INTRODUCTION

The incidence of burns has gone down due to preventative measures such as educational campaigns, improved building codes, safer construction, and the use of smoke detectors. The mortality rate has also decreased through the development of specialized burn centres. The risk of mortality is roughly equivalent to the percent of body surface area (BSA) burned. For example, if a patient has 80% of their body burned, they have an 80% chance of dying from the injury.

Burns can have a serious systemic impact to more parts of the body than the specific site of the burn. When moderate to severe burns occur, the respiratory, gastrointestinal, musculoskeletal, endocrine and immune systems can all be affected. This makes burn management complex and often a lengthy process.

Complications such as acidosis, arrhythmia, fluid loss, infection, renal failure, hypoxia and hypothermia are common in burn patients, contributing to high rates of mortality. It is important for clinicians to quickly start treatment and transport the patient to an appropriate facility for follow-up burn management.

SAFETY

Consider the cause of the burn to determine the appropriate resources and PPE required. The local fire department, power companies, and/or HazMat team may be required to secure the scene prior to entry. The clinician should ensure they do not come into contact with any chemical agent during patient care. Seek out material safety data sheets (MSDS); these should be referenced for information on chemicals involved.

ASSESSMENT

All patients with burns require a trauma assessment, as well as the following:

- Look for possible signs of airway involvement (hoarse voice, hoarse cough, stridor, edema of the lips or oropharynx, burns/blisters or soot around the mouth and/or nose, difficulty swallowing, scorched facial hair or circumferential burns around the neck)
- Determine if there was any possibility of hot air or gas inhalation (these patients may appear uninjured initially but can deteriorate rapidly)
- Expose the entire body surface
- Determine the time of the injury
- Determine the mechanism of injury (flame, flash burn, steam burn, electrical, chemical, radiation, explosion, etc.)
- Determine if the injury occurred in an enclosed space or if any type of explosion or traumatic force was involved
- Look for any signs that the burn may not be accidental, most specifically in children and the elderly (unusual pattern, delayed call to 9-1-1, discrepancy between history and clinical findings, multiple injuries, or unusual anatomical locations)
- Initiate cardiac monitoring, especially for patients burned by electrical sources (**PEP 3 neutral**).

Determining the Depth of Burn

The severity of the burn and subsequent management depends on the burn depth: superficial, partial-thickness or full-thickness. It is important to note that a burn will continue to damage tissue for several hours, therefore a burn which appears superficial on initial assessment may actually be deemed a partial- or full-thickness burn 24 hours later.

Superficial (First Degree) burns destroy the superficial layer of epidermal cells. The area is painful, red, and dry and will blanch with pressure but then will rapidly refill.

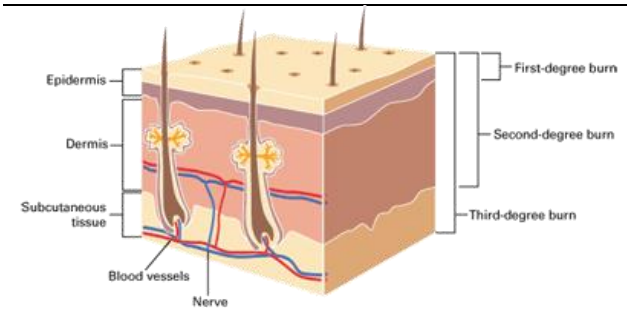
Partial-thickness (Second Degree) burns extend through the epidermis and can cause blisters. Deep partial thickness burns can extend into the basal layer of the dermis. The area may be red and wet or white and dry depending on any vascular injury, and sensation may be decreased.

Full-thickness (Third Degree) burns extend through all layers of skin into the subcutaneous tissue (and in severe cases into muscle or bone). The area may be dry and leathery or waxy. Sensation at the site is often absent.

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

6340.02: BURNS



Determining the Extent and Severity of Burn

Once the depth of burn is determined, the clinician should determine the depth of the burn and the BSA affected. **Total BSA burned is calculated by assessing the amount of second and third degree burns (do not include first degree burns)**. Partial- and full-thickness burns are linked with poorer outcomes and often require in-depth treatment, which is why these are included in the calculation. There are multiple methods to calculate area burned, including the Palmar surface method, the Rule of Nines and the Lund and Browder chart. These calculations are used to determine if the burn is severe enough to require transport to a particular facility, and to determine the amount of fluid required. Overestimating the area burned may lead to fluid overload, whereas underestimating may result in not enough fluid being administered, increasing the likelihood of shock.

