also be performed for non-cleft conditions such as velopharyngeal insufficiency (VPI), velopharyngeal dysfunction (VPD) and alveolar bone grafting. Effective cleft management relies on a multidisciplinary approach to care. This guideline is intended to guide all healthcare professionals in relation to the pre and post-operative management of a child with a cleft lip & palate, VPI / VPD palatal surgery and alveolar bone grafting in OLCHC.

2.0 Definition of Guidelines

These Clinical Guidelines on the Management of Children with Cleft lip & Palate and Palatal Speech Surgery represent the written instructions to ensure the provision of high quality care. Guidelines must be accurate, up to date, evidence-based, easy to understand, non-ambiguous and emphasise safety. When followed they should lead to the required standards of performance.

3.0 Applicable to

These guidelines are applicable to healthcare professionals in OLCHC involved in the pre and post-operative management of a child with a cleft lip & palate, alveolar bone grafting and children requiring palatal speech surgery.

4.0 Objectives of Guidelines

To promote safe, effective and consistent practice in relation to the pre and post-operative management of a child having cleft lip & palate, alveolar bone grafting or palatal speech surgery in OLCHC.

5.0 Definition / Terms

Cleft:

Clefts are due to a failure of fusion of the medial nasal, lateral nasal & maxillary processes on one or both sides of the lip and/or palate or of the secondary palate in the midline.¹

6.0 Supporting Information

6.1 Classification of cleft types:

- Unilateral or Bilateral
- If Unilateral is the cleft on Right / Left side
- Complete or Incomplete
- Lip only
- Rare Craniofacial clefts including Lateral Cleft Lip, midline and other clefts
- Lip and Alveolus
- Isolated Cleft Palate
- Submucous Cleft Palate

¹Our Lady’s Children’s Hospital, Crumlin
6.2 Syndromes associated with clefts:

Clefts may be associated with a syndrome. There are 487 syndromes listed in the London Dysmorphology Database which include cleft lip and/or palate as a feature.ii

Some of the more commonly associated Syndromes / Sequences:

- Trisomy 13
- Trisomy 18
- Pierre Robin sequence
- CHARGE association
- Goldenhar Syndrome
- Gorlin Syndrome (AD)
- Oto-palato-digital syndrome (XL)
- Smith-Lemli-Opitz Syndrome (AR)
- Stickler Syndrome (AD)
- Van der Woude Syndrome (AD)
- Treacher Collins Syndrome (AD)
- Aperts Syndrome
- de Lange Syndrome
- Kabuki Syndrome
- 22q11 D.S/ Di George / Velocardiofacial Syndrome

6.3 Teratogens / Other agents associated with cleft lip and/or palate:

- Alcohol
- Topiramate
- Phenyoit
- Sodium valproate
- Methotrexate (Folic Acid Antagonist)
- Cigarette smoking
- Maternal Obesity

Under further investigation

- Benzodiazeepines
- Corticosteroids
6.4 Epidemiology

Prevalence in Ireland:

Data from: Epidemiology of Orofacial Clefts in the East of Ireland in the 25yr Period 1984 – 2008 iv

- The overall prevalence of orofacial clefts: 16.0 per 10,000 births.
- The prevalence of cleft lip was 3.00 per 10,000 births.
- The prevalence of cleft palate was 7.8 per 10,000 births.
- Cleft lip and palate was 5.2 per 10,000 births.
- Of all cases 542 (63.7%) that were isolated,
- 183 (21.5%) had malformations in other systems, and 126 (14.8%) occurred as part of recognized syndromes.

Pierre Robin Sequence presents with a triad of micrognathia, airway obstruction and cleft palate, glossoptosis and cleft palate. The position of the chin and associated glossoptosis of the tongue causes varying degrees of airway obstruction and feeding difficulties. Its reported occurrence varies internationally from 1: 8,000 to 1: 14,000 births. v

6.5 Prevention

- There is no known way to prevent this.
- Genetic counselling can identify high risk families.

Although further validation of primary data is required there is a suggestion that folic acid and multivitamins may have a role in the prevention of cleft lip and palate.

6.6 Diagnosis

Antenatal Diagnosis:

- Cleft lip may be picked up by high resolution ultrasound on or before 20 weeks gestation.
- Cleft palate is difficult to diagnose ante-natally.

Diagnosis is otherwise made in the delivery room or during neonatal examination.

Ante-natal scan showing left cleft lip
6.7 Presentation

- Obvious gap in the new-born lip, usually upper.
- Cleft lip may be unilateral or bilateral; Complete or Incomplete - Complete (extending through the length of the lip to the nose), or incomplete.
- The division runs from the edge of the philtrum to the margin of the nostril.

- Inspection and palpation of the roof of the mouth should reveal clefting of the hard and/or soft palate also. (There may be no defect in the mucosa covering the palate)
- There may be a cleft of the palate only Sub-mucous Cleft.

