RN Protocol: Burns

I. POLICY

A. Function: To facilitate and guide the Registered Nurse (RN) in the assessment and treatment of patients presenting with burns.

B. Circumstances under which the RN may perform the function:
1. Setting: Outpatient clinic and triage treatment area.
2. Supervision: No direct supervision required.

II. PROTOCOL

A. Definition: This protocol covers the assessment and treatment of patients presenting with burns.

The sources of burns are thermal (heat and scalds), chemical, radiation (sun) or electrical.

Inhalation injuries can occur when a patient is exposed to hot or toxic gas or fumes from a fire, a chemical leak or from burns around the head and neck. Inhalation may result in an inflammatory response rapidly leading to upper respiratory obstruction and respiratory arrest. Signs of inhalation injuries include: wheezing or coughing; change in voice; singed nasal or eyebrow hairs; and soot in the mouth, nose or sputum. Carbon monoxide poisoning may also occur.

Treatment decisions are based on the severity of the burn.

The severity of a burn is determined by (1) the amount of body surface area (BSA) involved; (2) the depth of the burn; (3) the patient's age (4) current underlying conditions (5) additional trauma.

The amount of body surface area is determined by formulas that divide the body into percentages. The area of the patient's hand is equal to approximately 1% of body surface. A 'Rule of Nines' chart is used to determine the BSA covered by larger burns.

Burn depth is divided into three classifications: (1) First degree; (2) Partial Thickness; (3) Full thickness.

1. First degree burns are limited to the outer layer of the skin, the epidermis. They are characterized by erythema, blanching and mild local pain. Blisters are absent. Healing usually occurs within 3-6 days. Examples are minor sunburns and scalds.

2. Partial thickness burns, also called second degree burns, involve the epidermis and dermis. They may be either superficial or deep.

   In second degree, superficial, partial thickness burns, the skin is pink/red and moist. Blanching is present. Blisters develop over the first few days and may weep. The burn is painful and sensitive to touch. Healing usually occurs within 10 to 14 days. Examples of second degree, superficial, partial thickness burns are severe sunburn and severe scalds.

   In second degree, deep, partial-thickness burns, the skin may be ivory or pearly white, surrounded by light pink or red tissue. Blanching and pain may be absent. The skin surface is dry and blisters are flat rather than fluid filled. Wounds heal in approximately 30 days.

3. Full thickness burns, also called third and forth degree burns, may involve nerve, fat, muscle, and/or bone tissue. The skin appears white, brown, or black and may be depressed from the surrounding tissue. Blanching is absent. These burns are initially painless. Scarring is expected and grafts are usually required.

B. Subjective:
   1. Chief complaint (document in the patient's own words).
   2. Date and time of injury.
   3. Mechanism of injury (thermal, chemical, radiation, or electrical)
   4. Other items burned in the fire
   5. First aid rendered at the scene.
   6. Pain assessment rated on a scale of 0-10 (0 = no pain, 10 = worst pain). Note location and any radiating characteristics. Include all accompanying symptoms (e.g., numbness, tingling, or loss of motor function to any part of the body or to any extremity distal to the burn).
   7. History of chronic illness (e.g., diabetes; cardiac, respiratory (cough, dyspnea), liver, or renal disease; HIV infection).
   8. Relevant medical or surgical history (e.g., previous history of burns, respiratory complications)
   9. Age
   10. Allergies especially to sulfa.
   11. Current medications.
   12. Date of last tetanus immunization

C. Objective:
   1. Vital signs
   2. Respiratory assessment including assessment for smoke inhalation
   3. Amount of BSA affected
   4. Depth of burn

5. For burns on an extremity, document whether or not the burn is circumferential.
6. Peripheral pulses. Note sensation and perfusion distal to the injury.
7. Assessment for ancillary injuries or trauma
8. Observation for symptoms of shock: fever; significant blisters; pale or clammy skin; weakness, bluish lips and fingernails; drop in alertness; rapid and weak pulse; breathing shallow; BP below normal.

