INTRODUCTION

Anaphylaxis is a serious, potentially life-threatening allergic reaction to foreign antigens. Anaphylaxis is preventable in many cases and treatable in all. It may be associated with immunizations as well as exposure to an allergen (e.g. bee stings, pollen, food, latex). Anaphylaxis is a medical emergency. Quick recognition and treatment can be life-saving.

DEFINITIONS:

Health Care Professional (HCP) – Health Care Professional (HCP) will be used to refer to Registered Nurse (RN), Registered Psychiatric Nurse (RPN) and Licensed Practical Nurse (LPN).

ROLES:

Licensed Practical Nurses (LPNs) - as assigned, LPNs provide Anaphylaxis – Initial Management as outlined in this policy and medical directive (Appendix A). LPNs provide this care as part of their program’s team response to medical emergencies.

Registered Psychiatric Nurses (RPNs) – as assigned, RPNs will provide Anaphylaxis – Initial Management as outlined in this policy and medical directive (Appendix A). RPNs provide this care as part of their program’s team response to medical emergencies.
Registered Nurses (RNs) – RNs identified by their manager in targeted practice settings will be certified in the RN Specialty Practice: RN Clinical Protocol: Health Condition in an Emergency: Anaphylaxis – Initial Management. RNs will provide care as outlined in this policy and medical directive (Appendix A), as part of their program’s team response to medical emergencies.

Graduate Nurses (GNs) – GNs identified by their manager in targeted practice settings will be certified in this RN Specialty Practice (RNSP) but may only perform this procedure under the direct supervision of a certified RN.

1. PURPOSE

1.1 To ensure clients receive immediate attention and treatment in the event of an anaphylactic reaction.

2. POLICY

2.1 The Health Care Professional will:
   - Follow the Medical Directive: “Anaphylaxis: Initial Management in Long Term Care and Rural Acute Care Settings” form #104246 (Appendix A) in targeted areas.
   - Receive Education/Certification to Anaphylaxis - Initial Management in former SktnHR including:
     - Successfully complete the required learning module: Anaphylaxis: Initial Management including an assessment of knowledge (i.e. quiz) (NOTE: teaching and learning methods may vary e.g. classroom and/or self-study using paper module or e-learning).
     - Provide documentation of learning module and quiz to clinical nurse educator/supervisor.
     - Annual certification/review of Anaphylaxis Initial Management is required.
   - Have immediate access to Anaphylaxis Management medications (EPINEPHrine, diphenhydrAMINE). This may be in the form of an Anaphylaxis Kit if one is provided in your area. Sites may also include corticosteroid and ranitidine but a prescriber order is required prior to administration of these two medications.

3. PROCEDURES

3.1 Identify severe allergic reaction or potential anaphylaxis.

3.2 Stop or remove the causative agent.

3.3 Determine appropriate dose of EPINEPHrine as per the chart in the medical directive (appendix A).

   NOTE: for pediatric clients, determine appropriate dose of EPINEPHrine based on weight (preferred). If weight is not known, determine dose based on Broselow tape (if available) or client age.

3.4 Administer first dose of EPINEPHrine intramuscularly (IM) into the vastus lateralis as per the chart in the medical directive (Appendix A).
3.5 Position the client on their back or in a comfortable position if there is difficulty breathing or respiratory distress. Elevate the lower extremities if possible.

3.6 Call 911/Code Blue/Outreach/Practitioner as soon as possible.

3.7 Monitor the pulse, level of consciousness and respiratory effort continuously.

3.8 EPINEPHrine may be repeated intramuscularly every 5 minutes for continued, worsening or progression of signs and symptoms to a maximum of 3 doses.

3.9 According to the medical directive, administer diphenhydRAMINE intramuscularly x 1 dose only after giving at least the 1st dose of EPINEPHrine AND only if:

- symptoms are not controlled or
- to maintain symptom control if client cannot be transferred to an acute care facility within 30 minutes.

