PRESEPTAL AND ORBITAL CELLULITIS IN CHILDREN - CLINICAL GUIDELINE

1. Aim/Purpose of this Guideline
   
   1.1. This guideline applies to medical and nursing staff caring for a child with Preseptal and Orbital Cellulitis.

2. The Guidance
   
   2.1. Preorbital and orbital cellulitis are both infections that may present with swelling and erythema of the eyelid and periorbital tissues. The terms preseptal and septal may be used instead of periorbital and orbital respectively. The key differential to these infections is whether there is infection posterior to the orbital septum, as this has serious consequences in terms of vision, serious CNS infection or cavernous sinus thrombosis.

   2.2. **Preseptal cellulitis** is most common in the under 5year age group. There is often a site of initial infection such as a minor injury to the skin or insect bite to the periorbital tissues. Infection can sometimes arise secondary to an URTI. There is tenderness, swelling, warmth and redness of tissues. Fever may be present. Swelling may be sufficient to obscure the eye, in such cases an ophthalmological examination is essential to exclude orbital cellulitis. The most common organisms are *Strep* pyogenes, *Strep pneumoniae* and *Staph aureus*. *Haemophilus influenza* may be a cause in unimmunised children and may be associated with concurrent meningitis. Atypical organisms including fungi may be responsible in immunocompromised and diabetics. Mixed aerobes and anaerobes are more common in the over 15 years.

   2.3. **Orbital cellulitis** usually arises secondary to spread from the ethmoid sinus and bone, which progresses to subperiosteal abscess then orbital abscess or cellulitis. It can then extend more posteriorly to cause cavernous sinus thrombosis and meningitis. There may be a co-existent URTI or history of recent infection. Risk factors for intracranial infection include those > 7years; subperiosteal abscess; headache and fever persisting despite IV antibiotics; immunocompromised and diabetics. Bilateral periorbital oedema may indicate cavernous sinus thrombosis. In cases where meningitis is suspected LP may be required but should only be undertaken after imaging as intracranial extension may be silent.
3. **Monitoring compliance and effectiveness**

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Compliance with guideline and flow chart process outlined in appendix 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Paediatric Consultant</td>
</tr>
<tr>
<td></td>
<td>Audit Lead</td>
</tr>
<tr>
<td>Tool</td>
<td>Individual case by case review of medical notes or specific audit tool</td>
</tr>
<tr>
<td>Frequency</td>
<td>As required or indicated</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>Paediatric consultant</td>
</tr>
<tr>
<td></td>
<td>Directorate audit and guidelines meeting</td>
</tr>
<tr>
<td>Acting on recommendations and Lead(s)</td>
<td>Paediatric consultant</td>
</tr>
<tr>
<td></td>
<td>Directorate audit and guidelines meeting Required actions will be identified and completed in 3-6 months</td>
</tr>
</tbody>
</table>
| Change in practice and lessons to be shared | Possible wording to use for this column.
Required changes to practice will be identified and actioned within 3-6 months. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders |

4. **Equality and Diversity**

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the ‘Equality, Diversity & Human Rights Policy’ or the [Equality and Diversity website](#).

4.2. **Equality Impact Assessment**

The Initial Equality Impact Assessment Screening Form is at Appendix 2.
Appendix 1: Flow Chart

Child presenting with swelling of eyelid and/or periorbital tissues

Mild swelling

NO concerning features on examination
- no Proptosis
- no ophthalmoplegia or pain on eye movements
- no chemosis
- no headache
- normal visual acuity
- normal light reflexes
- systemically well
- no CNS signs or symptoms

Treat with oral antibiotics
- Augmentin
  (if no fever consider allergic reaction or nephrotic syndrome)
Discharge home with advice to return if worsening or any concerning features.

More marked swelling or unwell,
Swelling of eyelid and periorbital tissues but eye visible and no concerning features
- no Proptosis
- no ophthalmoplegia or pain on eye movements
- no chemosis
- no headache
- normal visual acuity
- normal light reflexes
- no CNS signs or symptoms

Admit
- Take bloods including FBC and blood cultures
- Start IV antibiotics
  - Metronidazole and Ceftriaxone
    (if <4 weeks Cefotaxime)
- Clindamycin if penicillin allergic
  If symptoms progress seek ophthalmological and ENT review.
  Consider CT imaging

Swelling such that unable to examine eye properly or features suggest Orbital cellulitis or infection posterior to orbital septum
- Proptosis
- Ophthalmoplegia or pain with eye movements
  - Diplopia
- Reduced visual acuity
- Abnormal light reflexes
- Conjunctival hyperaemia or Chemosis of globe
- Severe or persistent headache
- Toxic or systemically unwell
- CNS signs or symptoms

Admit
- Proceed to Orbital Cellulitis Table
Clinical Guideline for the management of Preseptal and Orbital Cellulitis in Children.