D. Assessment:
1. Impaired skin integrity related to/evidenced by:
2. Impaired gas exchange related to/evidenced by:
3. Pain related to/evidenced by:

E. Plan:
1. Initial treatment for burns
   a Stop the burning process and provide immediate care.
      i. Fire: wet clothing using any available non-flammable liquid, or smother flames by logrolling the patient on the ground.
      ii. Scalds: pour cool water over the patient and clothing or place the clothed patient in a cool shower to stop the burning process.
      iii. Chemical burn: Remove clothing if contaminated. If the chemical is in powder form, dust the powder from the patient. Avoid self-contamination through the use of gloves, masks and other personal protective equipment. Irrigate the contaminated area with copious amounts of cool water. If possible, determine the type of chemical. Contact the physician immediately for further direction.
      iv. Radiation (sunburn): remove the patient from the source of the heat or light.
      v. Electrical burn: move the patient away from the electrical source using a dry, non-conducting object such as a broom, rope, chair, or cushion. Take precautions to avoid electrical injury. Observe the patient for seizures, headache, or loss of consciousness. If symptoms of these conditions are present, place a cervical collar and spinal board on the patient. Transport the patient to the Triage Treatment Area as soon as possible. Obtain a rhythm strip via EKG machine or cardiac monitor.
   b. Perform a primary survey: airway, breathing, circulation, and level of consciousness. Observe for hemorrhage.

2. Refer to a physician **STAT** for:
   a. First degree burns that involve a substantial portion of the hands, feet, face, groin, buttocks or a major joint
   b. Second degree, superficial, partial thickness burns over 10% of BSA
   c. All second degree, deep, partial thickness burns
   d. All third or fourth degree burn
   e. Suspected inhalation injuries

f. All chemical burns
g. All electrical burns
h. Burns with associated major trauma
i. Burns in any high-risk patient (e.g., age 60 or older, underlying medical problems).

2. For suspected inhalation injuries:
   a. Place the patient on a pulse oximeter and administer oxygen via mask or nasal cannula to maintain oxygen saturation above 90%.
   b. Monitor condition closely.

3. First Degree burns
   a. Gently wash the area with soap and water.
   b. Apply cool, moist compresses PRN to relieve the burning sensation
   c. Acetaminophen 325 2 tabs PO Q4-6 hours PRN pain while symptoms persist; not to exceed 12 tabs in 24 hours. **or**
   d. Ibuprofen 200mg 1-2 tabs PO Q4-6hrs PRN pain while symptoms persist; not to exceed 6 tabs in 24 hrs **or**
   e. Naproxen 220mg 2 tabs PO 1st hour; 1 tab Q8-12 hrs PRN pain while symptoms persist; not to exceed 3 tabs in 24hrs
   f. Instruct the patient to follow up in RN clinic if condition does not improve in 7 days or if infection develops. Refer to the physician as needed.

4. Second degree, superficial, partial-thickness burns
   a. Cleanse the area gently with soap and water. Use 4 x 4 gauze pads if necessary to remove dirt and grease. Do not break blisters.
   b. Cover the wound with Silver Sulfadiazine 1% cream and a non-adherent dressing. Secure the dressing with Kerlix wrap.
   c. Administer tetanus prophylaxis per Tetanus Immunization Guidelines if indicated.
   d. Acetaminophen 325 2 tabs PO Q4-6 hours PRN pain while symptoms persist; not to exceed 12 tabs in 24 hours. **or**
   e. Ibuprofen 200mg 1-2 tabs PO Q4-6hrs PRN pain while symptoms persist; not to exceed 6 tabs in 24 hrs **or**
   f. Naproxen 220mg 2 tabs PO 1st hour; 1 tab Q8-12 hrs PO PRN pain while symptoms persist; not to exceed 3 tabs in 24hrs
   g. Notify the physician.
   h. Follow up in RN clinic daily for dressing changes. Apply Silver Sulfadiazine 1% cream and a non-adherent dressing daily until healed. Refer to a physician if symptoms do not improve or if infection develops.

5. Deep partial-thickness or full thickness burns; third or forth degree burns
   a. Transport the patient to the Triage Treatment Area **STAT**.

b. Place the patient on pulse oximeter and administer oxygen via mask or nasal cannula to maintain oxygen saturation above 90%.
c. If transport time to a hospital is greater than 30 to 60 minutes, or if other injuries are present, insert a large-bore intravenous catheter and infuse Ringer's lactate or Sodium Chloride Intravenous Solution (0.9%) at KVO rate.
d. Remove debris from the burn using sterile-saline soaked gauze.
e. Cover wound with a dry, sterile dressing.
f. Elevate all burned extremities.
g. Monitor and record vital signs every 15 minutes. Observe depth and quality of respirations.
h. Monitor and record the capillary refill time of affected extremities every 15 minutes.
i. Observe and monitor the level of orientation status of the patient every 15 minutes.
j. Prepare to transfer patient to an outside facility or admit to a facility capable of providing a higher level of care.

