

TITLE

MANAGEMENT OF CHEMICAL EXPOSURE TO THE EYE(S)

SCOPE

Provincial: Emergency Departments and Urgent Care Centres

DOCUMENT

HCS-09-11

APPROVAL AUTHORITY

Vice President, Provincial Clinical Excellence

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Not applicable

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NOTE: The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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OBJECTIVES

- This protocol is intended for all **patients** presenting to an Emergency Department (ED) or Urgent Care Centre (UCC) with suspected chemical exposure isolated to the eye(s).
- To assist **health care professionals** when implementing specific diagnostics, therapeutics, and interventions for patients, prior to the initial Physician or Nurse Practitioner (NP) assessment.

APPLICABILITY

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, students, volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary).

ELEMENTS**1. Points of Emphasis**

- 1.1 The health care professional shall immediately notify the Physician or NP of any patient that is unstable or is in obvious distress.
- 1.2 Chemical exposure to the eye is considered as a Canadian Triage and Acuity Scale (CTAS) Level 2 and requires urgent intervention.
- 1.3 This protocol may be implemented by a health care professionals when:
 - a) there is a delay in Physician or NP initial assessment; and

- b) the patient is in an appropriate location to manage ongoing assessment and reassessment.
- 1.4 The normal pH of the eye(s) is 7.0 to 7.3. The target level of pH post chemical exposure to the eye(s) is 7.5 - 8.0.
- 1.5 The health care professional should consider:
- a) contacting Poison and Drug Information Service (PADIS) for consultation and treatment recommendations; and/or
 - b) consultation with RAAPID for early transfer, if required.
- 1.6 If this protocol has been implemented, and the patient subsequently leaves prior to Physician or NP assessment, follow local process, including documentation requirements and patient follow-up of abnormal results.
- 2. Inclusion Criteria**
- 2.1 This protocol applies to a patient who presents with suspected isolated chemical exposure to the eye(s).
- 3. Exclusion Criteria**
- 3.1 This protocol does not apply if the patient presents with:
- a) possible presence of a foreign body;
 - b) associated injury (for example facial burns); or
 - c) suspected or confirmed penetrating globe injury.
- 4. Assessment and Treatment**
- 4.1 The health care professional shall:
- a) Complete a nursing assessment including a Provocation, Quality, Radiation, Severity, and Time (PQRST) assessment of the pain and associated symptoms. Obtain a full set of vital signs including blood pressure, temperature, pulse, respiratory rate, and oxygen saturation. (Refer to the AHS *Assessment and Reassessment of Patients* Guideline [ESCN]).
 - b) Use Personal Protective Equipment (PPE) (e.g. gloves, mask, gown and goggles), as per AHS Infection Prevention & Control Guidelines; and
 - c) Remove contact lens if present and instruct patient to irrigate their eyes with water until an **order** for topical ophthalmic anesthetic drops has been obtained.

- 4.2 When possible, the health care professional should:
- a) Use ophthalmic pH indicator paper to determine the pH level of affected eye(s):
 - (i) Notify Physician or NP if the pH is greater than or equal to 8.0 or is less than or equal to 7.0; and
 - (ii) Assess visual acuity. Do not delay initiation of irrigation while attempting visual acuity or to check the patient's eye(s) pH.
- 4.3 The health care professional shall obtain a patient-specific order to:
- a) Place one (1) to two (2) drops of topical ophthalmic anesthetic (e.g., Tetracaine 0.5% ophthalmic solution, Proparacaine 0.5% ophthalmic solution) into the lower fornix of the affected eye(s) if no history of allergy to local anesthetics.
 - (i) Tell the patient to keep the eye(s) closed until the irrigation begins, in order to retain the drug.
- 4.4 Irrigate the affected eye(s) with at least 2000 mL of 0.9% Sodium Chloride or Lactated Ringer's using a scleral lens (e.g., Morgan Lens™), if available, or via syringe or intravenous tubing.

5. Reassessment

- 5.1 The health care professional shall:
- a) Stop the irrigation as ordered by Physician or NP. Wait 10 minutes, then test eye(s) pH. Otherwise the pH of the irrigating solution may impact the results.
 - b) Target pH is 7.5
 - (i) With alkali burns it may not be possible to reach a pH of 7.5
 - c) Within one (1) hour of irrigation of the eye(s), reassess the patient, including complete set of vital signs, in accordance with AHS *Assessment and Reassessment of Patients* Guideline and shall include:
 - (i) visual acuity; and
 - (ii) pain score.

6. Documentation

- 6.1 The health care professional shall document on the patient's **health record**:
- a) implementation of this protocol;

- b) assessments;
- c) reassessments;
- d) interventions;
- e) patient's responses to interventions; and
- f) after-care teaching provided.

DEFINITIONS

Health care professional means an individual who is a member of a regulated health discipline, as defined by the *Health Disciplines Act* or the *Health Professions Act*, and who practices within scope or role.

Health record means the Alberta Health Services legal record of the patient's diagnostic, treatment and care information.

Order means a direction given by a regulated health care professional to carry out specific activity(-ies) as part of the diagnostic and/or therapeutic care and treatment to the benefit of a patient. An Order may be written (including handwritten and or electronic), verbal, by telephone or facsimile.

Patient means an adult or child who receives or has requested health care or services from Alberta Health Services and its health care providers or individuals authorized to act on behalf of Alberta Health Services. This term is inclusive of residents, clients and outpatients.

REFERENCES

- Alberta Health Services Governance Documents:
 - *Assessment and Reassessment of Patients* Guideline (# HCS-181-01)
- Alberta Health Services Resources
 - Infection Prevention & Control Guidelines
- Non-Alberta Health Services Resources
 - Poison and Drug Information Service (PADIS)

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