




NURSING GUIDELINE ON MOUTHCARE (ORAL HEALTH) IN THE INFANT / CHILD	
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## 1.0 Introduction

The mouth is the major portal of the body and it can be a source of disease if its integrity is compromised (Dental Health Foundation 2009). Mouth care / Oral Health is considered an essential part of nursing care and ensuring oral health is recognised as a key quality priority for health and wellbeing (Grap *et al.* 2003, NICE 2014). The nurse plays an integral role in the assessment, care, maintenance and promotion of good oral health (*Sargeant and Chamley 2013*).

### Rationale for Mouth Care


- Keep the mouth clean, moist and maintain oral function
- Prevents infection
- Reduce the risk of ventilator associated pneumonia (VAP) in the ventilated patient (Berry *et al.* 2011)
- Keep lips clean, intact and moist
- Remove and prevent buildup of dental plaque without damaging the gingiva
- Remove food debris from gums and teeth
- Prevention of dental caries
- To freshen the mouth and prevent halitosis
- Prevent of infection / stomatitis
- Alleviate pain and discomfort thereby encouraging an oral intake if permitted
- Promotion of infant/ child's dignity comfort and well-being (Abidia 2007, Cardiff PICU 2007, Gibson and Nelson 2000)

### Oral Health

Good oral health is essential for general well-being and a good quality of life (WHO 2012, Couch Mead and Walsh 2013). It can be viewed as a state of being free from pain, infection and cancer in the mouth. Other vital components include: being free from periodontal disease; caries and tooth loss, and any other disease that can affect a person's ability to bite, chew, smile, speak or impact on their psychosocial wellbeing (WHO 2012). The purpose of this guideline is to provide nurses with the necessary evidence based information to promote, assess and assist in the maintenance of good oral health in the patients within their care.

### Poor Oral Health

There are numerous abnormalities that can occur in the oral cavity affecting the teeth, gums and other structures in the mouth. Dental caries, often referred to as tooth decay, is a disease that impacts on an individual's quality of life. It results in pain, infection, loss of sleep, difficulty eating and drinking, missed school days and can impact on general health (Bach and Manton 2014, Do *et al.* 2014, Moyer 2014). Caries develops when sugars interact with the bacteria in plaque producing acid, which over time breaks down the enamel creating a cavity (Royal College of Surgeons, 2015;

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Dental Health Foundation 2014g). Decay is caused by the frequent intake of sugar and poor oral hygiene. Despite the fact that it is largely preventable, caries remains the most prevalent chronic disease of childhood. 60-90% of five year old children experience decay (Cooper *et al.* 2013).

The gingiva (gums) provide a supporting structure for the teeth (Nelson 2009). The gingiva can become swollen, painful and bleed easily, often associated with poor oral hygiene or as a consequence of an underlying condition, for example neutropenia, diabetes or crohn's disease (Philstrom Michalowicz and Johnson 2005). Gingivitis is inflammation of the gums that is caused by dental plaque accumulating on the teeth adjacent to the gingiva. It is characterized by red, swollen gums that are prone to bleeding. Gingivitis does not affect the supporting function of the gingiva and is reversible. Periodontitis is more severe and can lead to a loss of the connective tissue and bone that supports the teeth which can in turn lead to tooth loss (Philstrom Michalowicz and Johnson 2005).

Other structures within the oral cavity include the tongue, lips, cheeks and the hard and soft palate. There are numerous oral mucosal conditions that can affect these structures such as ulceration, orofacial granulomatosis and infections, for example candida and the herpes simplex virus (Hussey *et al.* 2011, Viera-Andrade 2013). Oral mucosal abnormalities can be as a result of trauma, associated with other conditions or indeed be idiopathic (Dowst-Mayo 2013, Hussey *et al.* 2011, Edwards and Kanjirath 2010).

### **Diet and Oral Health**


The relationship between diet and dental caries has long been investigated. Eating and drinking patterns can have a significant impact on an individual's oral health. A seminal study by Gustafson *et al.* (1954) found that the frequency of sugar intake between meals was linked to an increase in dental caries. Evidence suggests that there is a link between caries and the frequency of sugar consumption (Holt 1991, Bach and Manton 2014).

### **Sugary Drinks**

There is more attention being placed on 'sugary' drinks in recent years. Sugary drinks including fruit juices, fizzy drinks, cordials, squashes and smoothies, particularly when consumed between meals can significantly contribute to caries (Bach and Manton 2014).

### **Feeding Bottle**

Inappropriate use of a feeding bottle has a very significant negative impact on oral health. The constant or frequent sipping of sugar sweetened beverages has been identified as a major contributor to caries. The World Health Organization (WHO 2003) warn of the dangers of allowing a child to drink at will from a bottle containing sweetened liquids and allowing a child a drink, other than water in bed. These scenarios result in the almost continual bathing of the teeth in sugar (WHO 2003, Dental Health Foundation 2014g).