Palmar surface

The palm of the patient's hand is approximately 1% of their BSA, so counting the number of palms that would cover the burn is an estimate of the BSA burned. This is only accurate for small burns (less than 15% of total BSA) or very large burns (greater than 85% of total BSA – count the number of palms of unburned skin and subtract from 100%).

Rule of Nines

The adult body is divided into areas of 9% (see Figure 1) which helps to accurately estimate the amount of surface burned. This is the method most commonly used in the pre-hospital setting. There is an adapted chart for the pediatric population (See Figure 2), but as the size and proportions of a pediatric patient change frequently, the Rule of Nines is not as accurate in children.

Lund and Browder chart

This is the most complex and most accurate method of calculating BSA burned (see Figure 3). It compensates for changes in body shape and size therefore is the best method of calculation for burns in the pediatric population. As it is more complex, it is not used as frequently in the pre-hospital setting, where the other two methods can provide rapid approximations of affected area.

MANAGEMENT

In general, there are six steps to burn management in the pre-hospital setting.

1. Assess and manage life-threats

Have a high index of suspicion for c-spine injuries if there was a blast and consider immobilization. Similarly, carefully assess for airway compromise and treat with oxygen and advanced airway management if necessary. Early intubation may be appropriate in patients with airway involvement, as rapidly developing edema could cause the airway to close off entirely. If the clinician chooses to intubate, ensure the ***first attempt is the best attempt.*** An unsuccessful intubation attempt could lead to the airway rapidly worsening.

If there is airway or respiratory involvement, or the patient has been involved in a structure fire, provide oxygen (**PEP 2 supportive**) and aim for SpO_2 of 100%. If possible, humidify the oxygen. Salbutamol can be given for patients with wheezes.

It is important to remember that burns from electricity most often cause internal injury and other wounds so these must be treated. Any patient with an electrical burn may have a spinal injury. Consider spinal immobilization (**PEP white**).

Inhaled Toxins

Patients involved in structure fires are often exposed to inhaled toxins such as carbon monoxide or cyanide gas. Prehospital management includes administering 100% supplemental oxygen. Subsequent in-hospital management may include hyperbaric oxygen, as well as antidotes such as sodium thiosulfate or hydroxocobalamin.

2. Stop the burning

Remove the patient from the source as quickly as possible. Remove all burnt clothing (unless it is stuck to the patient) and jewelry, which may become constrictive. In the case of a chemical burn, be sure to determine the type or name of the chemical. If the

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

chemical is a powder, ensure it is brushed away from the area prior to cooling with water.

3. Cool the burn

For small burns, cool the burn with water (not ice cold water) for a minimum of 10 minutes. A cold wet cloth or towel can also be used. Though it is important to cool the burn, the clinician should be sure to keep the patient warm to reduce the risk of hypothermia, which is common in burn patients, especially in the pediatric population.

All large burns (more than 15% partial-thickness or 5% full-thickness) should not be cooled as it increases the risk of hypothermia.

Be cautious with chemical burns, as adding water can cause further burning with some chemicals. Refer to MSDS sheets for information regarding the possibility for a reaction with water. Chemical burns often need more extended periods of irrigation (**PEP 3 supportive**). If the patient is stable, irrigation of the area takes priority over early transport to the hospital.

4. Cover the burn

Cover the burn with dry, sterile dressings (**PEP white**) to keep the area as clean as possible. If the burn area is small it can be dressed after being cooled. After it is dressed, a wet cloth can be placed over the dressing to continue the cooling. Large burns should be covered with sterile burn sheets. If the burn is on a hand or foot, separate the fingers or toes with non-adherent dressings to prevent the digits from adhering.

If there are other wounds, such as entry and exit wounds with electrical burns, ensure these are dressed as well.

5. Provide fluids

Obtain IV access and initiate fluid resuscitation (**PEP 3 supportive** for thermal burns; **PEP white** for electrical burns). As IV fluids are often cooler than body temperature, ensure the patient is kept warm. In the case of severe burns, if an IV is unobtainable (due to location of burns or 2 unsuccessful IV attempts), consider obtaining an IO.

If a patient does not have adequate perfusion (i.e. patient is presenting with shock), provide fluids as per Shock guidelines.

Parkland Burn Formula

Follow the Parkland Burn Formula to determine the amount of intravenous fluid (Ringers Lactate is preferred) to administer to patients with burns greater than 15% total BSA (over 10% in children) over the first 24 hours from the time the burn occurred:

- 4 mL/kg x % BSA burned x weight (in kg)
- Divide this amount in half
- The first half is given over the first 8 hours
    - Calculate the rate of administration
- The second half is given over the next 16 hours

Remember, only partial- and full-thickness burns are included in the % BSA burned.

