<table>
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<tr>
<th>Title of Guideline (must include the word “Guideline” (not protocol, policy, procedure etc))</th>
<th>Eye Care Guidelines for Adult Critical Care</th>
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</table>
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| Division & Speciality | Clinical Support Division, Adult Critical Care |
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| Explicit definition of patient group to which it applies (e.g. inclusion and exclusion criteria, diagnosis) | Critically ill adult patients |
| Version | Two |
| If this version supersedes another clinical guideline please be explicit about which guideline it replaces including version number. | Eye care guideline adult critical care version 1 |
| Statement of the evidence base of the guideline – has the guideline been peer reviewed by colleagues? Evidence base: (1-6) | 6 |
| 1 | NICE Guidance, Royal College Guideline, SIGN (please state which source). |
| 2a | meta analysis of randomised controlled trials |
| 2b | at least one randomised controlled trial |
| 3a | at least one well-designed controlled study without randomisation |
| 3b | at least one other type of well-designed quasiexperimental study |
| 4 | well-designed non-experimental descriptive studies (ie comparative / correlation and case studies) |
| 5 | expert committee reports or opinions and / or clinical experiences of respected authorities |
| 6 | recommended best practise based on the clinical experience of the guideline developer |
| Consultation Process | Critical Care Governance Group |
| Ratified by: | Critical Care Governance Group |
| Date: | |
| Target audience | Medical and Nursing staff in adult critical care |
| Review Date: (to be applied by the Integrated Governance Team)  
A review date of 5 years will be applied by the Trust. Divisions can choose to apply a shorter review date, however this must be managed through Divisional Governance processes. | August 2019 |
General Eye Care Guidelines (refer also to NUH Trust Nursing practice guidelines: eye care package)

INTRODUCTION

Eye care is recognised as a basic nursing procedure essential for all critically ill patients to prevent complications such as eye infections or injury. The healthy eye is protected from dehydration and infection by the production of tears and blinking (Woodrow 2011). Patients in critical care are at increased risk of complications as their protective mechanisms are compromised (Rosenberg and Eisen 2008).

Unconscious, sedated, paralysed and patients with low levels of consciousness are high risk groups as a low GCS impacts on the blinking reflex and lagophthalmus. Metabolic derangement, immunosuppression, Mechanical Ventilation, medications, open suction technique and systemic disease also impair ocular defences (Kam et al 2011).

Eye complications can range from mild infections to serious corneal injury and ulceration resulting in permanent damage such as vision loss, corneal rupture or scarring of the cornea. (Mela et al 2010, Source et al 2009)

Protocols have been developed to prevent ocular complications but there is not a widely accepted standard of care. Evidence suggests that eye care is a neglected area of patient care in critical illness as health care professionals are mainly concerned with stabilisation of vital body systems thus leading to ophthalmological problems going unrecognised (Grixti et al 2012)

Azfar et al (2013) found implementation of eye care guidelines reduces eye surface disease and to ensure effectiveness and compliance within the guideline, education of the MDT is vital.

Inclusion Criteria:

This Guideline is to be used for all patients admitted onto Adult Critical Care within Nottingham, University Hospitals.

Risk Factors

Risk factors for the Critically Ill Adult:

- Exposure and drying of the ocular surface
- Inadequate blinking and drying of the ocular surface
- Infected respiratory tract secretions
- Fluid mal-distribution
• High flow oxygen and nebulisers
• Increased ocular pressure
• Positive pressure ventilation
• Nursing the patient in the prone position
• Sedation/paralysing agents impair normal/protective mechanisms and eye closure
• Decreased resistance to infection.

Lid Closure

Eye lids mechanically protect the eyes from dehydration and physical injury. Tear production, from the lacrimal gland, helps to provide a defence against infection as tear film contains bacterial enzymes and proteins which wash away debris and organisms (Johnson and Rolls 2014).

Under normal physiology closure of the eyelids occurs and this protects the ocular surface. Blink reflex and tear production are present and sclera and cornea appear bright and clear. However critically ill patients have poor eyelid closure and a reduced ability to use their protective blink reflex (Jammal et al 2012).

Conjunctival oedema prevents adequate lid closure leading to drying of the ocular surface, corneal ulceration and increased risk of microbial keratitis. Positive pressure ventilation leads to inadequate lid closure are PPV increases jugular pressure causing fluid to build within the conjunctiva, incidences in ICU range from 9-80% (Grixti et al 2012).

Taping eye lids remains unpopular amongst nursing staff due to the potential risk of damage to the eye lid. Literature supports the use of lubricants (Lacrilube) to assist lid closure as they have been found to be better than passive eye lid closure (Ezra et al 2009) but less effective than polyethylene covers to reduce incidence of exposure keratopathy.