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## Recommendations to Reduce the Risks of Oral Health Complications from Dietary Habits

- Encourage 3 meals and no more than, 2 to 3 snacks per day
- Outside of these times only milk or water should be offered
- Only water should be offered at night
- Sugary foods and drinks should be given as treats and only at mealtimes
- Only ever put milk or water in a baby feeding bottle, never sugary drinks
- Encourage drinking liquids from a cup
- Discontinue the use of a feeding bottle by the time a child is 1 year of age
- Never allow a child to sleep with a bottle in his or her mouth
- “Children should be fed and put to bed – NOT put to bed and fed”
- Use sugar free medicines when available (HSE UCC and HRB 2009, Dental Health Foundation 2014a)


## 2.0 Oral Assessment

The use of a validated oral assessment tool (OAT) can improve assessment and compliance regarding mouth care (Cason *et al.* 2007, Garcia *et al.* 2009, Berry *et al.* 2011).

Action	Rationale Evidence and Reference
<p>Use a standardised oral assessment tool, which includes the teeth, gums, tongue, mucous membranes and lips.</p> <p><b>General Wards:</b> Oral Assessment Tool 1 (Appendix I)</p> <p><b>PICU:</b> Oral Assessment Tool 2 (on ICIP) (Appendix II)</p> <p><b>St John's Ward (Immune-compromised Haematology / Oncology Patients):</b> Oral Assessment Tool 3 (incorporating Mucositis Grading Scale). (Appendix 3 and Appendix 4).</p> <p>Assess infant / child's mouth using Oral Assessment</p>	<p>To ensure best practice and a thorough systematic oral assessment, planning and evaluation of care (Johnson <i>et al.</i> 2010, Berry <i>et al.</i> 2011). Oral abnormalities are often quickly identified on assessment. It provides a baseline for nursing care, allows monitoring of response to treatment and timely identification of changes in the condition of the infant / child's mouth (Abidia 2007, PICU Cardiff 2007).</p> <p>OAT is a validated oral assessment tool for use in</p>

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<p>Tool (OAT) I, 2 or 3 on admission and thereafter as clinically indicated.</p> <p>Children at risk of poor oral hygiene include:</p> <ul style="list-style-type: none"> <li>• Nil by mouth / Post-operative Patient</li> <li>• Immuno-compromised</li> <li>• Receiving Antibiotics</li> <li>• Oral / Facial Surgery</li> <li>• Congenital Heart Disease</li> <li>• Gastro-intestinal Patients e.g. Crohn's disease</li> <li>• Altered nutrition / Failure to Thrive</li> </ul> <p><i>NB: Thus list is not exhaustive</i></p>	<p>children (Eiliars <i>et al.</i> 1988). (Hayes and Jones 1995, Johnson <i>et al.</i> 2010, McNeill 2000, O'Reilly 2003, AACN 2010).</p>
<p>Explain assessment procedure to child as clinically indicated.</p>	<p>To ensure good visualisation of the mouth (MacQueen <i>et al.</i> 2012).</p>
<p>Ensure good lighting to perform the assessment i.e. use pen torch.</p>	<p>Universal precautions and to minimise cross infection (MacQueen <i>et al.</i> 2012).</p>
<p>Perform assessment procedure using non-sterile gloves.</p>	<p>Reduce cross infection (2011).</p>
<p>Decontaminate hands.</p>	<p>Continuity of patient care (An Bord Altranais 2002).</p>
<p>Document procedure and assessment.</p>	

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### 3.0 Mouthcare in the Infant / Child

**NB: use OAT I** (Appendix I)

#### Oral Hygiene

Good oral hygiene is essential to good oral health and general well-being. The main goal is the removal of plaque from all surfaces of the teeth.

#### Tooth brushing

The Dental Health Foundation (2014b) recommend that tooth brushing begin as soon as a child's first tooth appears and continues for life. It is an important part of daily care and should be carried out twice per day. All surfaces of the teeth should be cleaned with a small, soft toothbrush. Each child should have their own toothbrush and it should never be shared. A pea sized amount of fluoride toothpaste, containing 1450 parts per million of fluoride should be used for all children 2 years and over (Dental Health Foundation 2014b). The fluoride concentration is written on the packaging of all fluoridated toothpastes. Children under 7 should be helped to brush their teeth. Some children may need to be helped for a longer period of time. When a child is competent to carry out tooth brushing themselves, they should continue to be supervised. This is to ensure it is carried out effectively and to avoid the over ingestion of fluoride.

#### Children under 2 Years of Age

Use a small soft toothbrush and water twice per day, morning and night (Dental Health Foundation 2014b).


#### Children over 2 Years of Age

Use a small soft toothbrush with a pea sized amount of fluoride toothpaste twice per day, morning and night.



Figure 1: Correct amount of toothpaste (Audio-visual, OLC HC 2015).