For example, if a 75 kg patient has partial-thickness burns of 45% of their body, the calculation would be:

$$4 \text{ mL/kg} \times 45 \times 75 \text{ kg} = 13\,500 \text{ mL}$$

Divide this in half (as half goes in the first 8 hours):
13 500 mL/2 = 6 750 mL

To find the drip rate:

$$\frac{6\,750 \text{ mL} \times 10 \text{ gtt/mL}}{480 \text{ minutes}} = 141 \text{ gtt/min}$$

The fluid can be divided into two IVs, if necessary. Once in hospital, fluid administration may be titrated to maintain adequate urine output (0.5-1 mL/kg/hr for adults).

6. Provide analgesia

Cooling and covering the burned area is one step in analgesia. Opioid analgesics are also appropriate (**PEP 1 supportive** for thermal and electrical burns; **PEP 2 supportive** for chemical burns). Remember routes other than IV if needed: IM, IN and IO. Analgesia may be best administered early in the course of burn management.

7. Transport

To keep on-scene time as short as possible, most interventions should be done on route to the hospital.

Patients with burns that meet the following criteria should be transported to a receiving facility that can provide specialized burn management:

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

- Burns to the face, hands, perineum, flexible areas such as the neck or axilla, or any circumferential burns (patients with circumferential burns involving the chest may require emergent escharotomy at the ED to aid with ventilation)
- Patients with a total BSA burn of greater than 10% (anything greater than 5% for a child)
- Patients with significant coexisting conditions such as immunosuppression, renal failure, pregnancy or associated injuries such as crush injuries or fractures.
- Burns caused by inhalation, radiation, high-tension electrical injury, chemicals or high pressure steam

Adult burns involving the airway or greater than 15% BSA are considered to be major trauma and should be transported to a District or Tertiary Trauma Centre if possible. Air Medical Transport (AMT) should be considered if ground transport time is expected to exceed 30 minutes to these facilities.

In some cases, it may be appropriate for the patient to be brought to the nearest hospital then transferred by AMT to a more appropriate facility. Contact the AMT physician through the Communications Centre to discuss best options.

Early notification to the receiving facility is important to allow staff time to prepare for the incoming burn patient. Be sure to notify staff if there are chemicals involved.

Burns in the Pediatric Population

Though the Rule of Nines is most often used to calculate BSA burned, this is often inaccurate in children. The Lund and Browder chart is more precise. The clinician should not delay scene time to precisely calculate the burn area, however, a more accurate number can be obtained while en route to the receiving facility, if time allows.

When calculating fluid resuscitation for pediatric patients, the same Parkland Burn Formula is used, however pediatrics often require further fluid maintenance in addition to the calculated amount. It is recommended that this fluid maintenance dose wait until arrival at the hospital, at which time the extra fluid can be calculated in and run through an infusion pump.

Remember that pediatric patients are at increased risk for hypothermia, so ensure they are kept warm. Provide analgesia (**PEP 1 supportive**) as you would for any pediatric traumatic pain.

TRANSFER OF CARE

Upon transferring care to the receiving facility, provide details regarding the mechanism of burn, depth and severity of burn(s), amount of fluid and/or analgesia the patient has received, if there are any associated injuries and if there were any chemicals or hazardous materials involved.

CHARTING

It is important to chart the mechanism of injury (i.e. what caused the burn), any associated injuries, and treatments provided. Indicate what tool was used to estimate BSA burned.

Key Points – Burn Management

Treat these patients as trauma patients

Carefully assess for airway involvement

Provide 100% oxygen for patients involved in structure fires

Stop the burning and start cooling while keeping the patient warm

Initiate fluid resuscitation

Continuously reassess pain

KNOWLEDGE GAPS

Historically, sodium bicarbonate was administered for electrical burns to prevent rhabdomyolysis however the evidence is inconclusive as to its benefit in these patients. Sodium bicarbonate or normal saline infusion may be subsequently administered during in-hospital care if the patient develops rhabdomyolysis.

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

EDUCATION

It is important for clinicians to understand the pathophysiology of burns, so they can anticipate the course of the injury.