**NOTE: ***In the treatment of anaphylaxis, intramuscular diphenhydRAMINE is considered adjunct second-line therapy to EPINEPHrine, and must never be administered alone in the treatment of anaphylaxis***

3.10 Document the time of onset of symptoms and time(s) EPINEPHrine and diphenhydRAMINE were administered on the Anaphylaxis Treatment Worksheet form #104201 (Appendix B).

3.11 If client becomes unresponsive with no palpable pulse, initiate CPR as per former SktnHR Regional Policy: Resuscitation Policy #7311-60-016, and former SktnHR Nursing Policy: Cardiopulmonary Resuscitation Standards – Nursing #1123.

3.12 Client may be transferred to a higher level of care for follow up as directed by Practitioner.

3.13 Update Allergy/Intolerance Record if necessary. Refer to Allergy/Intolerance Documentation Policy 7311-60-029

4. REFERENCES


Health Canada: Canadian Center for Occupational Health and Safety: https://www.ccohs.ca/oshanswers/hsprograms/epinephrine.html?_=undefined&wbdisable=true


# Appendix A

## Anaphylaxis: Initial Management in Long Term Care and Rural Acute Care Settings

**MD-043**

Based on an individual assessment of each client, registered nurses, registered psychiatric nurses, and licensed practical nurses who have successfully completed ‘Anaphylaxis Training’ may administer medications as directed for all persons who display signs and symptoms of anaphylaxis that include at least two body systems (see reverse).

### Contraindications to EPINEPHrine
- There are no contraindications to administering EPINEPHrine in treating an anaphylactic reaction

### Contraindications to diphenhydrAMINE
- Hypersensitivity to diphenhydrAMINE or other structurally related antihistamines (e.g. dimenhydrINATE) or any component of the formulation
- Neonates or premature infants; use with caution in young children due to potential for excitation
- Breast-feeding

### Medical Directive Orders
- STOP causative agent
- Give first dose of EPINEPHrine intramuscularly
- Position client on back with lower extremities elevated or in a position of comfort if there is respiratory distress and/or vomiting
- Call 911/Code Blue/Outreach/Practitioner as soon as possible
- Monitor pulse, level of consciousness and respiratory effort continuously
- Repeat EPINEPHrine intramuscularly every 5 minutes as needed (maximum 3 doses total)
- Document on Anaphylaxis Treatment Worksheet (form #104281)

### EPINEPHrine Dose Table

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Range of Weight (kg)</th>
<th>EPINEPHrine 1 mg/mL injectable; intramuscular (IM); Minimum dose: 0.06 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Dosing by weight (0.01 mg/kg) is preferred if body weight is known</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infants and Children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-6 months*</td>
<td>2-5 kg</td>
<td>0.05 mg IM (0.05 mL)</td>
</tr>
<tr>
<td>7-24 months*</td>
<td>5.5-10 kg</td>
<td>0.1 mg IM (0.1 mL)</td>
</tr>
<tr>
<td>25-36 months*</td>
<td>10.5-15 kg</td>
<td>0.15 mg IM (0.15 mL)</td>
</tr>
<tr>
<td>37-59 months*</td>
<td>15.5-20 kg</td>
<td>0.2 mg IM (0.2 mL)</td>
</tr>
<tr>
<td>5-7 years</td>
<td>20.5-25 kg</td>
<td>0.25 mg IM (0.25 mL)</td>
</tr>
<tr>
<td>8-10 years</td>
<td>25.5-35 kg</td>
<td>0.3 mg IM (0.3 mL)</td>
</tr>
<tr>
<td>11-12 years</td>
<td>35.5-45 kg</td>
<td>0.4 mg IM (0.4 mL)</td>
</tr>
<tr>
<td>13-18 years</td>
<td>45.5+ kg</td>
<td>0.5 mg IM (max dose) (0.5 mL)</td>
</tr>
<tr>
<td>Adult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult</td>
<td>Adult</td>
<td>0.5 mg IM (max dose) (0.5 mL)</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>Adult</td>
<td>0.5 mg IM (max dose) (0.5 mL)</td>
</tr>
<tr>
<td>Obesity</td>
<td>Adult</td>
<td>Ensure needle length appropriate 0.5 mg IM (max dose) (0.5 mL)</td>
</tr>
</tbody>
</table>

