1. Aim/Purpose of this Guideline

1.1. This guideline is designed to support clinical staff, both medical and nursing, involved in management of infants with eye infection in the neonatal period.

### Diagram:

- **Identify babies with conjunctivitis**
  - Charcoal Eyes swab
    - **If mild – clean with saline swabs**
    - **If severe & < 24 hours old consider gonococcal conjunctivitis**
      - **If after 5 days and before 12 weeks consider chlamydial eye swab in addition**
    - **If culture positive or discharge persists > 48 hours**
      - **Urgent gram stain and treat with Penicillin or a cephalosporin**
      - **Chlamydia identified**
      - **Systemic treatment with erythromycin**
      - **Refer mother to GUM.**
    - **Topical treatment with chloramphenicol, neomycin or gentamicin drops. Treat both eyes**

2. The Guidance

2.1 Background:

In developed countries Chlamydia Trachomatis is the most common cause of ophthalmia neonatorum. Infants are infected at the time of passage through the birth canal, with vertical transmission rates between 20-66%. 50% - 85% of colonised infants develop conjunctivitis, 11-26% develop pneumonia.
A UK study shows that 25% of infants born to infected mothers are infected, with only 14% being symptomatic, with 25% of the symptomatic group developing pneumonia. Although screening programmes for adults may target younger women, this guideline applies to all infants within 1 month of delivery with "sticky eyes".

2.2 Clinical
Any infant with sticky eyes should be brought to the attention of the paediatric doctors (inpatients) or the General Practitioner (in the community). Infants with mild conjunctivitis need only regular cleaning with sterile saline swabs 4-6 hours for 2-3 days. If cultures are positive or discharge persists for more than 48 hours treat with chloramphenicol, neomycin or gentamicin eye drops.

2.3 Diagnosis
A routine charcoal swab should be sent for culture and sensitivity. A chlamydial eye swab should be used to scrape the conjunctiva of both eyes. Use a PCR swab sample with PCR medium (yellow topped). Do not wet the swab before using. Gently sweep the swab along the upper tarsus from inner to outer canthus. Screening asymptomatic infants is not indicated, but infection can be mild, "at risk" infants should be examined carefully.

2.4 Gonococcal conjunctivitis normally presents within 24 hours with a profuse bilateral purulent discharge. Perform urgent gram stain and culture, if gram negative intracellular diploccoci identified treat immediately with topical and systemic penicillin, or a single dose of ceftriaxone 25-50mg/kg iv or im. Maximum dose 125mg in total, if IV infuse slowly over 60 mins.

2.5 Chlamydial conjunctivitis usually presents between 5-12 days’ postnatal age, rarely described between 6-12 weeks of age. It may start unilaterally, but usually becomes bilateral, with purulent discharge, with increasing oedema of upper and lower lids. Earlier presentations are possible with prolonged rupture of maternal membranes. Rarely the infection produces adhesions between the bulbar and tarsal conjunctiva, with some persisting pannus, but almost never permanent visual impairment. Pneumonia presents between 3 -11 weeks of age, with only 50% having preceding conjunctivitis.

2.6 Treatment
Chloramphenicol eyes drops 0.5%
For Chlamydia- Oral Erythromycin 50mg/kg/day in 4 divided doses for 14 days.

Oral Erythromycin 12.5 mg/kg 6hrly. Childrens BNF and Neonatal Formulary (although not specifically mentioned as treatment for Chlamydial eye infection dose).

There is limited data on the use of other macrolides although one study suggested that azithromycin 20 mg/kg/day orally, 1 dose daily for 3 days, might be effective. Topical treatment does not provide additional benefit.

The mother should be referred to GU services for testing and treatment. For other infections (common causes include Staph. Aureus, H. Influenzae, Strep Pneumoniae, Strep Viridans)– Chloramphenicol eye drops should be administered to both eyes, at a minimum of 4 times a day, for 2 days after clinical resolution.
Gonococcal infection is rare in the UK, cases should be discussed with the paediatric team and GU medicine. Ocular prophylaxis of the infant with a variety of agents is ineffective for Chlamydia.

Antenatally treated maternal Chlamydial infection significantly reduces the risk of neonatal infection. Caesarean section lowers risk to infants – but this is not an indication for section.

1. Monitoring compliance and effectiveness
This part must provide information on the processes and methodology for monitoring compliance with, and effectiveness of, the policy using the table below.