QUALITY IMPROVEMENT

Important elements in burn management are: [1] cooling the burn, [2] applying clean dry dressings, [3] providing analgesia, and [4] transporting to the appropriate destination

REFERENCES

Allison K, & Porter K. Consensus on the prehospital approach to burns patient management. Emerg Med J. 2004; 21: 112-114

American Burn Association. Practice Guidelines for Burn Care. J Burn Care Rehab. 2001 Apr; i-69s.

Enoch S, Roshan A, & Shah M. Emergency and early management of burns and scalds. BMJ. 2009 Apr; 338: 937-941

Hettiaratchy S, & Papini R. Initial management of a major burn: II – assessment and resuscitation. BMJ. 2004 Jul; 329: 101-103

Ma OJ, Cline DM, Tintinalli JE, Kelen GD, & Stapczynski JS. (Eds.). (2004). *Emergency Medicine Manual* (6th ed.). New York, NY: McGraw-Hill.

Wachtel TL, Berry CC, et al. The inter-rater reliability of estimating the size of burns from various burn area chart drawings. Burns. 2000; 26: 156-170

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

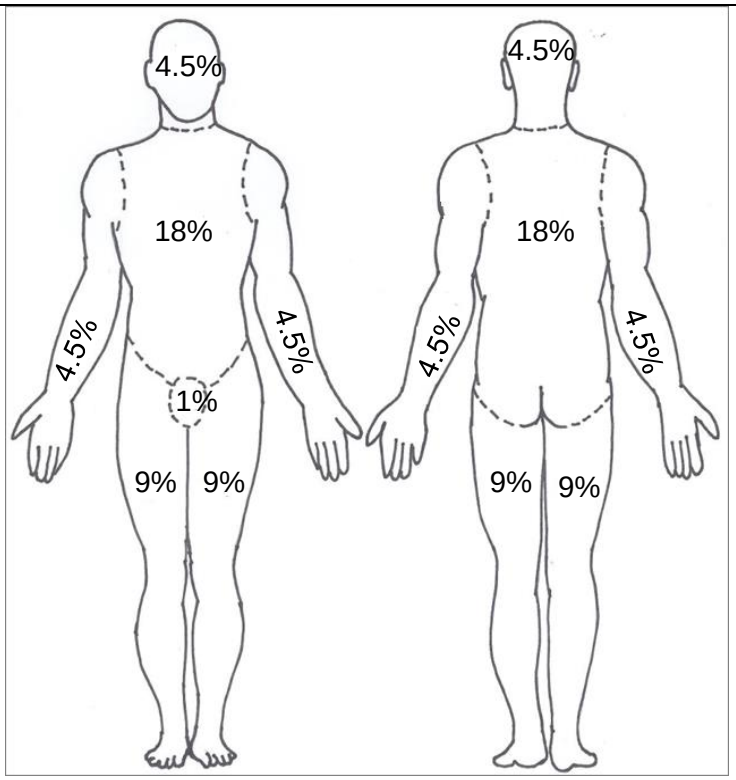


Figure 1: Rule of Nines (Adult)

