



Clinical Practice Guidelines: Toxicology and toxinology/Corrosive agents

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Date	January, 2020
Purpose	To ensure a consistent approach to the management of corrosive agent poisoning.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
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Corrosive agents

January, 2020

Corrosive agents cause direct injury to tissue, damaging exposed skin, the eyes or if ingested, the mucosal surfaces of the airway and gastrointestinal tract.

CORROSIVE AGENTS	
Acids:	<ul style="list-style-type: none">• Hydrochloric acid• Sulfuric acid• Nitric acid• Hydrofluoric acid*
Alkali:	<ul style="list-style-type: none">• Sodium hydroxide• Potassium hydroxide• Ammonia• Sodium hypochlorite
Other:	<ul style="list-style-type: none">• Zinc chloride• Glyphosate• Paraquat*• Potassium permanganate• Button batteries

* See additional information

Clinical features



Skin

- Burns

Eye

- Irritation
- Decreased vision
- Tearing
- Redness

Airway

- Hoarse voice
- Stridor
- Dyspnoea

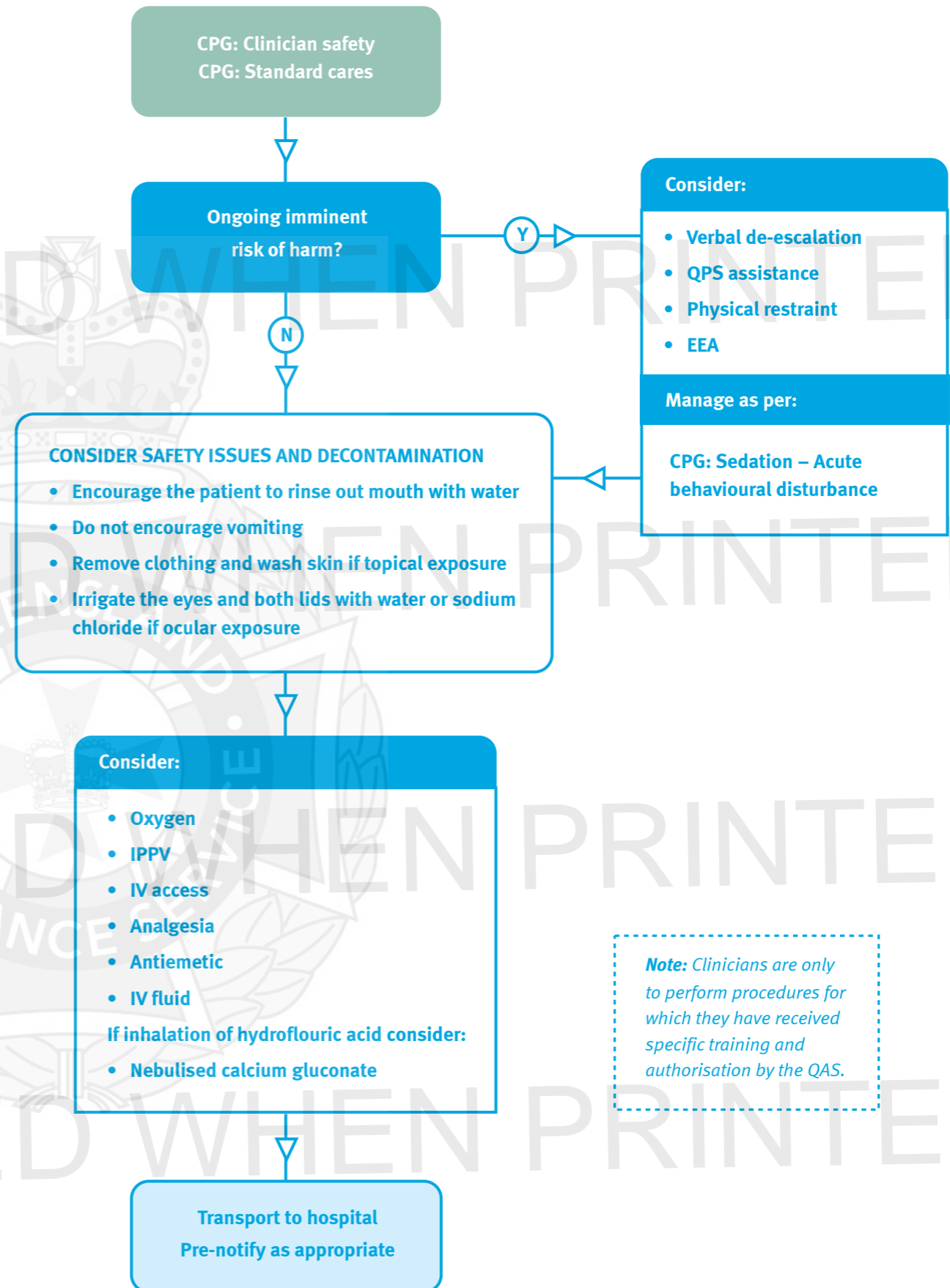
Gastrointestinal

- Oral burns
- Drooling
- Painful swallowing
- Vomiting
- Abdominal pain

Airway involvement can quickly deteriorate and become a life-threatening emergency.

Additional information

- The absence of oral burns does not exclude significant gastrointestinal injury. ^[1]
- Do not place an OGT in the pre-hospital setting if there is potential for gastrointestinal injury.
- **Paraquat** is a caustic herbicide. It is usually lethal in deliberate overdose, even following ingestion of only a mouthful of solution.
 - Early toxicity manifests as corrosive injury to the airway and gastrointestinal system.
 - Over the next 48 hrs systemic toxicity and multi-organ failure is established.
 - If a patient survives this initial period, pulmonary fibrosis develops over the next few days to weeks.
 - Pulmonary injury may be exacerbated by high levels of oxygen. Avoid oxygen unless the patient is hypoxaemic. Target SpO₂ is 88–92%.
 - Dermal exposures of paraquat do not lead to toxicity if skin is intact.
 - Ocular exposures of paraquat can cause local corrosive injury, but not systemic toxicity.
- **Hydrofluoric acid** is used in industrial chemistry, mining, oil refinery, glass finishing, silicon chip manufacturing and in cleaning agents. Exposure is associated with significant morbidity. ^[2]
 - Topical exposures often result in delayed presentation of burns with pain.
 - Excessive fluoride ions bind calcium and magnesium, which can lead to life threatening hypocalcaemia and ventricular arrhythmia.
 - Follow first-aid instructions provided at industrial sites (e.g. application of calcium gluconate gel).
 - Inhalational exposures should receive nebulised calcium gluconate.
 - Transport without delay and pre-notify.



Note: Clinicians are only to perform procedures for which they have received specific training and authorisation by the QAS.