RN Protocol: Insect Stings and Spider Bites

I. POLICY

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

B. Circumstances under which the RN may perform the function:
   1. Setting: Outpatient clinic, triage and treatment area.
   2. Supervision: None required.

II. PROTOCOL

A. Definition: This protocol covers the assessment and treatment of patients presenting with insect stings and spider bites.

Insect stings are capable of producing a variety of reactions ranging in severity from mild to life threatening. The venom injected by insects such as bees, yellow jackets, wasps, and hornets is responsible for the vast majority of reactions seen after an insect sting. The most common reaction to an insect sting is localized pain, pruritis, erythema, and swelling at the sting site. Symptoms are fairly intense during the first few minutes after the sting, but lessen dramatically after a few hours. Occasionally, a local reaction becomes extensive with swelling extending well beyond the sting site. This delayed hypersensitivity reaction is usually seen within the first two days of the actual sting and may last up to seven days. Individuals who have experienced large local reactions in the past will usually manifest similar reactions in the future. While most reactions are mild a small segment of the population will experience an anaphylactic reaction to an insect sting. Anaphylactic deaths due to insect stings rank second only to those caused by penicillin. The signs and symptoms associated with insect sting anaphylaxis are the same as those of anaphylaxis caused by a specific food, drug, or contrast dye (i.e., generalized warmth, pruritis, cutaneous erythema, hypotension, tachycardia, tightness in the throat, dyspnea, wheezing, airway obstruction, and eventual respiratory/cardiac arrest).

Most spider bites are harmless, producing no more than a localized reaction at the site of envenomation. The black widow spider, however, is capable of inducing local **and** systemic reaction. Black widow spiders may be identified by their black bodies and red hourglass-shaped figure on the surface of the abdomen. The initial bite of a black widow spider may be painless or feel like a pinprick. Local symptoms usually begin 20 to 30 minutes after the bite and include pain, erythema, and swelling at the venom injection site. Two tiny red marks surrounded by an area of blanching and an outer halo of redness may be the only physical sign of a black widow spider bite. Systemic signs and symptoms include pain and cramping of muscles in the shoulders, back, chest, legs, and abdomen; diaphoresis; hypertension; tachycardia; weakness, paresthesia; headache; slurred speech; nausea and vomiting. Mortality, however, is low for healthy adults and the vast majority of patients bitten by a black widow spider recover fully.

B. Subjective:
   1. Chief complaint (document in the patient's own words).
   2. Date and time of onset.
   3. Description of the insect if possible.
   4. Location of the bite or sting.
   5. Assess for pain and pruritis at the bite/sting site.
   6. Previous history of allergic reaction to a bee, hornet, wasp, or yellow jacket sting.
   7. Assess for the following symptoms: nasal congestion, difficulty breathing, difficulty swallowing, tightness in chest, generalized warmth, tingling of the hands, feet, or lips, abdominal cramps.
   8. Medication allergies.
   9. Current medications.

C. Objective:
   1. Vital signs.
   2. Assess level of consciousness and responsiveness.
   3. Observe ventilatory effort indicating difficulty breathing, respiratory distress.
   4. Assess breath sounds bilaterally (clear, wheezes, crackles, diminished, absent).
   5. Observe oropharynx for swelling.
   6. Observe skin for bite marks, erythema, edema, urticaria, diaphoresis, facial swelling, cyanosis.
   7. For spider bites assess abdomen for diminished bowel sounds and rigid, board-like abdomen.
   8. For bee stings evaluate for retained insect parts.

D. Assessment:
   - Impaired skin integrity related to/evidenced by:
   - Pain related to/evidenced by:
   - Risk for ineffective breathing pattern related to:

E. Plan:

   1. **Insect sting:** local reaction characterized by urticaria, local erythema, edema, and pruritis at the sting site.

      a. Maintain patent airway.
      b. Remove insect stinger if still imbedded in the patient by flicking the stinger out of the skin using a tongue blade.
      c. Apply ice to sting site and elevate extremity if affected.
      d. Follow-up in RN clinic if symptoms do not improve in 3 days or immediately if inflammation increases (i.e., reaction extends well beyond sting site).
      e. Tetanus prophylaxis per guidelines.