F. Patient Education:
1. Assess patient's potential for understanding the health information to be provided.
2. Provide patient education consistent with the assessment of the condition.
3. Document the education provided and the patient's level of understanding on the nursing protocol encounter form or emergency care flow sheet.
4. Refer patient to other resources as needed. Document all referrals on the nursing protocol encounter form.
5. Follow-up appointments should be scheduled for dressing changes and to monitor for signs of infection, pallor or hypesthesia / paresthesia distal to wound.

G. Documentation:
All information related to the patient's complaint shall be documented on the appropriate nursing protocol encounter form or emergency care flow sheet. The encounter form(s) or flow sheets shall be filed in the patient's unit health record.

III. REQUIREMENTS FOR RN

A. Education/Training: The Registered Nurse shall attend an in-service on the assessment and treatment of patients presenting with burns, and achieve a minimum score of 80% on the written posttest examination.
B. Experience: None.
C. Certification: None.
D. Initial Evaluation: Initial competence will be validated onsite through simulated exercises, mock scenarios, and return demonstrations. The Registered Nurse must

satisfactorily demonstrate all critical behaviors identified on the Competence Validation Tool to be considered competent to perform standardized procedure functions.

A written performance appraisal shall be performed by the Supervising Registered Nurse or designee six months after initial competence is validated. Methods to evaluate performance shall include but not be limited to direct observation, feedback from colleagues and physicians, and chart review.

E. Ongoing Evaluation: Ongoing competence will be validated annually using case study analysis.

IV. REGISTERED NURSES AUTHORIZED TO PERFORM THIS PROCEDURE

A current list of all Registered Nurse authorize to perform this procedure shall be maintained on file in the Office of the Director of Nursing.

V. DEVELOPMENT AND APPROVAL OF THE STANDARDIZED PROCEDURE

This standardized procedure was developed and approved by authorized representatives of administration, medicine, and nursing. The procedure will be reviewed annually.

REVIEW DATE: _____ REVISION DATE: _____
_____ _____
_____ _____

THE PROTOCOL WAS APPROVED BY:

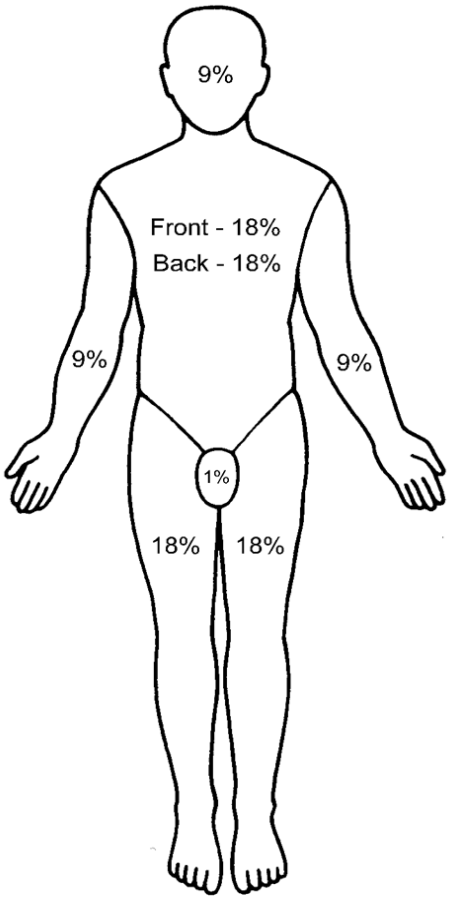
_____ DATE:_____
Chief Nurse Executive/Director of Nursing

_____ DATE:_____
Chief Medical Executive

Body Surface Area Chart

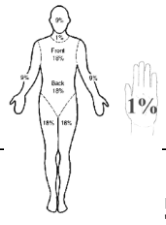
Rule of Nines

Head and neck, total for front and back	9%
Each upper limb total for front and back	9%
Thorax and abdomen, front only	18%
Thorax and abdomen, back	18%
Perineum	1%
Each lower limb total for front and back	18%



CALCULATE THE EXTENT OF THE BURN

Head and neck, total:	_____
Upper limbs, total:	_____
Thorax and abdomen, front:	_____
Thorax and abdomen, back:	_____
Perineum:	_____
Lower limbs, total:	_____
TOTAL	_____



_____ _____