7.0 Map of Care for Cleft Lip & Palate Children.

<table>
<thead>
<tr>
<th></th>
<th>Birth</th>
<th>1 year</th>
<th>8 years</th>
<th>11 years</th>
<th>18+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Airway</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Feeding</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Speech and Language</td>
<td></td>
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<tr>
<td>Hearing</td>
<td></td>
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<tr>
<td>Dental care</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Orthodontics and dental reconstruction</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Mr. David Orr’s Map of Care from Birth to Adulthood. MDT involvement is dictated by the cleft type. Care pathways are planned in accordance with each individual’s need.
8.0 Multidisciplinary Team Involvement in Cleft Care
9.0 Cleft Diagrams

9.1 Unilateral & Bilateral Cleft lip and Palate

9.2 Cleft Palate Only
10.0 Guidelines

10.1 Unilateral Cleft lip repair only (generally a day cases)

<table>
<thead>
<tr>
<th>Action</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-operative</strong></td>
<td></td>
</tr>
<tr>
<td>Admit the day prior to or on day of surgery</td>
<td>This depends on prior medical history and bed availability</td>
</tr>
<tr>
<td>Anaesthetic review</td>
<td>Contact the anaesthetic team to inform them of the child’s admission and medical history. The anaesthetist will decide when the pre – operative review is necessary.</td>
</tr>
<tr>
<td>Fast as per standard anaesthetic instructions</td>
<td></td>
</tr>
<tr>
<td>No laboratory blood testing required</td>
<td></td>
</tr>
<tr>
<td>Pre-operative photographs required.</td>
<td>Usual views: AP Lateral and Worms Eye View</td>
</tr>
<tr>
<td>Plastics team to complete photography request form</td>
<td>Contact clinical photographer via switch</td>
</tr>
<tr>
<td>Parental and child support pre theatre</td>
<td>Involve Play Therapist in pre &amp; post-operative preparation</td>
</tr>
</tbody>
</table>

**Post-operative**

<table>
<thead>
<tr>
<th>Action</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine post-operative care</td>
<td>Refer to Care Plan 6 (OLCHC 2010)</td>
</tr>
<tr>
<td>Return to normal oral feeding (breast or bottle with the child’s usual teat) as tolerated post-operative.</td>
<td>Refer to Care Plan 1 (OLCHC 2010)</td>
</tr>
<tr>
<td><strong>N.B.</strong> - if a child is fed normally via a peg tube or nasogastric tube they can continue feeding as normal post op.</td>
<td>Refer to Care Plan 19 (OLCHC 2012)</td>
</tr>
<tr>
<td>No restrictions on use of teats or soothers</td>
<td>Directive by Mr Orr - Department of Plastics &amp; Reconstructive Surgery (2012)</td>
</tr>
<tr>
<td>Duoderm ultra-thin is applied over the suture line by the consultant post operatively and is to remain in situ for a minimum of 2 weeks or until it falls off. Parents may reapply Duoderm for scar management for up to 6 weeks.</td>
<td>Supply parents with a sheet of Duoderm and instructions on discharge home on how to reapply to the suture line.</td>
</tr>
<tr>
<td>Discharge home when comfortable, feeding is re-established and parents are confident to manage pain relief and feeding at home.</td>
<td>Refer to parent Information Leaflet (Appendix 1)</td>
</tr>
</tbody>
</table>
Sutures are generally absorbable. If non absorbable sutures used in lip repair, re-admit as day case for removal of sutures under general anaesthesia at day 5 to 7.

Plastics Team to book into Surgical Day Unit for Removal of Sutures under GA.

Review at 6 - 8 weeks in Mr. Orr’s Cleft Clinic on 1st or 3rd Wednesday of the month

Cleft coordinator will arrange follow up - Contact via switch.

1 Please document in the HCR if an alternative to this protocol is used with an explanation for the alternative course of treatment.

10.2 Bilateral Cleft Lip repair

Primary Surgery is Carried out in stages of 2 or 3 operations.

- Stage 1 = lip adhesion repair and anterior palate Repair (One side)
- Stage 2 = Lip adhesion repair and anterior palate Repair
- Stage 3 = Posterior (secondary) palate repair.

<table>
<thead>
<tr>
<th>Action</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 &amp; 2 follow protocol 3 (Cleft lip &amp; anterior palate repair)</td>
<td></td>
</tr>
<tr>
<td>Stage 3 follow protocol 4 (Secondary palate, soft palate &amp; submucous cleft)</td>
<td></td>
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</tbody>
</table>

10.3 Cleft lip and anterior palate repair

Usually performed aged 3-6 months
Description: Closure of the cleft lip and repair of the hard palate using vomerine flap.

<table>
<thead>
<tr>
<th>Action</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td>Admit the day prior to or on day of surgery</td>
<td>This depends on prior medical history and bed availability</td>
</tr>
<tr>
<td>Ensure correct consent is obtained prior to proceeding with the following</td>
<td>Follow Correct Site Surgery Policy vii if bilateral lip involved.</td>
</tr>
<tr>
<td>Anaesthetic review</td>
<td>Contact the anaesthetic team to inform them of the child’s admission and medical history for them to decide when the pre–operative review is necessary.</td>
</tr>
<tr>
<td>Fast as per standard anaesthetic instructions</td>
<td></td>
</tr>
<tr>
<td>Bloods required: FBC, group and hold</td>
<td>Follow OLCHC Group and hold guidelines&lt;sup&gt;vi&lt;/sup&gt;</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Pre-operative photographs required for both lip and palate. Plastics Team to complete photography request form.</td>
<td>Usual views: AP Lateral and Worms Eye View Contact clinical photographer via Switchboard.</td>
</tr>
<tr>
<td>Plastic surgery team to inform dental team so that dental casts can be taken at start of operation</td>
<td>These models are stored in the Orthodontic Department, St. James’s Hospital.</td>
</tr>
<tr>
<td>Document in the Nursing Notes if the patient is a Finger or Thumb sucker</td>
<td>There is evidence that finger/thumb suckers have a higher risk of developing a post op fistula. Advise the parents to have baby’s nails cut short and use mittens/socks or baby grow with hand covers to cover hands post op if they finger or thumb suck&lt;sup&gt;ix&lt;/sup&gt;</td>
</tr>
<tr>
<td>Parental and child support pre theatre</td>
<td>Involve Play Therapist in pre &amp; post-operative preparation</td>
</tr>
</tbody>
</table>