These orders do not require a prescribing practitioner signature

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*Form #104248 10/18  Category: Medical Directives  Page 1 of 2*
### Assessment of Anaphylaxis

Persons who are experiencing anaphylaxis will rapidly develop S&S that involve at least two body systems (integumentary, respiratory, circulatory, or gastrointestinal) should be treated promptly with EPINEPHrine. The cardinal features of anaphylaxis include:

1. Itchy, urticarial rash
2. Progressive, painless swelling of face, mouth, and tongue
3. Sneezing, coughing, wheezing, labored breathing, hoarseness, and difficulty swallowing due to upper airway swelling
4. Rapid and weak pulse, decreased blood pressure
5. Nausea, vomiting, abdominal pain, and loose stools.
Anaphylaxis: Initial Management in Long Term Care and Rural Acute Care Settings

Medical Directive Orders Continued...

"In the treatment of anaphylaxis, intramuscular diphenhydramine is considered adjunct second-line therapy to EPINEPHrine, and must never be administered alone in the treatment of anaphylaxis."

☐ Give diphenhydramine intramuscularly x 1 dose only after giving at least the 1st dose of EPINEPHrine AND
   ☐ only if symptoms are not controlled
   OR
   ☒ to maintain symptom control if client cannot be transferred to an acute care facility within 30 minutes

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Range of Weight (kg)</th>
<th>Diphenhydramine Dose 50 mg/mL injectable; intramuscular (IM)¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-30 months</td>
<td>10.5-15 kg</td>
<td>15 mg IM (0.3 mL)</td>
</tr>
<tr>
<td>37-50 months</td>
<td>15.5-20 kg</td>
<td>20 mg IM (0.4 mL)</td>
</tr>
<tr>
<td>5-7 years</td>
<td>20.5-25 kg</td>
<td>25 mg IM (0.5 mL)</td>
</tr>
<tr>
<td>8-10 years</td>
<td>25.5-35 kg</td>
<td>35 mg IM (0.7 mL)</td>
</tr>
<tr>
<td>11-12 years</td>
<td>35.5-45 kg</td>
<td>45 mg IM (0.9 mL)</td>
</tr>
<tr>
<td>Greater than/equal to 13 years</td>
<td>45.5+ kg</td>
<td>50 mg IM (1 mL)</td>
</tr>
</tbody>
</table>

¹IM route is recommended by the Ministry of Health

Saskatchewan Immunization Manual, Chapter 12 – Anaphylaxis Management, September 2015

This Medical Directive has been approved by the Area Chief of Staff – Saskatoon and complies with the former Saskatoon Health Region Medical Directives Policy (7311-50-027).

Review will occur every year. This Directive is in effect until October 2019.
ANAPHYLAXIS TREATMENT WORKSHEET

Page 1 of 2

Use the following table to document the patient's reaction:

<table>
<thead>
<tr>
<th>Caustive agent (if medication, include lot number, expiry date, manufacturer, dose, route, site, and time given):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Reactions details (see reverse for definitions):