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- Spit out toothpaste, do not rinse. This leaves a thin film of fluoride on the teeth which is helpful in protecting the enamel. Rinsing with water reduces the caries preventive effect found in fluoride toothpaste (*Scottish Intercolliate Guideline Network 2014*).
- Brush teeth for children 7 years and under to ensure correct technique and prevent the over ingestion of fluoride.
- Supervise tooth brushing over 7 years
- **DO NOT** allow the child to swallow large amounts of fluoride toothpaste. This increases the risk of flurosis (white spots or opacities on the tooth enamel) (GOSH 2014)

### Effective Tooth Brushing Technique

- Use a soft bristled toothbrush with a head small enough to reach all areas of the teeth.
- The toothbrush should be positioned at a 45 degree angle to the gum line to clean the inner and outer surfaces of the teeth.
- To clean the inner surfaces of the top and bottom front teeth, turn the toothbrush to a vertical position.
- Ensure the biting surfaces of the molar teeth are also cleaned.
- Use several short strokes, moving the toothbrush back and forth when cleaning all surfaces of the teeth. (American Dental Association 2014a)

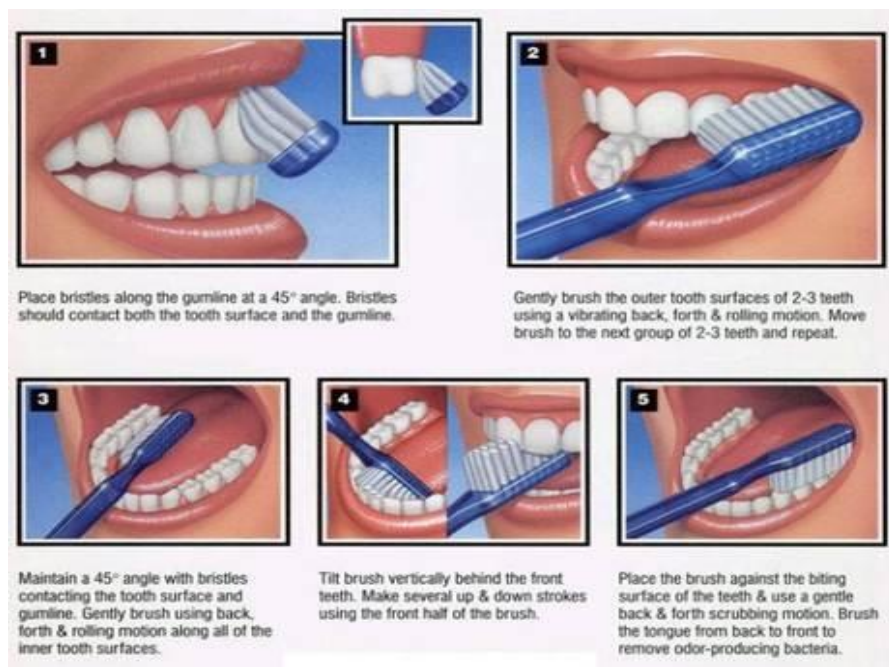



Figure 2: Correct tooth brushing technique  
(Google images, no copyright holder identified)



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## 4.0 Mouthcare in the Ventilated Infant / Child in PICU.


### **NB: Use OAT 2** (Appendix 2)

The oropharyngeal flora of critically ill patients changes from predominately positive organisms to predominantly gram negative organisms, within 48 hours of admission. This bacterial flora is more virulent and migrates to the lungs resulting in hospital acquired pneumonia. There is also a higher risk in the intubated patient because the endotracheal tube provides a pathway for bacteria into the child's lungs (Johnson *et al.* 2010). Medication used in PICU i.e. inotropes, diuretics, anticholinergics, sedatives/ anaesthetic, anticonvulsants, antihistamines and antihypertensive agents may increase the risk of the child developing reduced saliva flow (xerostomia) thus altering the mouth's primary cleansing method. This may be further exacerbated by dehydration and stimulation of the sympathetic nervous system (McNeill 2000, Munro *et al.* 2004). The infant / child in PICU is also at greater risk of nosocomial infection due to other factors i.e. supine position, lack of elevation of head of bed, fluid restriction, dental plaque, young age, immunocompromised, decreased mobility, ineffective / absent gag and cough reflex, poor nutrition, enteral feeding and presence of a naso-gastric tube (Grap *et al.* 2003, Johnson *et al.* 2010).


Research has demonstrated that there is a significant increase in plaque accumulation and gingival inflammation from PICU admission to discharge (Franklin *et al.* 2000). Inadequate oral hygiene has been associated with an increase in dental plaque, bacterial colonisation of the oropharynx and an increase in ventilated-associated pneumonia (VAP). VAP is also one of the most important nosocomial infections in critical care and the second most common cause of nosocomial infection in PICU children. It also contributes to increased length of hospital stay and mortality. Research indicates that reducing oropharyngeal colonisation, reduces the pool of organisms that may contribute to VAP (Franklin *et al.* 2000, Grap *et al.* 2004, Gardia *et al.* 2009, Pedreira *et al.* 2009, AACN 2010, Johnson *et al.* 2010, Stonecypher 2010, Berry *et al.* 2011). Effective mouth care is therefore an important strategy in reducing nosocomial pneumonia in the critically ill patient (Bingham *et al.* 2010, Rello *et al.* 2010, Berry *et al.* 2011).

### **Equipment Required**


- Wooden Spatula
- Sterile Water for Injection
- Suction Toothbrush in the PICU Patient
- Clean bowl or receiver
- Vaseline
- Non-foaming (sodium laurel sulphate free) toothpaste
- Paper tissue / gauze
- Small torch if required
- Non-sterile gloves (Dougherty and Lister 2015).