### Post-operative

<table>
<thead>
<tr>
<th>Routine post-operative care</th>
<th>Refer to Care Plan 6 (OLCHC 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasopharyngeal airway (NPA) may be in place as a stent only and not an airway.</td>
<td>Please follow specific post op surgical instructions as per consultant Refer to nursing care plan –Nasopharyngeal Airway / Nasal Stent.</td>
</tr>
<tr>
<td>Avoid nasal or oral suctioning except where absolutely necessary and only with soft tubing.</td>
<td>This minimises the risk of trauma to the suture line which may cause post op haemorrhage.</td>
</tr>
<tr>
<td>No spatulas or tongue depressors to be placed in the mouth</td>
<td>There is evidence that finger/thumb suckers have a higher risk of developing a post op fistula.&lt;sup&gt;ix&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mittens / socks / hand cover on baby grow should be used if a child is a finger or thumb sucker</td>
<td></td>
</tr>
<tr>
<td>Child will require 2 intravenous cannulas</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; cannula for morphine 2&lt;sup&gt;nd&lt;/sup&gt; cannula for iv antibiotics and fluids</td>
</tr>
<tr>
<td>Co-amoxiclav (or alternative if penicillin-sensitive) on induction and 2 post-operative intravenous doses</td>
<td>Administer as per Intravenous Medication Policy&lt;sup&gt;x&lt;/sup&gt; Refer to Care Plan 9 (OLCHC 2012)</td>
</tr>
<tr>
<td>Analgesia – usually prescribed the following:</td>
<td>Administered as per Anaesthetist instruction in line with Medication Policy\textsuperscript{xi} and Guidelines for Opioid Infusions\textsuperscript{xi}</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>I.V. Morphine - NCA</td>
<td>Refer to Care Plan 9 (OLCHC 2012)</td>
</tr>
<tr>
<td>Paracetamol - PO/PR/IV</td>
<td>Refer to Care Plan 1 (OLCHC 2010)</td>
</tr>
<tr>
<td>Ibuprofen - PO/PR</td>
<td>Refer to Care Plan 19 (OLCHC 2012)</td>
</tr>
<tr>
<td>Clonidine - PO</td>
<td>Refer to Post-operative Diet Sheet (Appendix 2)</td>
</tr>
</tbody>
</table>

Pulse oximetry and apnoea monitoring overnight.

<table>
<thead>
<tr>
<th>Return to normal feeding (breast or bottle with the child's usual teat) as tolerated post-operative.</th>
<th>To ensure wound site remain clear of food/milk residue for 1 week.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N.B.</strong> - if a child is fed normally via a peg tube or nasogastric tube they can continue feeding as normal post op.</td>
<td>Directive by Mr. Orr - Department of Plastics &amp; Reconstructive Surgery (2012)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquidized diet only for first week where spoon feeding has already being established</th>
<th>Supply parents with a sheet of Duoderm and instructions on discharge home on how to reapply to the suture line.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No restrictions on use of teats or soothers</td>
<td>No restrictions on use of teats or soothers</td>
</tr>
</tbody>
</table>

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<tr>
<th>Duoderm ultra-thin is applied over the suture line by the consultant post operatively and is to remain in situ for a minimum of 2 weeks or until it falls off. Parents may reapply Duoderm for scar management for up to 6 weeks.</th>
<th>Discharge home when comfortable, feeding is re-established and parents are confident to manage pain relief and feeding at home.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutures are generally absorbable. If non absorbable sutures used in lip repair, re-admit as day case for removal of sutures under general anaesthesia at 5 to 7 days.</td>
<td>Review at 6 - 8 weeks at Mr. Orr's Cleft Clinic – organise through cleft coordinator</td>
</tr>
</tbody>
</table>

**switch**
10.4 Secondary Palate, Soft Palate, & Submucous Cleft

<table>
<thead>
<tr>
<th>Uncomplicated palatal conditions are repaired at 6 months.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong></td>
</tr>
<tr>
<td>Admit the day prior to or on day of surgery</td>
</tr>
<tr>
<td>Anaesthetic review</td>
</tr>
<tr>
<td>Fast as per Theatre Instructions</td>
</tr>
<tr>
<td>Bloods required: FBC, group and hold</td>
</tr>
<tr>
<td>Pre-operative photographs only if requested on admission card</td>
</tr>
<tr>
<td>Plastics team to complete photography request form.</td>
</tr>
<tr>
<td>Document in the Nursing Notes if the patient is a Finger or Thumb sucker</td>
</tr>
<tr>
<td>Parental and child support pre theatre</td>
</tr>
</tbody>
</table>