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<table>
<thead>
<tr>
<th><strong>Appendix 2. Governance Information</strong></th>
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<tbody>
<tr>
<td><strong>Document Title</strong></td>
</tr>
<tr>
<td><strong>Date Issued/Approved:</strong></td>
</tr>
<tr>
<td><strong>Date Valid From:</strong></td>
</tr>
<tr>
<td><strong>Date Valid To:</strong></td>
</tr>
<tr>
<td><strong>Directorate / Department responsible (author/owner):</strong></td>
</tr>
<tr>
<td><strong>Contact details:</strong></td>
</tr>
<tr>
<td><strong>Brief summary of contents</strong></td>
</tr>
</tbody>
</table>
| **Suggested Keywords:**               | Cellulitis  
|                                      | Preseptal  
|                                      | Orbital  
|                                      | children |
| **Target Audience**                   | RCH ✔  
|                                      | PCH  
|                                      | CFT  
|                                      | KCCG |
| **Executive Director responsible for Policy:** |  |
| **Date revised:**                     | January 2015 |
| **This document replaces (exact title of previous version):** | The management of preseptal and orbital cellulitis |
| **Approval route (names of committees)/consultation:** | Paediatric consultants  
|                                      | Directorate audit and guidelines meeting  
|                                      | ENT consultant  
|                                      | Microbiology consultant |
| **Divisional Manager confirming approval processes** | Sheena Wallace |
| **Name and Post Title of additional signatories** | Not Required |
| **Signature of Executive Director giving approval** | {Original Copy Signed} |
| **Publication Location (refer to Policy on Policies – Approvals and Ratification):** | Internet & Intranet ✔  
|                                      | Intranet Only |
| **Document Library Folder/Sub Folder** | Paediatrics |
| **Links to key external standards**   | none |
Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
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</thead>
<tbody>
<tr>
<td>July 13</td>
<td>V1.0</td>
<td>Initial Issue</td>
<td>Dr.S.Harris paediatric consultant</td>
</tr>
<tr>
<td>January 15</td>
<td>V2.0</td>
<td>Review of content. Reformat into template for documents library.</td>
<td>Dr.S.Harris paediatric consultant</td>
</tr>
</tbody>
</table>

All or part of this document can be released under the Freedom of Information Act 2000

This document is to be retained for 10 years from the date of expiry.

This document is only valid on the day of printing

Controlled Document
This document has been created following the Royal Cornwall Hospitals NHS Trust Policy on Document Production. It should not be altered in any way without the express permission of the author or their Line Manager.
**Appendix 3. Initial Equality Impact Assessment Form**

Name of the strategy / policy / proposal / service function to be assessed (hereafter referred to as *policy*) *(Provide brief description)*: clinical guideline for the management of preseptal and orbital cellulitis in Children.

<table>
<thead>
<tr>
<th>Directorate and service area: Child Health</th>
<th>Is this a new or existing Policy? new</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of individual completing assessment: T. Fergus</td>
<td>Telephone: 01872252800</td>
</tr>
</tbody>
</table>

1. **Policy Aim***
   - Who is the strategy / policy / proposal / service function aimed at?
   - Clear guidance on the management of preseptal and orbital cellulitis

2. **Policy Objectives***
   - Clear guidance on the management of preseptal and orbital cellulitis

3. **Policy – intended Outcomes***
   - Evidenced based and standardised practice

4. **How will you measure the outcome?**
   - Audit and review

5. **Who is intended to benefit from the policy?**
   - Children and families

6a) **Is consultation required with the workforce, equality groups, local interest groups etc. around this policy?**
   - no

   b) **If yes, have these *groups been consulted?**

   C). **Please list any groups who have been consulted about this procedure.**

7. **The Impact**
   Please complete the following table.

<table>
<thead>
<tr>
<th>Equality Strands:</th>
<th>Yes</th>
<th>No</th>
<th>Rationale for Assessment / Existing Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Clinical Guideline for the management of Preseptal and Orbital Cellulitis in Children.

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Sex (male, female, transgender / gender reassignment)  

Race / Ethnic communities / groups  

Disability - learning, physical disability, sensory impairment and mental health problems  

Religion / other beliefs  

Marriage and civil partnership  

Pregnancy and maternity  

Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian  

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:  
- You have ticked “Yes” in any column above and  
- No consultation or evidence of there being consultation - this excludes any policies which have been identified as not requiring consultation. or  
- Major service redesign or development  

8. Please indicate if a full equality analysis is recommended. Yes  No  

9. If you are not recommending a Full Impact assessment please explain why. No areas indicated  

Signature of policy developer / lead manager / director t.fergus  

Date of completion and submission March 14  

Names and signatures of members carrying out the Screening Assessment 1. 2.  

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead, c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD.  

A summary of the results will be published on the Trust’s web site. Signed ___T.fergus___________  

Date ___January 15____________