



#### INDICATIONS

• Thermal, chemical, electrical and radiation burns

#### WARNINGS

• Not applicable

# NOTES 1. Other agencies or services may be required to remove the patient from danger before EMS can initiate assessment and treatment. Local technical personnel may be able to provide information for the safe handling of contaminated persons. Manitoba Conservation – Environmental Operations: Dangerous Goods Emergency Response (1-204-944-4888) is available 24 hours every day to provide appropriate information, resources, and personnel. 2. Inhalational injury causing airway burns should be suspected when there has been exposure to heat, smoke, or chemicals, especially in an enclosed space. Symptoms and signs include the following, but may not be appreciable in a patient with an altered level of consciousness (LOC). Burns to the face / nose / mouth Singed nasal hair Soot in nasopharynx or oropharynx, or carbonaceous sputum Hoarse voice or stridor Wheezes, crackles, or decreased breath sounds on chest auscultation Respiratory distress / increased work of breathing Tachypnea / hypoxemia (desaturation) 3. Carbon monoxide (CO) poisoning should be presumed in any patient with smoke inhalation. Generalized symptoms such as headache, dizziness, nausea, or vomiting may be present; but may not be elicited in the patient with decreased LOC. Provide 100% supplemental oxygen if suspected. 4. Hypothermia can rapidly occur from prolonged or large-area irrigation, as well as from exposure, or the administration of ambient temperature IV fluids or oxygen. 5. After correcting for shock, patients with second degree (partial thickness) and third degree (full thickness) burns greater than 20% body surface area (BSA) should intravenous fluid (IVF) administered according to the Parkland Formula (appendix A) with frequent reassessment of ongoing needs. 6. Burns should be covered with clean dry dressings, sheets, or commercial burn dressings. Do not break blisters. 7. Critical areas include the face, eyes, and ears; hands (entire palmar or dorsal surface) and feet (entire plantar or dorsal surface); and perineum or genitalia.

8. Certain burn injuries can be immediately life-threatening and their management quite specialized. These are covered under existing ERS trauma destination protocols and usually warrant direct transport to the Provincial trauma (burn) center.

# LINKS

- A01 Standard Clinical Approach
- B04.1 Trauma Destination for IERHA & SHSS Geographic Zones
- B04.2 Trauma Destination for PMH Geographic Zone
- B04.3 Trauma Destination for NRHA Geographic Zone

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# VERSION CHANGES (refer to X06 for change tracking)

• Addition of advanced work scope indicator

## APPENDIX A: PARKLAND FORMULA FOR ESTIMATING FLUID REQUIREMENTS

# DAILY FLUID REQUIREMENTS = 4 ML X TOTAL BURN SURFACE AREA (%) X BODYWEIGHT (KG)

- This volume is in addition to any losses from hemorrhage or pre-existing hypovolemia.
- The daily requirement begins from the time of injury, not the time of treatment.
- The first half of the volume is given over 8 hours (0.25 ml/hr x TBSA x weight). The second half is given over 16 hours.

NOTE: This is only an initial estimate and can be affected by other factors such as age, comorbidities, presence of airway or pulmonary burns, and concomitant traumatic injuries. Adjustments may be needed based upon the patient's response.

EXAMPLE: A 90 kg patient sustained 35% burns 3 hours prior to EMS arrival. The initial estimate of his daily fluid requirement is 12.5 litres. Half must be given in the first 8 hours (800 ml/hr) and the other half over the next 16 hours (400 ml/hr). However, he is already 3 hours behind, so this volume should be administered in the next 21 hours (900 ml/hr x 7 hr, then 450 ml/hr x 14 hr). However, all these numbers are only an estimate and continuous reevaluation is required.