**Post-operative**

- Nursed on ward with Nasopharyngeal Airway (NPA) unless clinically contraindicated
- NPA suctioning is permitted in line with the NPA guideline
- If NPA becomes blocked or dislodged reinsertion is dependent on the child’s clinical condition. If re-insertion of the tube is required it should be done gently, without force by a qualified person.
- Saline nebulisers should be prescribed and administered every 2-4 hours or as clinically indicated.
- Avoid nasal or oral suctioning except where absolutely necessary and only with soft tubing
- No spatalas or tongue depressors to be placed in the mouth
- Mittens / socks / hand cover on baby grow should be used if a child is a finger or thumb sucker

These children may present with more complex airway issues.

If NPA becomes blocked or dislodged reinsertion is dependent on the child’s clinical condition.
- If re-insertion of the tube is required it should be done gently, without force by a qualified person.
- Saline nebulisers should be prescribed and administered every 2-4 hours or as clinically indicated.
- Avoid nasal or oral suctioning except where absolutely necessary and only with soft tubing
- No spatalas or tongue depressors to be placed in the mouth
- Mittens / socks / hand cover on baby grow should be used if a child is a finger or thumb sucker

These should be commenced in recovery as they help to prevent nasal congestion which can result in blockage of the NPA tube.

Minimises the risk of trauma to the suture line which may cause post op haemorrhage.

There is evidence that finger/thumb suckers have a higher risk of developing a post op fistula.²
Child will require 2 intravenous cannulas

Co-amoxiclav (or alternative if penicillin-sensitive) on induction and 2 post-operative intravenous doses

Analgesia – usually prescribed the following:
- I.V. Morphine - NCA
- Paracetamol - PO/PR/IV
- Ibuprofen - PO/PR
- Clonidine - PO

Pulse oximetry and apnoea monitoring overnight.

Return to normal feeding (breast or bottle with the child's usual teat) as tolerated post-operative. **N.B.** - if a child is fed normally via a peg tube or nasogastric tube they can continue feeding as normal post op.

Liquidized diet only for first week where spoon feeding has already being established.

No restrictions on use of teats or soothers

Discharge home when comfortable, feeding is re-established and parents are confident to manage pain relief at home

Review at 6 - 8 weeks at Mr. Orr’s Cleft Clinic – organise through cleft coordinator

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**10.5 Pharyngoplasty, pharyngeal flap, Buccinators flaps, or palate re-repair in older child**

**Pharyngeal Flap / Pharyngoplasty:**
To overcome hyper nasal speech caused by a short / inadequately functioning palate some of the tissue of the soft palate and the back of the throat is repositioned to prevent air escaping through the nose.

**Buccinator Flap:**
Musculomucosal flaps are taken from both inner cheeks to lengthen the palate.

**Palate Re-repair (Furlow’s repair):**
This is a secondary surgery to reposition the muscles of the palate with the aim of improving palatal function for speech

<table>
<thead>
<tr>
<th>Action</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td><strong>Pre-operative</strong></td>
<td></td>
</tr>
<tr>
<td>Admit the day prior to or on day of surgery</td>
<td>This depends on prior medical history and bed availability</td>
</tr>
<tr>
<td>Anaesthetic review</td>
<td>Contact the anaesthetic team to inform them of the child’s admission and medical history for them to decide when the pre-operative review is necessary.</td>
</tr>
<tr>
<td>Fast as per Theatre Instructions</td>
<td></td>
</tr>
<tr>
<td>Bloods required: FBC, group and hold</td>
<td>Follow OLCHC Group and hold guidelines[viii]</td>
</tr>
</tbody>
</table>
### Post-operative