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Action	Rationale Evidence and Reference
Wash / decontaminate hands.	To prevent cross infection, universal precautions (Fraise and Bradley 2009, OLCCHC 2010, 2011).
Explanation to child as appropriate.	To inform the child and gain their cooperation and trust (Ball Binder and Cowen 2011, Hockenberry and Wilson 2012).
Collect equipment.	To aid the procedure (Dougherty and Lister 2015).
Use a soft bristled toothbrush i.e. Dr Barman or TePe toothbrush for intubated dentate children every 12 hours to brush their teeth in conjunction with yaunker sucker (Appendix II).	To remove debris, plaque and assist in decreasing microbial colonisation (Garcia 2009, Berry <i>et al.</i> 2011). The tooth brush is more effective and superior in removing dental plaque and gingival stimulation when compared to a foam swab (Franklin <i>et al.</i> 2000, Pearson and Hutton 2002, Munro and Grap 2004, Garcia 2009, AACN 2010).
Apply a smear of toothpaste containing 1450 ppm fluoride, before brushing teeth for of minimum of 2 minutes.	To ensure thorough and effective cleaning of the child's teeth (Johnson <i>et al.</i> 2000, Berry <i>et al.</i> 2009, MacQueen <i>et al.</i> 2012). Fluoride in toothpaste has been proved to reduce dental caries (Johnson <i>et al.</i> 2010, Dental Health Foundation 2014b).
Brush the tongue gently also.	The tongue is normally abraded during normal eating and this doesn't occur in the intubated patient (Christensen 1998). The tongue is coated with millions of organisms which contribute to halitosis. Tongue brushing reduces this incidence (Christensen 1998).
Non-foaming (sodium lauryl sulphate free) toothpaste is preferable. Suction out excess toothpaste but don't rinse.	Non-foaming toothpaste is easier to clear from the mouth (Berry and Davidson 2006).
Rinse toothbrush after use and allow to dry to air.	To prevent contamination (Jones 1998, Berry <i>et</i>

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<p>Keep oral care equipment and toothbrush in a designated container.</p> <p>Clean mouth with soft bristled toothbrush or gauze moistened with Sterile Water <sup>TM</sup> for Injection for infants whose teeth haven't erupted and all patients who are nil by mouth every 2 hours.</p> <p>Use gauze only, wrapped around little finger to moisten the mouth a minimum of every 2 hours as clinically indicated (Appendix II). This may be the preferred method in patients where tooth brushing is contraindicated i.e. bleeding gums related to thrombocytopenia.</p> <p><b>NB: DO NOT USE</b> foam swabs as they are contraindicated in all children because of the identified risk of choking. .</p> <p><b>NB: DO NOT USE</b> lemon and glycerine swabs.</p> <p><b>NB:</b> Chlorhexidine 0.12% Oral Rinse may be useful pre-operatively in adult cardiac patients only.</p>	<p><i>al.</i> 2009).</p> <p>Tooth brushing is beneficial in removing debris and subsequently reducing colonisation of dental plaque (Halm and Armola 2009). Tap water is not recommended for routine oral care in the critically ill patient because of the potential risk for hospital taps and pipes to become colonised with microbial organisms (Trautman <i>et al.</i> 2001, Anaissie Penzak and Dignani 2002, Muscarella 2004, Department of Health 2012). Normal saline may promote healing of lesions of the oral mucosa but it also has a drying effect and routine use is not recommended (Berry and Davidson 2006).</p> <p>Gauze is only effective for mucosal tissue stimulation (Grap <i>et al.</i> 2003, Johnson <i>et al.</i> 2010). Water is inexpensive and has minimal side effects (O'Reilly 2003).</p> <p>(Roberts 2000, MHRA 2012).</p> <p>These swabs initially cause salivation production but then cause rebound xerostomia. They can also cause irritation and demineralisation of tooth enamel because of their acidity (Berry <i>et al.</i> 2011, Johnson <i>et al.</i> 2010).</p> <p>Chlorhexidine 0.12% may be effective in reducing oropharyngeal colonisation and VAP in adult cardiac patients (Pinede <i>et al.</i> 2006, Halm and Armola 2009). There is no evidence in the literature to support use in paediatrics (Pedreira <i>et al.</i> 2009, Jacomo</p>
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<p>Apply Petroleum Jelly (Vaseline), Lanolin or oral moisturising to lips, minimum 2-4 hourly as clinically indicated.</p>	<p><i>et al.</i> 2011, Kusahara 2012, Kusahara Peterlini and Pedreira 2012, Klompas <i>et al.</i> 2014).</p> <p>To keep lips moist and prevent lip dehydration. Intubated patients are at high risk of drying and cracking of their lips because they are unable to naturally moisten them using the tongue. Vaseline and lanolin also reduce trans epidermal water loss due to its occlusion effect and retains moisture (Berry and Davidson 2009, AACN 2010, GOSH 2014).</p>
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## 5.0 Mouth Care in the Haematology Oncology Patient


**NB: use OAT 3** (Appendix III)

Despite advances in chemotherapy and radiotherapy, cancer treatment still remains associated with clinically important, sometimes dose-limiting, side effects e.g. mucositis, candidiasis (and other fungal infections), xerostomia, salivary gland damage and Herpes virus infection. Chemotherapy and radiation induced toxicity affect rapidly dividing cells. The oral mucosa is therefore very susceptible to damage.

