THIS IS A POST- ENTRY LEVEL COMPETENCY FOR REGISTERED NURSES AND LICENSED PRACTICAL NURSES (IN SPECIFICALLY APPROVED PRACTICE SETTINGS) AND REQUIRES ASSESSMENT OF COMPETENCY PRIOR TO PERFORMING

PREAMBLE

Anaphylaxis is a life threatening reaction to a foreign substance that requires immediate treatment. It is important to be prepared to respond to anaphylaxis prior to administration of any product. The recommended first line of treatment of anaphylaxis is the timely administration of epinephrine and diphenhydramine (Benadryl®).

POLICY

1. Management of anaphylaxis following immunization (see definition) is a post-entry level competency for RNs and LPNs which requires assessment of competency, by successful completion of the Immunization Learning Module.

   1.1. Additionally, LPNs working in specifically approved practice settings require successful completion of an approved Post- Entry Level Competency program in immunization (e.g.: NSCC Immunization Program of LPNs)

2. An authorized prescriber’s order or pre-printed order is required for all programs and services administering medications required in the management of anaphylaxis following immunization.

   Exception: Public Health Services; acting under the direction of the Medical Officer of Health.
3. The RN/LPN is responsible and accountable for the management of anaphylactic reactions, including:
   3.1. Completion of informed consent for management of anaphylaxis; to be obtained at the time of informed consent for immunization (Refer to CH Policy: Immunization Administration MM 20-010)
   3.2. Assessment of response to immunization.
   3.3. Initiation of anaphylaxis management following immunization based on assessment.
   3.4. Documentation and reporting.
4. Patients are to be screened carefully to differentiate reactions along the spectrum from mild (e.g., soreness, itching) to severe and life threatening (e.g., anaphylaxis).
   Note: While anaphylaxis is extremely rare following immunization, at a rate of 0.4-1.8 per 1,000,000 in Canada, all vaccines have the potential to cause an adverse reaction.

DEFINITIONS

Anaphylaxis: A severe systemic life threatening reaction involving at least 2 body systems (affecting the skin, respirations, circulation). It develops over several minutes. Cardinal features include:
   • Itchy, urticarial rash (in over 90% of cases),
   • Progressive painless swelling about face and mouth,
   • Respiratory symptoms including sneezing, coughing, wheezing, labored breathing and upper airway swelling, possibly causing airway obstruction,
   • Hypotension. (Reference Canadian Immunization Guide Page 81)

EQUIPMENT

Anaphylaxis Kit:
   • Quick Reference Management of Anaphylaxis – Initial Management Following Immunization (CD2018MR)
   • 3 x 1mL ampoules of epinephrine (1:1000 aqueous solution)
   • 1 x 1mL vials of diphenhydramine (50mg/ml)
   • 1 x 50 mg diphenhydramine pill
   • 2 x 25 mg chewable diphenhydramine pill
   • 3 x 1mL syringes with safety needles (25 gauge, 1"
   • 4 x 3mL syringes
   • 5 x 25 gauge 1" needle (extra)
   • 5 alcohol swabs
   • 5 cotton swabs
PROCEDURE

1. In the event of anaphylaxis, activate the emergency response as applicable to your practice area (Call 911 for EHS services or 3333 for Code Blue response).
   1.1. Position the patient in the recumbent position with legs elevated.
   1.2. Provide the ABCs of resuscitation (Airway, Breathing, Circulation).

2. As per the authorized prescriber’s order, immediately administer aqueous epinephrine intramuscularly (IM), 1:1000 in appropriate dose according to age/body weight. (Dosage: 0.01ml/kg to a maximum of 0.50 ml)
   2.1. Administer epinephrine IM preferentially into an anterolateral, unimmunized thigh site (vastus lateralis).
      **Note:** This is applicable for all ages. The injection can be made through clothing.
   2.2. If administration into a thigh is problematic, epinephrine may be administered IM into the deltoid muscle of children greater than or equal to 12 months of age and to adults.
   2.3. When both thighs have been used as immunization sites, administer epinephrine into a site in the thigh that is at least 2.5 cm (1 inch) away from any immunization site.
      2.3.1. As this may not be possible in some young infants with small thigh muscle mass, separate the sites with as much distance as possible.
   2.4. **DO NOT** inject epinephrine directly into an IM immunization site as it dilates blood vessels and speeds absorption of the vaccine (i.e. the offending allergen).