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietetic Consult</td>
<td>To be decided on an individual basis</td>
</tr>
<tr>
<td>Parental and child support pre theatre</td>
<td>Involve Play Therapist in pre &amp; post-operative preparation</td>
</tr>
<tr>
<td>Routine post-operative care</td>
<td>Refer to Care Plan 6 (OLCHC 2010)</td>
</tr>
<tr>
<td>Some children will return to the ward with a NPA in place if the surgeon feels it is needed</td>
<td>To maintain a patent airway Refer to nursing care plan – Nasopharyngeal Airway / Nasal Stent.</td>
</tr>
<tr>
<td>Patient positioning as per Consultants post op instructions</td>
<td>The consultant may request a particular post op positioning of the patient – refer to post op note.</td>
</tr>
<tr>
<td>NPA suctioning is permitted in line with the NPA guideline.</td>
<td>Awaiting NPA guidelines</td>
</tr>
<tr>
<td>If NPA becomes blocked or dislodged reinsertion is dependent on the child’s clinical condition.</td>
<td>An unqualified person reinserting the tube may cause trauma to the repaired palate</td>
</tr>
<tr>
<td>Reinsertion should <strong>ONLY</strong> be performed by the Plastics Consultant / Registrar or Anaesthetic Consultant / Registrar.</td>
<td></td>
</tr>
<tr>
<td>Child will require 2 intravenous cannulas</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; cannula for morphine</td>
</tr>
<tr>
<td>Co-amoxiclav (or alternative if penicillin-sensitive) on induction and 2 post-operative doses</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; cannula for iv antibiotics and fluids</td>
</tr>
<tr>
<td>Analgesia – usually prescribed the following:</td>
<td>Administered as per OLCHC Intravenous Medication Policy&lt;sup&gt;a&lt;/sup&gt; Refer to Care Plan 9 (OLCHC 2012)</td>
</tr>
<tr>
<td>• I.V. Morphine - NCA</td>
<td></td>
</tr>
<tr>
<td>• Paracetamol - PO/PR/IV</td>
<td></td>
</tr>
<tr>
<td>• Ibuprofen / Diclofenic - PO/PR</td>
<td></td>
</tr>
<tr>
<td>Pulse oximetry on ward overnight if clinically indicated</td>
<td></td>
</tr>
<tr>
<td>Saline nebulisers should be prescribed and administered every 2-4 hours or as clinically indicated.</td>
<td>These should be commenced in recovery as they help to prevent nasal congestion which can result in blockage of the NPA tube.</td>
</tr>
<tr>
<td>Clear fluids orally as per consultants’ instructions post operatively, then sloppy/liquidized diet to commence the following morning for 10 days.</td>
<td>Refer to post op diet advice sheet (Appendix 2)</td>
</tr>
<tr>
<td>Normal diet on day 11 post operatively.</td>
<td></td>
</tr>
<tr>
<td>No spatula or tongue depressors to be placed in the mouth</td>
<td>To ensure wound site remain clear of food/milk residue x 1 week.</td>
</tr>
<tr>
<td>Child should be encouraged to take a small drink of water to clear the mouth after eating</td>
<td></td>
</tr>
<tr>
<td>Discharge home when comfortable, feeding is re-established and parents are confident in managing pain relief at home.</td>
<td>Refer to parent Information Leaflet (Appendix 1)</td>
</tr>
<tr>
<td>Dietary advice on discharge</td>
<td>Refer to dietary advice sheet (Appendix 2)</td>
</tr>
<tr>
<td>Review at 6 - 8 weeks at Cleft Clinic – organise through cleft coordinator</td>
<td>Cleft coordinator will arrange follow up - contact via switch.</td>
</tr>
</tbody>
</table>
### 10.6 Alveolar bone graft & Fistula Closure

**Alveolar Bone Graft:**
This procedure involves closure of an oronasal fistula (communication between the mouth and the nose). The oronasal fistula may be present on the labial aspect (under the upper lip), the palatal aspect of the maxilla or both. The procedure also involves the reconstruction of the maxillary alveolus using an iliac crest bone graft. Surgery is normally carried out between 8 & 10 years of age. Usually the iliac crest graft is harvested for the same side as the cleft. In children with bilateral cleft lip and palate, alveolar cleft grafting is carried out in two stages.

<table>
<thead>
<tr>
<th>Action</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit the day prior to or on day of surgery</td>
<td>This depends on prior medical history and bed availability</td>
</tr>
<tr>
<td>Anaesthetic review</td>
<td>Contact the anaesthetic team to inform them of the child's admission and medical history for them to decide when the pre –operative review is necessary.</td>
</tr>
<tr>
<td>Fast as per Theatre Instructions</td>
<td></td>
</tr>
<tr>
<td>Dietetic Consult for Bone Graft Patients</td>
<td></td>
</tr>
<tr>
<td>Bloods – FBC, G&amp;H</td>
<td>Follow OLCHC Group and hold guidelines</td>
</tr>
<tr>
<td>Parental and child support pre theatre</td>
<td>Involve Play Therapist in pre &amp; post-operative preparation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-operative</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine post-operative care</td>
<td>Refer to Care Plan 6 (OLCHC 2010)</td>
</tr>
<tr>
<td>Pulse oximetry and apnoea monitoring on ward overnight if clinically indicated</td>
<td><strong>To observe for sleep apnoea or other respiratory complications Care plan 6</strong></td>
</tr>
<tr>
<td>Child will require 2 intravenous cannulas</td>
<td>1st cannula for morphine 2nd cannula for iv antibiotics and fluids</td>
</tr>
<tr>
<td>Co-amoxiclav (or alternative in penicillin-sensitive) on induction and continue as per Consultant's instructions</td>
<td>As per Maxillofacial Surgeon: Usually I.V. Augmentin until discharge and po for 5 days following discharge home</td>
</tr>
<tr>
<td>Analgesia – usually prescribed the following:</td>
<td>Administered as per Anaesthetist instruction in line with Medication Policy and Guidelines for Opioid Infusions</td>
</tr>
<tr>
<td>I.V. Morphine - NCA</td>
<td></td>
</tr>
<tr>
<td>Paracetamol - PO/PR/IV</td>
<td></td>
</tr>
<tr>
<td>Ibuprofen / Diclofenic - PO/PR</td>
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</tbody>
</table>
I.V Fluids

I.V. Fluids administered until adequate oral intake achieved post op
Refer to Care Plan 9 (OLCHC 2012)

Diet – Soft (non chew) diet commences the following morning.
Continues for 1 week.