Oral complications occurring during and following cancer treatment are common and can cause pain, difficulty in swallowing, speech and poor nutrition (Miller *et al.* 2012). Secondary complications such as dehydration and malnutrition can occur. The oral cavity can be a source of systemic infection in myelo suppressed patients and can impact severely on a patient's quality of life (NCI 2014).

Mouth care for paediatric Haematology/oncology patients is an important aspect of care with the principle objective of ensuring the child's mouth is clean, moist and free from infection. Regular and thorough mouth care is vital in all children, even if they are not eating (Hogan 2009). All children should undergo a dental assessment by a paediatric dentist at the time of cancer diagnosis or before cancer treatment or hematopoietic stem cell transplant, to prevent significant dental disease compromising the patient (UKCCSG – PONF Mouth Care Group 2006, NCI 2008, OLCCHC 2013).

Oral assessment should be performed on each admission and daily whilst on chemotherapy using a systematic and thorough approach to monitor changes and implement appropriate treatment (Wohlschlaeger 2004) using the Oral Assessment Tool 3, grade mucositis. Pain assessment should be undertaken to ensure adequate pain control.

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Opiate analgesia may be required for the control of severe pain /mucositis (OLCHC 2001). The dental team should be notified of any oral problems. An oral assessment should be undertaken every six months by a member of the dental team. (OLCHC 2013, Yavuz and Yilmaz 2015).

Oral hygiene advice both verbal and written should be given to children and parents prior to commencing chemotherapy treatment. Each patient is given a "Passport – Parent Held Record" with information within (OLCHC 2013, Yavuz and Yilmaz 2015). General mouth care advice as in Section 3. The child's tooth brush should be for the sole use of the child and changed on a 3 monthly basis. A child's toothbrush should be changed following an oral infective episode.

**Please NOTE # Bone Marrow Depression** – there is a risk of bleeding if patient is thrombocytopenic. If unable to brush, rinse with water or use gauze swabs with water and consult with the dental team for advice. Patients who are neutropenic and febrile, will require antibiotic therapy as per Febrile Neutropenic Policy (OLCHC 2013).

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## 7.0 Glossary of Terms

### **Candidiasis (Oral Thrush)**

This is caused by a yeast like fungus, *Candida Albicans*, which normally inhabits the digestive track and vagina. It causes soft white plaques on the tongue and mucosa.

### **Dental Plaque**

Dental plaque (biofilm) is a colourless sticky naturally occurring film of bacteria and saliva proteins which adheres to the surface of teeth. It cannot be removed with water and it requires tooth brushing. Dental plaque if not removed results in tooth decay and gum disease.

### **Gingivitis**

Inflammation of the gingival (gum) of the mouth. The commonest cause is plaque related i.e. bacterial plaque on adjacent teeth. Other causes include leukaemia or steroid induced. It is characterised by oedema, erythema and fibrous bleeding of the gingiva. Effective oral hygiene is required immediately because within 72 hours there is a shift to increasing numbers of anaerobic gram-negative bacilli.

### **Halitosis**

Bad breath (oral malodour) is caused by bacteria which produces excessive amounts of volatile Sulphur compounds (VSCs).

### **Mucositis**

Mucositis is a toxic inflammatory reaction occurs that develops along the entire gastro-intestinal tract as a result of radiotherapy or chemotherapy. In the mouth it presents as redness, ulceration and sloughing of tissues. It is a common side effect of cancer treatment.

### **Saliva**

Oral tissues and teeth are constantly bathed by saliva which is secreted by the salivary glands. Its presence is vital to oral health. The production of saliva increases during eating and it acts as a buffer neutralising acids thus preventing tooth decay. Other functions include acts as a solvent to facilitate taste; lubricates and protects mucosa from irritation; facilitates speech and swallowing; anti-microbial and protects tooth enamel from salivary proteins.

### **Stomatitis**

Inflammation and infection of the mucous membranes of the mouth. It is a painful condition and there may or may not be ulceration.


### **Ulceration**

Ulcers which are white, small and punched out lesions on epithelial surfaces of the mouth, probably caused by a virus.

### **Xerostomia**

A dry mouth which is caused by reduced or absent saliva flow.


(Estes and Meduri 1995, Sprarcar 1995, Dental Health Foundation 2014c, 2014d, 2014e, 2014f, SIGN 2014).

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## 8.0 Appendices

### Appendix 1

#### Oral Assessment Tool I

 <b>Oral Assessment Tool 1</b> <b>Our Lady's Children's Hospital, Crumlin</b> <b>For infants and children in Ward Areas</b>								
<ul style="list-style-type: none"> <li>Use Assessment tool 1 for the wards</li> <li>Use Assessment tool 2 for PICUs</li> <li>Use Assessment tool 3 for St Johns and HODU</li> </ul>								
ORAL ASSESSMENT TOOL								
Date								
Time								
<b>Soft tissue</b> <b>Lips</b> 0 = Smooth, pink, moist 1 = Dry or cracked 2 = Ulcerated or Bleeding								
<b>Tongue</b> 0 = Pink, moist, papillae present 1 = Coated or loss of papillae 2 = Blistered or cracked Other. white spots, ulcers <i>Please detail</i>								
<b>Mucous Membrane</b> 0 = Pink and moist 1 = Reddened or coated 2 = Ulcerated +/- bleeding Other. white spots, ulcers <i>Please detail</i>								
<b>Gingiva / Gums</b> 0 = Pink and moist 1 = Oedematous / redness 2 = Spontaneous bleeding Others. ulcers, white spots, <i>Please detail</i>								
<b>Teeth (If no teeth, score 1)</b> 0 = Clean & no debris 1 = Localised plaque or debris 2 = Generalised plaque/ debris								
<b>Dental Pain</b> 0 = No pain 1 = Mild pain Pain tool 2 = Severe pain <i>Please use pain score as per Observation chart</i> (Note location of pain)								
<b>If a score of 2 is given for any field consider medical and/or dental review</b>								
Initials								
NMBI number								

Adapted from Eilers et al 1988.