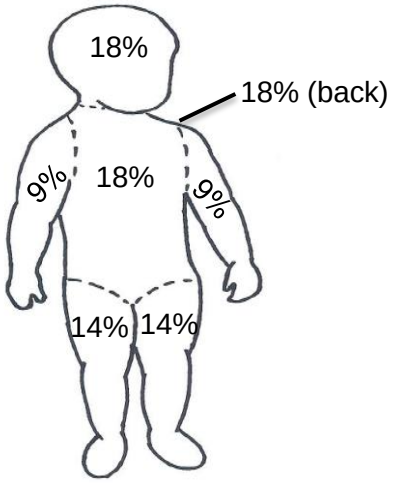
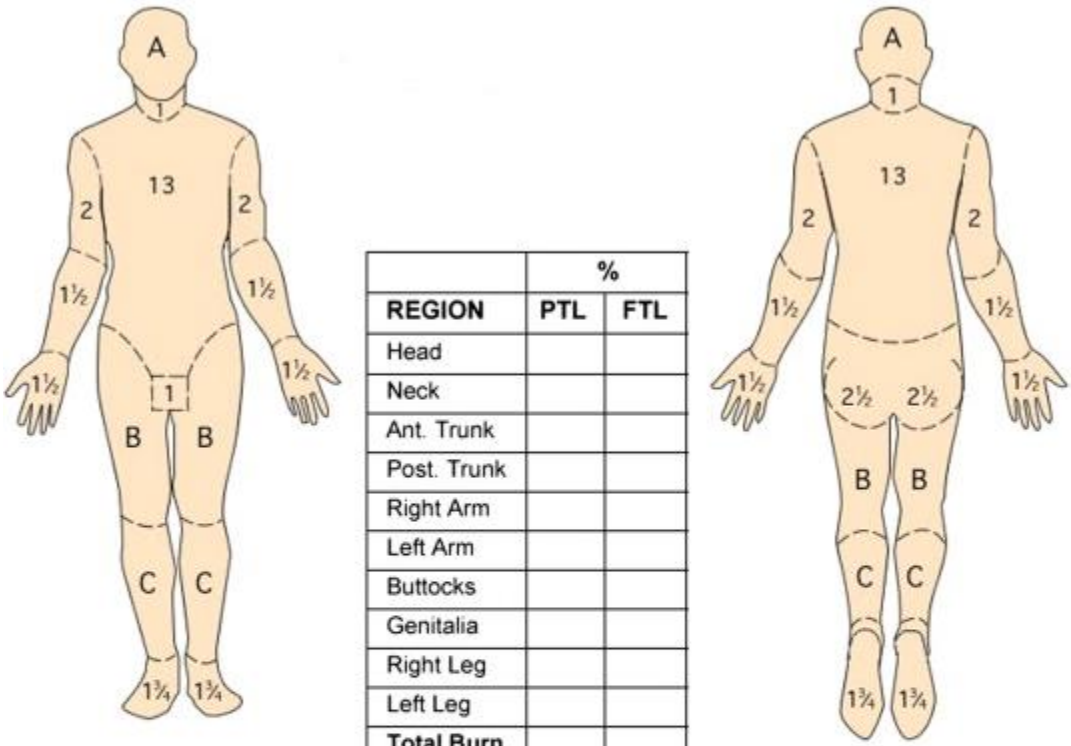


Figure 2: Rule of Nines (Child)

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***



REGION	% PTL	% FTL
Head		
Neck		
Ant. Trunk		
Post. Trunk		
Right Arm		
Left Arm		
Buttocks		
Genitalia		
Right Leg		
Left Leg		
Total Burn		

AREA	Age 0	1	5	10	15	Adult
A = ½ of head	9½	8½	6½	5½	4½	3½
B = ½ of one thigh	2¾	3¼	4	4½	4½	4¼
C = ½ of one lower leg	2½	2½	2¾	3	3¼	3½

Figure 3: Lund and Browder Chart

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

PEP 3x3 TABLES for Burns

Throughout the EHS Guidelines, you will see notations after clinical interventions (e.g.: **PEP 2 neutral**). PEP stands for: the Canadian **P**rehospital **E**vidence-based **P**rotocols Project.

The number indicates the Strength of cumulative evidence for the intervention:
1 = strong evidence exists, usually from randomized controlled trials;
2 = fair evidence exists, usually from non-randomized studies with a comparison group; and
3 = weak evidence exists, usually from studies without a comparison group, or from simulation or animal studies.

The coloured word indicates the direction of the evidence for the intervention:
Green = the evidence is supportive for the use of the intervention;
Yellow = the evidence is neutral;
Red = the evidence opposes use of the intervention;
White = there is no evidence available for the intervention, or located evidence is currently under review.

PEP Recommendations for Burn Management, as of 2014/02/24. PEP is continuously updated. See: http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm for latest recommendations, and for individual appraised articles.

Burns (fire/flame)

Recommendation		RECOMMENDATION FOR INTERVENTION			
		SUPPORTIVE (Green)	NEUTRAL (Yellow)	AGAINST (Red)	NOT YET GRADED (White)
STRENGTH OF RECOMMENDATION FOR INTERVENTION	1 (strong evidence exists)	• Narcotic			• Dry Dressing
	2 (fair evidence exists)				
	3 (weak evidence exists)	• Crystalloid Fluid • Nitrous Oxide			

Chemical Splash/Burn

Recommendation		RECOMMENDATION FOR INTERVENTION			
		SUPPORTIVE (Green)	NEUTRAL (Yellow)	AGAINST (Red)	NOT YET GRADED (White)
STRENGTH OF RECOMMENDATION FOR INTERVENTION	1 (strong evidence exists)				• Dry Dressing
	2 (fair evidence exists)	• Narcotic			
	3 (weak evidence exists)	• Irrigation Skin			