Position – Place head of the bed at 30-degree angle
As per Maxillofacial Surgeons post-operative instructions

Ice pack x 48hrs to affected side
As per Maxillofacial Surgeons post-operative instructions

IV Dexamethasone x 3 doses
Standard recommended dosing:
- 4mg – Intra op
- 4mg – first dose post op
- 2mg – final dose
As per Maxillofacial Surgeons post-operative instructions

Elastoplast on upper lip
Placed on lip to reduce swelling. Can be removed in the shower after one week.

Saline or Medicated oral mouth wash 8-12 times daily during waking hours and especially post feeding.
Record in intake and output sheet.

Gentle Tooth brushing with soft tooth brush on Day 1 post op.
As per Maxillofacial Surgeons post-operative instructions

Hip wound – monitor wound.
1. Signs of Haemorrhage
2. Signs of Infection
3. Change Mepore Dressing prior to discharge if necessary

Mobilization
Encourage early mobilization usually on Day 1 post operatively involving parent in this process in preparation for discharge home.

Follow up –

Maxillofacial Surgeon:
St. James’s Hospital as per Consultant’s instruction

Plastics Surgeon:
Organised by the Cleft Co-coordinator

Discharge Information:
1. Advise parents to maintain the child’s level of mobilization
2. Advise with regard to restricting physical activity and no participation in contact sports for 4 weeks
3. Instructions with regard to ongoing oral hygiene at home
4. Instructions on Dietary Intake until next review

Refer to parent Information Leaflet (Appendix 1)
11.0 Companion Documents

See appendices

12.0 Implementation Plan

Communication and Dissemination

Guidelines will be posted on hospital Intranet
Hard copies of the guidelines will be circulated to the following areas:

- St. Annes’ Ward
- Nursing Site Management
- Theatre Dept.
- Dietetics Dept.
- PICU
- Social Work Dept.

- Email will be circulated to all staff informing them of issue of guideline
- Information will be circulated in NPDU Newsletter

Training

- Education and training will be delivered at departmental level using existing educational resources, e.g. Clinical Nurse Facilitators / Cleft Co-coordinator.
- Education is included in induction packages for relevant clinical areas / staff

13.0 Evaluation and Audit

Feedback and evaluation from clinical staff on the guidelines to contribute to ongoing guideline development
Appendix 1 -
Pre admission & discharge advice for Parents / Guardians of a child following cleft lip and/or palate surgery

Our Lady's Children's Hospital, Crumlin, Dublin 12

Pre admission & discharge advice for Parents / Guardians of a child following cleft lip and/or palate surgery

Pre admission & discharge advice for parents/guardians of a child with the following:

- Cleft Lip
- Cleft lip & Anterior Palate
- Secondary palate, Soft palate, & Submucous cleft
- Pharyngoplasty, pharyngeal flap, Buccinator flaps, Palate re-repair fistula closure
- Alveolar Bone Graft

**Specific Pre admission Advice:** (Tick as applicable)

**Cleft Lip + Cleft Lip & Anterior Palate**
- If thumb or finger suckers bring mitts / gloves / Babygro’s with hands covered.
- Larger sized vest or any garment which does not have to be pulled over the baby’s head.
- Bring soothers
- Normal bottles (Sterilizing units available on the ward)

**Secondary palate, Soft palate, & Submucous cleft**
- If thumb or finger suckers bring mitts / gloves / Babygro’s with hands covered.
- Larger sized vest or any garment which does not have to be pulled over the baby’s head.
- Bring beakers
- Food available on the ward but bring in a small amount of foods they like
- Baby spoons (only metal spoons are available on the ward)

**Pharyngoplasty, pharyngeal flap, Buccinator flaps, fistula closure & Alveolar Bone Graft**
- Liquidised diet will be required post-surgery. Please have liquidiser available at home.
Information will be given to you on admission to the ward regarding fasting times and any other pre-operative investigations required.

Advice will also be given on what to expect when the child returns from surgery

Post-operative:

Cleft Lip
- Duoderm (brown gel type sticky dressing) will be applied to your child’s lip
- Reapply as necessary at home as shown
- Extra duoderm will be provided
- This will stay in place for a minimum of 2 weeks and up to 6 weeks as advised
- Sutures are absorbable so no specific care required.
- Pain relief to be given as required
- Mitts / gloves should be worn for 1 week post-surgery if a finger or thumb sucker.
- Keep nails short

Cleft Lip & Anterior Palate
- Duoderm (brown gel type sticky dressing) will be applied to your child’s lip
- Reapply as necessary at home as shown
- Extra duoderm will be provided
- This will stay in place for a minimum of 2 weeks and up to 6 weeks as advised
- Sutures are absorbable so no specific cleaning required.
- Pain relief to be given as required
- Give your child cooled boiled water to drink following feeding for 1 week post-surgery to keep the wound clean.
- It can be normal for threads from the sutures to hang down from your child’s lip. Unless they are causing a problem for the child they should be left alone. If they are causing a problem contact the plastics team or your GP.

Note: These sutures are made from an absorbable material and will not cause any harm to your child if swallowed.
- Mitts / gloves should be worn for 1 week post-surgery if a finger or thumb sucker.
- Keep nails short

Secondary palate, Soft palate, & Submucous cleft
- Pain relief to be given regularly as required especially before feeding for the first week.
- Give your child cooled boiled water to drink following feeding for 1 week post-surgery to keep the wound clean.
- It can be normal for threads from the sutures to hang down inside or outside from your child’s palate. Unless they are causing a problem for the child they should be left alone. If they are causing a problem contact the plastics team or your GP.