   **Table 1: Appropriate Dose of Epinephrine (1:1000)**

<table>
<thead>
<tr>
<th>AGE</th>
<th>Weight (kg)*</th>
<th>Weight (lbs)*</th>
<th>Dosage 1 mg/ml (1:1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In kg</td>
<td>In lbs</td>
<td>0.01 ml/kg</td>
</tr>
<tr>
<td>2 to 6 months</td>
<td>4-7 kg</td>
<td>9-15 lbs</td>
<td>0.07 mg (0.07 ml)</td>
</tr>
<tr>
<td>7 to 18 months</td>
<td>7-11 kg</td>
<td>15-24 lbs</td>
<td>0.10 mg (0.10 ml)</td>
</tr>
<tr>
<td>19 to 48 months</td>
<td>11-17 kg</td>
<td>24-37 lbs</td>
<td>0.15 mg (0.15 ml)</td>
</tr>
<tr>
<td>49 months to 5 years</td>
<td>17 – 23 kg</td>
<td>37 – 51 lbs</td>
<td>0.20 mg (0.20 ml)</td>
</tr>
<tr>
<td>6-9 years</td>
<td>23 – 35 kg</td>
<td>51-77 lbs</td>
<td>0.30 mg (0.30 ml)</td>
</tr>
<tr>
<td>10-13 years</td>
<td>35 – 45 kg</td>
<td>77 – 99 lbs</td>
<td>0.40 mg (0.40 ml)</td>
</tr>
<tr>
<td>Greater than or equal to 14 years</td>
<td>45+ kg</td>
<td>99+ lbs</td>
<td>0.50 mg (0.50 ml)</td>
</tr>
</tbody>
</table>

   * Dosing by body weight is preferred  

3. Assess need to administer **ONE dose** diphenhydramine (Benadryl®). (Dosage: 1-2 mg/kg to a maximum single dose of 50 mg. See **Table 2**.)
   **Note:** Oral Treatment is preferred for conscious patients (appropriate dose according to age) in non-hospital settings.

3.2. Administer IM injection in the unimmunized site as a separate injection (thigh or deltoid)
Table 2: Approximate Dose by Age of Diphenhydramine (Benadryl®)

<table>
<thead>
<tr>
<th>AGE</th>
<th>Oral Route (1-2 mg/kg)</th>
<th>IM (50 MG/ML)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td>12.5 mg</td>
<td>12.5 mg (0.25 mL)</td>
</tr>
<tr>
<td>2-4 years</td>
<td>25 mg</td>
<td>25 mg (0.50 mL)</td>
</tr>
<tr>
<td>5-11 years</td>
<td>25-50 mg</td>
<td>25-50 mg (0.50-1.00 mL)</td>
</tr>
<tr>
<td>Greater than or equal to 12 years</td>
<td>50 mg</td>
<td>50 mg (1.00 mL)</td>
</tr>
</tbody>
</table>


4. Repeat epinephrine at 5 minute intervals as needed (i.e. if breathing becomes more laboured or level of consciousness decreases) to a maximum of three doses. Alternate right and left thigh or arm sites for repeat doses of epinephrine (to maximize absorption of epinephrine).

5. Transport to acute care/emergency services, as needed (dependent on the setting in which the immunization/anaphylaxis occurred).

6. **Documentation and Reporting**
   6.2. Report to the Manager and/or Attending Physician/Ordering Physician
   6.3. Complete the Capital Health Patient Safety Report (on-line occurrence report)
   6.4. Complete the Adverse Event Following Immunization (AEFI) (previously known as the Vaccine Associated Adverse Event form) and send to the Medical Officer of Health at Public Health Services through inter-office mail or fax to 481-5803.

   **Note:** Form can be found in the back of the CPS or at the Public Health Agency of Canada link: [http://www.phac-aspc.gc.ca/im/pdf/he4229e.pdf](http://www.phac-aspc.gc.ca/im/pdf/he4229e.pdf)

**RELATED CAPITAL HEALTH DOCUMENTS**

**Policies**
Immunization Administration and Learning Module (MM 20-010)

**Forms**
Management of Anaphylaxis – Initial Management Following Immunization form (CD2018MR)
REFERENCES


Canadian Society of Allergy and Clinical Immunology 2005


HISTORICAL DATES

November 2003