#### Guidance

- All patients have an oral assessment with their admission assessment, use this tool to guide daily practice.
- If obvious oral hygiene needs place the assessment tool in the patient end of bed notes for daily use.
- Calculate a score per area and detail the score in the section provided.
- If a score of 2 is given to any area consider referral to the dental department for review
- Detail the assessment in Careplan 1 and suggest evaluation
- See overleaf for daily dental hygiene guidance for infants and children


Created by Oral Assessment Team, March 2014

Patient Name.....

HCR no .....


Ward.....



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## Appendix 2

### Oral Assessment Tool 2 (PICUs)

<b>Oral Assessment Tool 2</b> <b>Our Lady's Children's Hospital, Crumlin</b> <b>For Infants and Children in PICU</b> <i>(Not for use in St Johns or General Wards)</i>											
<b>ORAL ASSESSMENT TOOL</b>											
Category	Date	1	2	3	4	5	6	7	8	9	10
Time											
<b>Voice</b> 1 = Normal 2 = Deep or raspy 3 = Difficulty talking / Painful /Crying											
<b>Swallow</b> 1 = Normal 2 = Pain on swallowing 3 = Unable to swallow /Drooling											
<b>Lips</b> 1 = Smooth, pink, moist 2 = Dry or cracked 3 = Ulcerated or Bleeding											
<b>Tongue</b> 1 = Pink, moist, papillae present 2 = Coated or loss of papillae 3 = Blistered or cracked											
<b>Mucous Membrane</b> 1 = Pink and moist 2 = Reddened or coated 3 = Ulcerated +/- bleeding											
<b>Saliva (Consistency)</b> 1 = Normal 2 = Watery 3 = Thick and Ropey											
<b>Saliva (Amount)</b> 1 = Normal 2 = Hypersecretion (drooling) 3 = Hyposecretion (xerostomia)											
<b>Halitosis</b> 1 = Absent 2 = Mild 3 = Severe											
<b>Teeth (If no teeth, score 1)</b> 1 = Clean & no debris 2 = Localised plaque or debris 3 = Generalised plaque/ debris											
<b>Gingiva / Gums</b> 1 = Pink and moist 2 = Oedematous / redness 3 = Spontaneous bleeding											
<b>Candida (Thrush)</b> 1 = No 3 = Yes											
<b>Dental Pain</b> 1 = No pain 2 = Mild pain 3 = Severe pain											
<b>Facial / Oral Surgery or Trauma</b> 1 = Yes 2 = No											
<b>Oral Cavity Total Score</b>											
<b>Initials</b>											


(Adapted from Eliers *et al* 1988)

Created by Oral Assessment Team, July 2015

Patient Name.....  
HCRI no .....

NB: Score 3 in any category requires a referral to intensivist team / dental department for review



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### Appendix 3

#### Oral Assessment Tool 3 (Haematology / Oncology Patients)

Our Lady's Children's Hospital, Crumlin											
<b>ORAL ASSESSMENT TOOL</b>											
Category	Date:										
	Time										
<b>VOICE</b> 1 = Normal 2 = Deep or raspy 3 = Difficulty talking / Painful/crying											
<b>SWALLOW</b> 1 = Normal 2 = Pain on swallowing 3 = Unable to swallow/Drooling											
<b>LIPS</b> 1 = Smooth, pink, moist 2 = Dry or cracked 3 = Ulcerated or Bleeding											
<b>Tongue</b> 1 = Pink, moist, papillae present 2 = Coated or loss of papillae 3 = Blistered or cracked											
<b>Mucous Membrane</b> 1 = Pink and moist 2 = Reddened or coated 3 = Ulcerated +/- bleeding											
<b>Saliva</b> 1 = Watery 2 = Thick and ropery 3 = Absent											
<b>Teeth</b> <b>If no teeth, score 1</b> 1 = Clean & no debris 2 = Localised Plaque or debris 3 = Generalised Plaque/ Debris											
<b>Gingiva / Gums</b> 1 = Pink and moist 2 = Oedematous / redness 3 = Spontaneous bleeding											
<b>Candida</b> 1 = No 3 = Yes											
<b>PAIN</b> 1 = No pain 2 = Mild pain 3 = Severe pain											
<b>Oral cavity total score</b>											
<b>Initials</b>											

Grade 1 = Score 11-14  
Grade 2 = Score 15 - 19

Grade 3 = Score 20 - 24  
Grade 4 = Score 25 - 30


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## Appendix 4 Mucositis Grading Scale