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Key Changes to practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Dr. Paul Munyard</td>
</tr>
<tr>
<td>Tool</td>
<td>Audit</td>
</tr>
<tr>
<td>Frequency</td>
<td>As dictated by audit findings</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>Child Health Directorate Audit and Consultant led Neonatal clinical Guidelines Group</td>
</tr>
<tr>
<td>Acting on recommendations and Lead(s)</td>
<td>Dr. Paul Munyard. Consultant Paediatrician and Neonatologist.</td>
</tr>
<tr>
<td>Change in practice and lessons to be shared</td>
<td>Required changes to practice will be identified and actioned within 3 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</td>
</tr>
</tbody>
</table>

2. Equality and Diversity
2.1. 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.

2.2. Equality Impact Assessment
The Initial Equality Impact Assessment Screening Form is at Appendix 2.
# Appendix 1. Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Eye infections, particularly Chlamydial - Neonatal Clinical Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>28/04/2016</td>
</tr>
<tr>
<td>Date Valid From:</td>
<td>28/04/2016</td>
</tr>
<tr>
<td>Date Valid To:</td>
<td>28/04/2019</td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>Dr Paul Munyard. Consultant Paediatrician and Neonatologist</td>
</tr>
<tr>
<td>Contact details:</td>
<td>(01872) 252667</td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>This guideline outlines the clinical management of infants presenting with eye infections within the neonatal period.</td>
</tr>
<tr>
<td>Suggested Keywords:</td>
<td>Neonatal. Infant. Child. Eye infections. Chlamydial. Chlamydia</td>
</tr>
<tr>
<td>Target Audience</td>
<td>RCHT</td>
</tr>
<tr>
<td>Executive Director responsible for Policy:</td>
<td>Executive Director</td>
</tr>
<tr>
<td>Date revised:</td>
<td>28/04/2016</td>
</tr>
<tr>
<td>This document replaces (exact title of previous version):</td>
<td>Guidelines on Neonatal Eye Infection, particularly Chlamydial</td>
</tr>
<tr>
<td>Approval route (names of committees)/consultation:</td>
<td>Consultant approval. Child Health Directorate Audit. Neonatal Clinical Guidelines Group</td>
</tr>
<tr>
<td>Divisional Manager confirming approval processes</td>
<td>Tim Mumford</td>
</tr>
<tr>
<td>Name and Post Title of additional signatories</td>
<td>Not Required</td>
</tr>
<tr>
<td>Signature of Executive Director giving approval</td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td>Publication Location (refer to Policy on Policies – Approvals and Ratification):</td>
<td>Internet &amp; Intranet</td>
</tr>
</tbody>
</table>
Eye infections, particularly chlamydial – Neonatal Clinical Guideline

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>2006</td>
<td>V1.0</td>
<td>Initial issue.</td>
<td>Dr Paul Munyard. Consultant Paediatrician and Neonatologist</td>
</tr>
<tr>
<td>May 2016</td>
<td>V2.1</td>
<td>Amended to conform to current practice. Consultant approved. Reformatted.</td>
<td>Author: Dr Paul Munyard Consultant Paediatrician and Neonatologist. Formatter: Kim Smith. Staff Nurse.</td>
</tr>
</tbody>
</table>

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

This document is only valid on the day of printing

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## Appendix 2. Initial Equality Impact Assessment Form

| Name of the strategy / policy / proposal / service function to be assessed (hereafter referred to as policy) (Provide brief description): | Eye infections, particularly Chlamydial – Neonatal Clinical Guideline |
| Directorate and service area: Child and Women’s Health, Neonatal | Is this a new or existing Policy? Existing |
| Name of individual completing assessment: Dr. Paul Munyard. | Telephone: (01872) 252667 |
| 1. Policy Aim* | This guideline is aimed at clinical staff responsible for the management of infants presenting with eye infection, particularly chlamydial, within the neonatal period. |
| Who is the strategy / policy / proposal / service function aimed at? | |
| 2. Policy Objectives* | As above |
| 3. Policy – intended Outcomes* | Audit |
| 4. *How will you measure the outcome? | Audit |
| 5. Who is intended to benefit from the policy? | Patients. Medical and nursing staff. |
| 6a) Is consultation required with the workforce, equality groups, local interest groups etc. around this policy? | No. Consultant approved. |
| b) If yes, have these *groups been consulted? | N/A |
| C). Please list any groups who have been consulted about this procedure. | N/A |

### 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></td>
<td>x</td>
</tr>
<tr>
<td>Category</td>
<td>Yes/No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (male, female, transgender / gender reassignment)</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Race / Ethnic communities /groups</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability - learning disability, physical disability, sensory impairment and mental health problems</td>
<td>X</td>
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<tr>
<td>Religion / other beliefs</td>
<td>X</td>
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<tr>
<td>Marriage and civil partnership</td>
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<td></td>
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</tr>
<tr>
<td>Pregnancy and maternity</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. **No**

9. If you are not recommending a Full Impact assessment please explain why.

No area indicated

<table>
<thead>
<tr>
<th>Signature of policy developer / lead manager / director</th>
<th>Date of completion and submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Paul Munyard</td>
<td>28/04/2016</td>
</tr>
</tbody>
</table>

| 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 __________  

Date 28/04/2016