<table>
<thead>
<tr>
<th>Skin/Mucosal</th>
<th>Reaction Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urticara - generalized</td>
<td></td>
</tr>
<tr>
<td>Urticaria - localized at injection site</td>
<td></td>
</tr>
<tr>
<td>Erythema</td>
<td></td>
</tr>
<tr>
<td>Puritus</td>
<td></td>
</tr>
<tr>
<td>Prickling sensation</td>
<td></td>
</tr>
<tr>
<td>Tingling sensation</td>
<td></td>
</tr>
<tr>
<td>Rash</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Angioedema:</th>
<th>Tongue</th>
<th>Throat</th>
<th>Uvula</th>
<th>Lip</th>
<th>Eyelids</th>
<th>Face</th>
<th>Limbs</th>
<th>Injection site</th>
<th>Eyes:</th>
<th>Itchy</th>
<th>Red</th>
<th>Tearing</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Respiratory:</th>
<th>Reaction Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sneeze</td>
<td></td>
</tr>
<tr>
<td>Rhinorrhoea</td>
<td></td>
</tr>
<tr>
<td>Hoarse voice</td>
<td></td>
</tr>
<tr>
<td>Sensation of throat closure</td>
<td></td>
</tr>
<tr>
<td>Stridor</td>
<td></td>
</tr>
<tr>
<td>Dry cough</td>
<td></td>
</tr>
<tr>
<td>Tachypnoea</td>
<td></td>
</tr>
<tr>
<td>Wheeze</td>
<td></td>
</tr>
<tr>
<td>Indrawing/retractions</td>
<td></td>
</tr>
<tr>
<td>Grunting and nasal flaring</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cardiovascular:</th>
<th>Reaction Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased central pulse</td>
<td></td>
</tr>
<tr>
<td>Capillary refill time greater than 3 sec</td>
<td></td>
</tr>
<tr>
<td>Tachycardia</td>
<td></td>
</tr>
<tr>
<td>Decreased or loss of consciousness</td>
<td></td>
</tr>
<tr>
<td>Dizziness</td>
<td></td>
</tr>
<tr>
<td>Syncope</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gastrointestinal:</th>
<th>Reaction Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea</td>
<td></td>
</tr>
<tr>
<td>Abdominal pain</td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td></td>
</tr>
</tbody>
</table>

| Other (describe): | |
|------------------| |

<table>
<thead>
<tr>
<th>Treatment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication Administered</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>EPINEPHrine Dose #1</td>
</tr>
<tr>
<td>EPINEPHrine Dose #2</td>
</tr>
<tr>
<td>EPINEPHrine Dose #3</td>
</tr>
</tbody>
</table>

Code Team/Paramedics called:  
  - Yes – time arrived: _ __ _ __ _ _ _ _ _ _ _ _  
  - No

Additional Information:

Name of Recorder(s): ______________________________ Signature: ______________________________

Name of Recorder(s): ______________________________ Signature: ______________________________
ANAPHYLAXIS TREATMENT WORKSHEET

Patient Label
NAME: ____________________________
HSN: ____________________________
D.O.B.: ___________________________

Anaphylactic Symptom Definitions

Angioedema: Swelling caused by edema in the deeper skin and/or mucosal tissue in either single or multiple sites which may not be well circumscribed and is usually not itchy.

Capillary refill time: The time for normal skin colour to reappear after a blanching pressure is applied. Usually performed by pressing on the nail bed to cause blanching and then continuing the time for blood to return to tissue, indicated by a pink colour returning to the nail. Normal = 3 seconds or less.

Cyanosis: A bluish or purplish discolouration most easily seen in the facial or periocular area or tongue.

Decreased central pulse volume: Absent or decreased pulse on one of the following vessels – carotid, brachial, or femoral arteries.

Erythema: Abnormal redness of the skin without any raised skin lesions.

Stridor: An abnormal, high-pitched, musical breathing sound caused by a blockage in the throat or voice box (larynx). It is usually when taking in a breath.

Tachycardia: A heart rate that is abnormally high for age and circumstance.

<table>
<thead>
<tr>
<th>Age</th>
<th>Heart Rate – upper limit (beats/minute)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants and Children</td>
<td></td>
</tr>
<tr>
<td>&lt;1 year</td>
<td>160</td>
</tr>
<tr>
<td>1 to 2 years</td>
<td>150</td>
</tr>
<tr>
<td>2 to 5 years</td>
<td>140</td>
</tr>
<tr>
<td>5 to 12 years</td>
<td>120</td>
</tr>
<tr>
<td>&gt;12 years</td>
<td>100</td>
</tr>
<tr>
<td>Adults and Adolescents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;100</td>
</tr>
</tbody>
</table>

Tachypnea: Abnormally fast breathing.

Urticaria: Hives. Raised, itchy areas of skin that are usually a sign of an allergic reaction. Hives can be rounded or flat topped, but are always elevated above the surrounding skin. They reflect circumscribed dermal edema (local swelling of the skin). The hives are usually well circumscribed, but may be coalescent and will blanch with pressure.

Uvula: The anatomic structure that dangles downward at the back of the mouth and is attached to the rear of the soft palate.