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

6340.02: BURNS

Electrocution/Electrical Burns

Recommendation		RECOMMENDATION FOR INTERVENTION			
		SUPPORTIVE (Green)	NEUTRAL (Yellow)	AGAINST (Red)	NOT YET GRADED (White)
STRENGTH OF RECOMMENDATION FOR INTERVENTION	1 (strong evidence exists)	• Analgesia (iv narcotic)			• Crystalloid Fluid • C-Spine immobilization • Dry Dressing • NaHCO3
	2 (fair evidence exists)				
	3 (weak evidence exists)		• 12-Lead ECG • Cardiac Monitor		

Smoke Inhalation

Recommendation		RECOMMENDATION FOR INTERVENTION			
		SUPPORTIVE (Green)	NEUTRAL (Yellow)	AGAINST (Red)	NOT YET GRADED (White)
STRENGTH OF RECOMMENDATION FOR INTERVENTION	1 (strong evidence exists)				• Direct Transport To Hyperbaric Facility • Oxymetry Monitoring
	2 (fair evidence exists)	• Oxygen			
	3 (weak evidence exists)	• Mechanical Ventilation (CCT)			

Pediatric Burns (fire/flame)

Recommendation		RECOMMENDATION FOR INTERVENTION			
		SUPPORTIVE (Green)	NEUTRAL (Yellow)	AGAINST (Red)	NOT YET GRADED (White)
STRENGTH OF RECOMMENDATION FOR INTERVENTION	1 (strong evidence exists)	• Analgesia (narcotic)			• Crystalloid Fluid • Dry Dressing • IV access • Oxygen
	2 (fair evidence exists)				
	3 (weak evidence exists)	• Nitrous Oxide			

Pediatric Electrocution

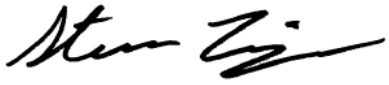
Recommendation		RECOMMENDATION FOR INTERVENTION			
		SUPPORTIVE (Green)	NEUTRAL (Yellow)	AGAINST (Red)	NOT YET GRADED (White)
STRENGTH OF RECOMMENDATION FOR INTERVENTION	1 (strong evidence exists)				
	2 (fair evidence exists)				
	3 (weak evidence exists)		• Cardiac Monitor		

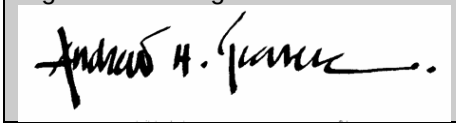
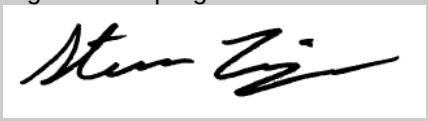
EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***

6340.02: BURNS

Program Document Number Management System

PDN: 6340.02	**Title:** Burns	**Type:** CPG
Effective Date: March 20, 2014		**Revision Date:**
Approval Date: February 24 2014		**Revision Date:**
Review Date: February 25 2014		**Revision Date:**
Replaces: 6215.02, 6216.02, 6217.03, 6318.01, 6219.01, 6255.02		**Revision Date:**
Signature of Program Director 		Signature of Program Document Coordinator 

PDN: 6340.99.01.01	**Title:** Burns	**Type:** Field Guide
Effective Date: March 20 2014		Revision Date:
Approval Date: February 24, 2014		Revision Date:
Review Date: February 25, 2014		Revision Date:
Replaces: 6215.02, 6216.02, 6217.03, 6318.01, 6219.01, 6255.02		Revision Date:
Signature of Program Director 		Signature of program Document Coordinator 

EHS has made every effort to ensure that the information, tables, drawings and diagrams contained in the Clinical Practice Guidelines issued Q4 DHW2014 fiscal is accurate at the time of publication. However, the EHS guidance is advisory and has been developed to assist healthcare professionals, together with patients, to make decisions about the management of the patient's health, including treatments. It is intended to support the decision making process and is not a substitute for sound clinical judgment. Guidelines cannot always contain all the information necessary for determining appropriate care and cannot address all individual situations; therefore individuals using these guidelines must ensure they have the appropriate knowledge and skills to enable appropriate interpretation. © Emergency Health Services, Nova Scotia

*PEP is the **Canadian Prehospital Evidence-based Protocols Project.** Every clinical intervention is given a recommendation based on the strength of available research evidence (1 = randomized controlled trials and systematic reviews of RCTs; 2 = studies with a comparison group; 3 studies without a comparison group or simulation) and direction of the compiled evidence: **supportive** of intervention; **neutral** evidence for intervention; or **opposing** evidence for intervention). See: **http://emergency.medicine.dal.ca/ehsprotocols/protocols/toc.cfm***