Eye cleaning with saline soaked gauze is still recommended to remove debris, exudate and dried ocular medications (Ezra et al 2009). However the use of normal saline over sterile water remains debateable (Marshall 2008).

The use of artificial tears is recommended for a rapid return to a normal baseline tear evaporation and tear film production. Methylcellulose drops (Celluvisc) are commonly used within critical care and are designed as an artificial tear based on the compound cellulose, they are water soluble, prolong tear film break up time and maintain visual clarity after application (Grixti et al 2012).
Eye care regimes and practice vary throughout Critical care units. Overall common protocol is to assess every 2-6 hours, clean using saline/ sterile water and gauze, assist lid closure using ocular lubricants and maintain tear productions. All measures utilised are aimed to prevent damage to the ocular surface.

**INFECTION**

Patients within critical care are more exposed to pathogenic microorganisms which increase the risk of conjunctivitis and keratitis (Mela et al 2010). Early detection of infection is vital; lid swelling, conjunctival swelling, chemosis, discharge, or crusting of the eyelids may be early signs of infection. The presence of corneal haze and infiltrates commonly indicate the onset of keratitis (Suresh, Mercieca, Morton and Tullo 2000).

Infected respiratory tract secretions are a known source of ocular contamination during suction procedures (McHugh et al 2008). If patients require open suctioning of the respiratory tract this should be performed to the side of the patient rather than over the top of the head. Care should be taken when disconnecting patients from the ventilator and T- pieces to ensure spray from the tubing does not go over the patient’s face. At all times the eyes must be adequately covered and shielded.
The method of treatment in Nottingham University Hospitals will be based upon the patients' lid position.

A Documented assessment of the eye must be performed by nursing staff every 12 hours.

Clinical judgement and the patient’s condition will determine more frequent assessments.

If there is suspected or known foreign bodies in the eye (s) inform the medical team immediately and refer to ophthalmology.

Do not attempt removal until seen by ophthalmology, await plan of care following review.

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### PATIENT ASSESSMENT

#### DETERMINATION OF LID CLOSURE

**GRADE 1**
- Lids apposed, fully closed
- Assess 6 hourly

**GRADE 2**
- White of the eye visible
- Assess 6 hourly

**GRADE 3**
- Cornea Visible
- Assess 2 hourly

**ACTION**
- Clean as per Trust guideline. Apply Celluvisc eye drops to both eyes as per prescription.
- Clean as per Trust guideline. Apply Celluvisc eye drops to both eyes as per prescription.
- Clean as per Trust Guideline. Apply ointment (Lacrilube) to both eyes. Refer to ophthalmologist.
**PATIENT ASSESSMENT**

**GRADE OF LID CLOSURE**

**GRADE P**
- Patient is proned.
- Prior to proning perform an eye assessment, clean eyes, apply lacrilube cover with eye pads and secure with tape.
- Assess 2-4 hourly

**GRADE S**
- Patient is returned to supine position post prone.
- Assess 2 hourly for 8 hours

**GRADE T**
- Fractured orbits/trauma to eye or surrounding area.
- Assess eye (s) 2 hourly or as directed by ophthalmologist

- Clean eyes as per trust guideline.
- Apply Lacrilube ointment to accessible eye as per prescription.
- Cover eye with an eye pad and secure with micro pore tape.

- On resuming the supine position, assess the patient 2 hourly Grade lid position and assess for corneal chemosis.
- Clean as per Trust guideline
- Administer treatment as per assessment findings
- Refer to Medical team if signs of infection present

- Refer to Ophthalmologist
- Clean eyes as per Trust Guideline - or directed by ophthalmologist.
- Administer prescribed treatment.

- If the eye (s) cannot be opened they must not be forced
References


Ledingham. C (2014) Maintaining the vision in the intensive care unit. Http://corescholar.libaries.wright.edu/nursing_dnp/1


**AUDIT POINTS**
1. Has the patient had a documented eye assessment performed at least 12 hourly?
2. How often has the bedside Nurse performed an eye assessment on the patient? - is this appropriate for the patient?
3. Is the Nurse cleaning the eye correctly?
4. Has the patient been prescribed artificial tears?
5. Is the patient receiving lacrilube ointment?
6. Is the patient receiving geliperm eye treatment?
7. Does the patient have an eye injury? - have they been seen by the ophthalmologist? - are they receiving prescribed treatment?
8. Does the patient have an eye infection? - have they been seen by an ophthalmologist? - are they receiving prescribed treatment?
9. Has the Nurse received training on care of the eye in the critically ill patient?
10. Is the patient proned? - is the patient receiving the correct eye care?