**Healthy Mouth:** The mouth is pink and healthy, no lesions present, no bleeding and the mucosa is moist.

Grade	Description	Action
<b>Grade 0</b>	Normal mouth	<ul style="list-style-type: none"> <li>Oral hygiene as for age BD</li> <li>Oral assessment BD</li> </ul>
<b>Grade 1</b>	<ul style="list-style-type: none"> <li>Erythema of oral mucosa.</li> <li>May have some pain / discomfort</li> </ul>	<ul style="list-style-type: none"> <li>Oral hygiene as for age BD</li> <li>Oral assessment BD</li> <li>Assess pain score</li> <li>Administer analgesia as required (PO/NG)</li> </ul>
<b>Grade 2</b>	<ul style="list-style-type: none"> <li>Isolated small ulcerations</li> <li>Mucosa may bleed on probing</li> <li>Saliva is thicker than normal</li> <li>Patient may only be able to tolerate bland food but can drink as normal</li> </ul>	<ul style="list-style-type: none"> <li>Oral hygiene as for age BD</li> <li>Oral Assessment BD</li> <li>Assess pain score</li> <li>Administer analgesia as required (PO / NG / NCA / PCA )</li> <li>Dental review as required</li> <li>Monitor intake and output</li> <li>Monitor full blood count</li> </ul>
<b>Grade 3</b>	<ul style="list-style-type: none"> <li>Ulcers and extensive erythema</li> <li>White patches covering more than 25% of oral mucosa</li> <li>Unable to swallow solid diet</li> <li>Saliva thick and ropey</li> <li>Hoarse / raspy voice</li> <li>Moderate / severe pain</li> </ul>	<ul style="list-style-type: none"> <li>Oral hygiene as for age BD as tolerated</li> <li>Oral assessment BD</li> <li>Assess pain score</li> <li>Administer analgesia (NG / IV)</li> <li>Dental review</li> <li>Monitor intake and output</li> <li>Assess nutrition / hydration</li> </ul>
<b>Grade 4</b>	<ul style="list-style-type: none"> <li>Hemorrhagic ulceration</li> <li>Cannot swallow saliva / drooling</li> <li>Severe pain</li> <li>Unable to eat or drink</li> <li>Hoarse / raspy voice</li> </ul>	<ul style="list-style-type: none"> <li>Oral hygiene as for age BD as tolerated</li> <li>Oral assessment BD</li> <li>Assess pain score</li> <li>Administer analgesia (PCA/ NCA)</li> <li>Dental review</li> <li>Monitor intake and output</li> <li>Assess nutrition / hydration</li> </ul>
<b>Oral Hygiene</b>		<b>Age Related</b>
<b>Children &gt; 2 years</b>		Clean teeth at least twice daily using soft toothbrush and fluoride toothpaste (full strength 1450ppmF). Children < 7 years, parents should supervise brushing, and should brush child's teeth on one occasion during the day.
<b>Children &lt; 2 years</b>		Parent / carer brushes child's teeth twice daily with soft wet toothbrush (no toothpaste)
<b>Babies without teeth</b>		Parent / carer cleans mouth with moist gauze (water) if needed

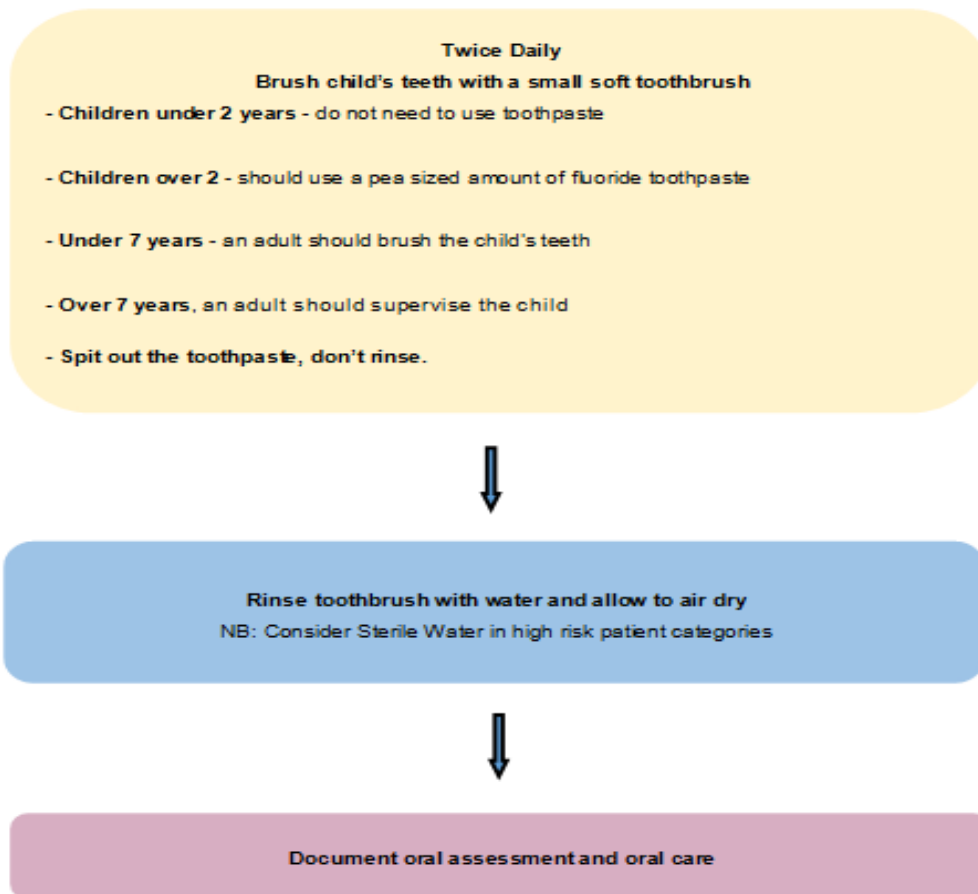
*Supportive Care Guidelines Haematology Oncology (OLCHC 2013).*