Note: These sutures are an absorbable material and will not cause any harm to your child if swallowed.
- Liquidized diet only for 1 week post-surgery where spoon feeding has already being established please refer to the diet sheet provided.
Mitts / gloves should be worn for 1 week post-surgery if a finger or thumb sucker.

**Pharyngoplasty, pharyngeal flap, Buccinator flaps, fistula closure**
- Liquidized diet for the first 10 days post-surgery - Refer to diet sheet provided.
- Normal diet to commence after that
- Give your child cold water to drink following feeding for 1 week following surgery to keep the wound clean.
- May use soft toothbrush to clean your child’s teeth.
- Give pain relief as required

**Alveolar Bone Graft**
- Soft non chew diet for 1 week post-surgery.
- Elastoplast to stay on child’s upper lip for 1 week - Reapply if needed.
- Continue with antibiotics as prescribed.
- Saline or Medicated oral mouth wash 8-12 times daily during waking hours and especially post feeding until reviewed back in the clinic approximately 1 week later.
- Soft tooth brushing permitted - avoid surgery site 3 days
- Hip wound – reapply dressing as necessary. Monitor for redness etc… as per wound discharge advice sheet.
- Encourage your child to mobilise
- No participation in contact sports for  4 – 6 weeks
- Give pain relief as required.

**Pain relief:**

<table>
<thead>
<tr>
<th>Drug:</th>
<th>Time given:</th>
<th>When due:</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

If you child becomes unwell with temperatures, refusing to feed, increased irritability or generally unwell please contact your GP.

**Helpful hints for parents:**
- Book parent accommodation (01 - 4096520) - Although you can stay by your child’s bed at night it is good to book accommodation to allow you time away from the ward for a rest, to store belongings, shower etc...
- Bring warm clothing for night and cool clothing for during the day
- Bring a sleeping bag
- Reading material and music (with earphones)
- Baby’s own buggy to be available (keep in car or parents accommodation)
- Baby’s favourite things – blankets, comforters etc...
- Bring in a photograph of your baby with their cleft pre surgery if you wish.
Our Lady’s Children’s Hospital, Crumlin

Contact Details:
Cleft Palate Co-ordinator: 087 920 4932
St Anne’s Ward: 01 409 6521
Main Hospital Switchboard: 01 409 6100 (Ask to speak with Plastics Team)

Developed by: MS, LD & AD St Annes Ward
Date issued: April 2016
Date of review: April 2018

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Appendix 2 - Diet Post Palatal Surgery

Our Lady's Children's Hospital, Crumlin

DIET POST PALATAL SURGERY

NAME: ____________________________________________________________

CONTACT NUMBER: _______________________________________________________

DATE: _____________________________________________________________________

Introduction

Depending on the surgery you have had you may need to follow a special diet to give you mouth time to heal.

In general:

- Cleft lip or palate repair: Follow a liquidised or pureed diet for 1 week
- Pharyngoplasty: Follow a liquidised or pureed diet for 10 days
- Alveolar bone graft: Follow a soft diet for 1 week

However, these are just guidelines and may be altered by your doctor.

The purpose of following a special diet is to prevent food particles getting lodged in the affected area of the mouth post-surgery, which may hinder the healing process and be a source of infection. A puréed diet (also known as a sloppy or liquidised diet) is one that has no lumps or visible food particles. It may be necessary to pass foods through a sieve or food processor/blender. A soft diet avoids all sharp and difficult to chew foods. It is non-abrasive to the mouth.

In addition, it is important that sufficient nutrients are provided to:

1. Facilitate healing
2. Promote growth

Unfortunately puréed diets tend to be diluted by the additional of fluids and are not as nourishing as normal foods. This diet sheet will advise on what foods are suitable to promote mouth healing and also provide tips on how to ensure your child is getting sufficient nutrients.
Preparing Pureed Meals

It is difficult to take large amounts of fluid at any one time. Regular liquid meals and in-between drinks that are high in calories and protein are very important.

To achieve the right consistency, you will have to use a blender, liquidiser or food processor. This way, your child can eat what the rest of the family is having without much extra preparation.

Food will be more appetising if you liquidise different foods separately rather than mixing them together. For example: separate portions of liquidised carrots, potatoes and chicken.

When preparing food, you may have to add more fluid to get the right consistency.

You need to bear in mind the following points:-

- Adding more fluid dilutes the goodness in food. Try not to add just water. You can use milk, soup, Oxo, Marmite or stock in savoury dishes. Try fruit juice, ice cream or milk in sweet dishes.
- When liquidising, put the food in the liquidiser first and add small amount of liquid. Gradually add more liquid until you get the right consistency.
- Stir the liquid to check there are no lumps in it. If there are, you will need to liquidise it further and may need to add more fluid.
- Make sure that food and drinks are not too hot.

Preparing Soft Meals

Soft food is food that should be able to be broken down in the mouth and should not require chewing. It should be easily mashed with a fork.

Many foods are naturally soft, so there should be little additional preparation for this diet.