2. **Insect sting:** generalized life-threatening reaction characterized by abrupt onset of the above symptoms, followed by facial swelling, tightness in the throat, dyspnea, wheezing, hypotension, tachycardia, anxiety, and airway obstruction, which may lead to respiratory/cardiac arrest.

    a. O_2 at 15 L/minute via rebreather. If airway obstruction occurs provide mechanical ventilation using a bag valve mask (ambu bag).
    b. Notify physician **STAT**.
    c. Transport to Triage / Treatment Area **STAT**.
    d. Place on pulse oximeter and monitor oxygen saturation.
    e. Place on cardiac monitor and monitor cardiac rate and rhythm.
    f. Administer Epinephrine 1:1000 aqueous 0.3 mg SQ. Vigorously massage injection site to increase absorption. May repeat dose every 10 to 15 minutes x 2 PRN.
    g. Prepare to transfer patient to outside facility or admit to a facility capable of providing a higher level of care.
    h. Insert an intravenous line using large-bore angiocath (i.e., 14, 16, or18-gauge) and infuse Sodium Chloride Intravenous Solution (0.9%). Adjust infusion rate to keep systolic blood pressure $\geq$ 90 mm Hg.
    i. Monitor and record vital signs every 5 minutes until stable. Thereafter, monitor and record vital signs, oxygen saturation, level of consciousness, and breath sounds every 15 minutes.
    j. Administer Diphenhydramine HCL 50 mg IV over five minutes (one time only)
    k. Administer Methyprednisolone Sodium Succinate 125 mg IV X 1 over 1-2 minutes.
    l. Fax a copy of the relevant progress notes, physician orders, and emergency care flow sheet to receiving facility.

3. **Spider bite:** local reaction characterized by pain, erythema, and swelling at the venom injection site.

    a. Cleanse bite with Chlorhexidine Skin Cleanser.
    b. Apply ice to bite to relieve pain and local swelling. Elevate extremity if affected.
    c. Monitor and record vital signs every 15 minutes for one hour; then every hour until stable.
    d. Observe the patient for at least two hours before discharging back to housing unit.
    e. Instruct patient to utilize the urgent/emergent process to access medical care if he/she experiences difficulty breathing, or if hematuria, rash, joint pain or signs of infection develop.

4. **Spider bite**: systemic reaction characterized by pain and cramping of the large muscles, diaphoresis, hypertension, tachycardia, weakness, paresthesia, headache, slurred speech, nausea and vomiting.

    a. Maintain a patent airway.

b. Notify the physician **STAT**.
c. Apply ice to bite to relieve pain and swelling and slow the action of the venom. (Do not apply ice if there is the possibility of a rattlesnake bite- ice increases tissue necrosis).
d. Monitor and record vital signs every 15 minutes.
e. Insert an intravenous line and infuse Sodium Chloride Intravenous Solution (0.9%). Adjust infusion rate to keep systolic blood pressure > 90 mm Hg.
f. Prepare to transfer patient to 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 emergency care flow sheet or nursing protocol encounter form.
4. Refer patient to other resources as needed. Document all referrals on the emergency care flow sheet or nursing protocol encounter form.

G. Documentation:
All information related to the patient's complaint shall be documented on the emergency care flow sheet or nursing protocol encounter form. The forms 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 management of insect stings and spider bites, 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 demonstration. 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 has been 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, written examination, and return demonstrations where appropriate.

IV. REGISTERED NURSES AUTHORIZED TO PERFORM THIS PROCEDURE

A current list of all Registered Nurses authorized 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 STANDARDIZED PROCEDURE WAS APPROVED BY:

_____ DATE:_____
Chief Nurse Executive/Director of Nursing

_____ DATE:_____
Chief Medical Executive