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## Appendix 5

### Oral Hygiene: Nursing Guideline for Children

#### Perform Oral Assessment Using the Oral Assessment Tool (OAT)



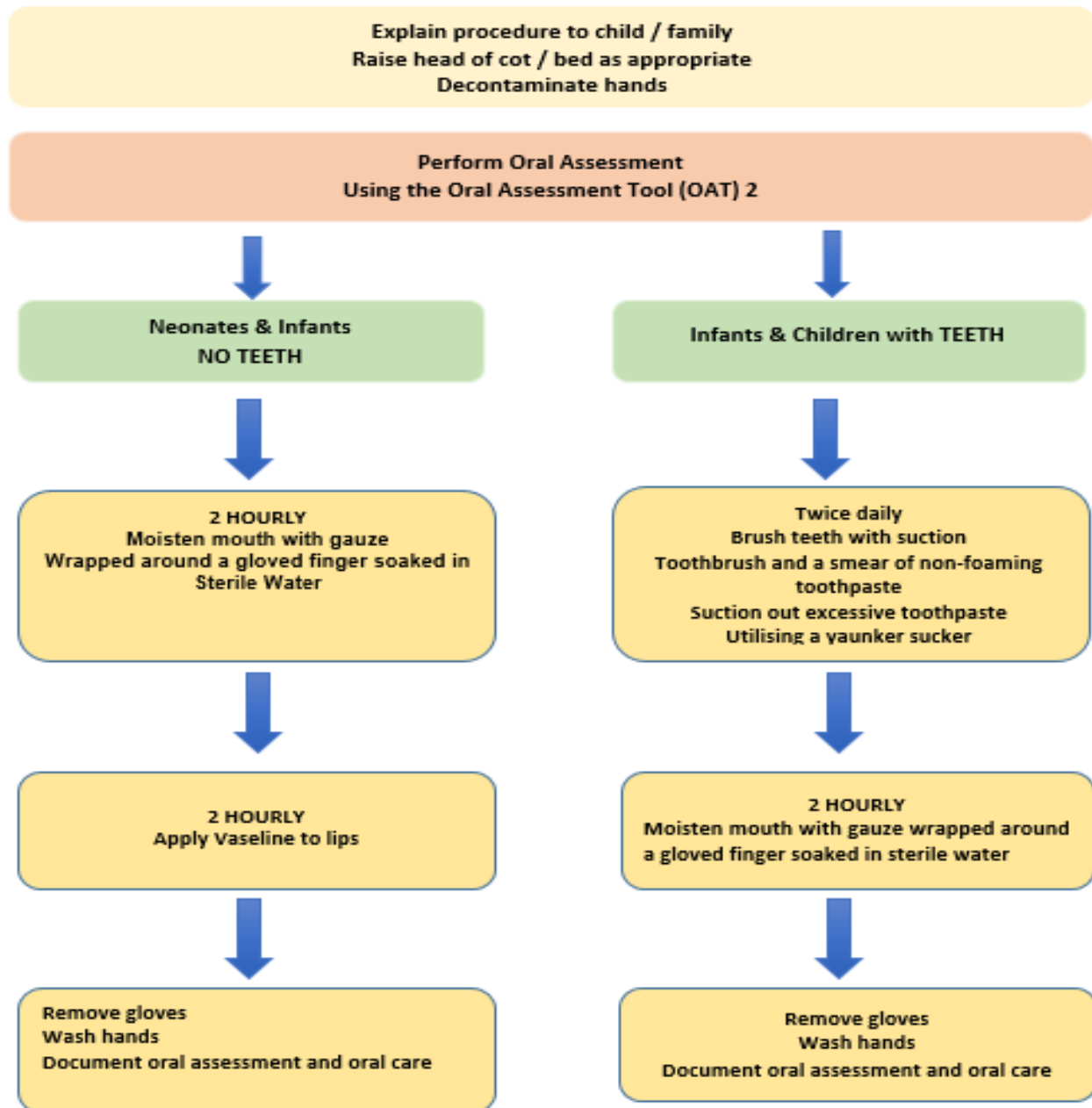
Adapted from Johnson et al. 2010 (OLCHC 2016)

Our Lady's Children's Hospital, Crumlin		
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### Algorithm PICU Infant / Child

#### Oral Hygiene in the PICU:

#### Guideline for Intubated / Children or With a Lowered Glasgow Coma Scale



Adapted from Johnson *et al.* 2010 (OLCHC 2016)