How to Enrich Your Food When Following a Pureed or Soft Diet

When following a liquidized or soft diet, it is necessary to make your meals and drinks more nourishing. The following may be used:-

**Milk:**
- 1 pint of full fat milk/day. Use full fat milk in drinks, milk puddings, jellies, sauces, etc.

**Cream:**
- Add to sauces / milk shakes / milk puddings / custard / soup / porridge / cereals / potato (before liquidising).
- Full fat yoghurt may also be used instead of cream.

**Margarine / Butter / Olive Oil / Sunflower Oil**
- Use full fat spreads.
- Add to vegetables and potatoes after cooking and before liquidising.
- Stir into meat (any meat) / vegetable dishes before liquidising.
- Stir into milk puddings while cooking.
Cheese:
- Always use full fat varieties.
- Sprinkle grated cheese onto cooked vegetables, potatoes, soup (before liquidising).
- Add grated cheese to sauces.

### Points to Remember When Following a Pureed or Soft Diet

- Aim for 3 meals and 3 snacks per day if appetite is reduced. If a meal is refused then offer a nourishing drink instead. For babies under 1 year, 3 meals and infant formula will be sufficient.
- Use full cream milk. Do not use skimmed or low fat milk, as they are lower in energy.
- Try flavoured milks (e.g. strawberry, Aero), or yoghurt drinks, (e.g. Yops). These can be bought at supermarkets.
- Use ordinary fizzy drinks and squash, not diet or low calorie. However, these need to be limited as it can decrease appetite and contains little nutritional value. Fizzy drinks are not suitable for children under 1 year of age.
- Use Vitamin C fortified drinks (including fresh fruit juice) and take at least 1 glass per day.
- Having a drink after a meal can help clear out the mouth
- Make sure your child is taking enough fluids. Suggested amount of fluids daily =

### Foods to Avoid When Following a Pureed or Soft Diet

**Dry and crisp foods:** Muesli, crisps, chips, toast, roast potatoes, fish bones, biscuits (biscuits may be dunked in a hot drink), crackers

**Sticky foods:** Bread and rolls, peanut butter

**Stringy foods:** Gristle, fruit skins and pips, sharp stalks of vegetables and salads, nuts, boiled sweets.

**Tough foods:** Tough meats

Very hot, salty or spicy foods may irritate the mouth and are best avoided

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These are only examples of foods which must be avoided

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**Nourishing Drinks:**

Your child may be sent home on dietary supplements. If your child needs one of these products, your dietitian and medical team will arrange prescription and supply of these items on discharge from hospital.
Dietary supplement prescribed:

Volume and frequency recommended:

Alternatively, try some of the nourishing drinks described below:

Homemade Milk Shake

- 300mls (½ pint) full cream Milk
- 1 scoop of ice cream
- (Any flavour)
- 1 tbsp Nesquick or
- flavourings below
- Banana or other fruit

Method
Place all ingredients in a liquidiser. Blend for 10-15 seconds.

If any of the milk shakes are too thick, liquidise with extra milk.

Raspberry Ripple

- Crush raspberry milkshake syrup (1tbsp)
- 4 tbsp vanilla ice cream
- 2 tbsp fresh chilled milk
- Raspberries or other fruits

Method
Place all ingredients in a liquidiser. Blend for 10-15 seconds.

If any of the milk shakes are too thick, liquidise with extra milk.

Example of Flavourings that can be used include:

Horlicks, Ovaltine, Cocoa, Drinking chocolate, Coffee (for an older child), Squashes, Powdered flavourings (i.e. Nesquick), Syrups (i.e. strawberry, chocolate, mint)

Foods Suitable for Pureed Diet:

Breakfast: Thinly made Reddy Brek or porridge
Crushed Weetabix with full cream milk.

Lunch/Dinner: Liquidise foods with gravy, milk, white or cheese sauce.
Puréed meat (or fish) with potatoes and vegetables liquidized in a blender or passed through a sieve.
Soup with added cream or puréed meat or lentils or beans.
Puréed macaroni/spaghetti in cheese sauce.

**Suitable Snacks:**  
Puréed fruit, e.g., stewed apple or pear passed through a sieve.  
Petit Filous, natural yoghurt or yoghurt with no fruit, nuts or “bits”.  
Ice cream, custard, semolina, Angel Delight, mousse, jelly, ice-lollies, custard

**Suitable Foods for a Soft Diet:**

**Breakfast:**  
Weetabix / Porridge / Readybrek  
Other breakfast cereals well softened with warm milk, e.g. cornflakes

**Lunch/Dinner:**  
Choose naturally soft foods where possible.  
Minced or puréed meat (or fish) with mashed potatoes and soft (well cooked) vegetables.  
Naturally soft meals, e.g. Lasagne, Shepherd’s Pie, Fish Pie (ensure no bones).  
Scrambled egg / Omelette.  
Mashed pasta (e.g. mashed macaroni and cheese) / tinned spaghetti.

**Suitable Snacks:**  
Naturally soft or tinned fruit mashed, e.g. banana, tinned pear  
Petit Filous, natural yoghurt or yoghurt with no fruit, nuts or “bits”.  
Ice cream, custard, semolina, Angel Delight, mousse, jelly, ice-lollies, custard  
Sponge cake served with custard/ice-cream

Revised November 2012

**References**


1 Wilkins-Haug L. Etiology, prenatal diagnosis, obstetrical management, and recurrence of orofacial clefts


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