EMERGENCIES

General Information:
LHDs must be able to respond to a range of medical emergencies, potentially violent or abusive situations, and facility or natural/weather related emergencies. Staff must be familiar with emergency supplies and equipment and trained in their use, as appropriate.

Procedures for non-medical emergencies such as fire, tornadoes/severe weather conditions, earthquakes, and bomb threats shall be addressed in the LHD's Emergency Evacuation and Fire Prevention Control Procedures Plan. Training is to occur on at least an annual basis. For further information, refer to the Administrative Reference, Vol. I, Section VIII-LHD Operations for LHDs. (Also see the Disaster Recovery and Response Plan Manual).

MEDICAL EMERGENCIES

LHDs should be prepared for medical emergencies, particularly, life-threatening drug reactions. Established procedures, adequate and properly maintained equipment, and appropriately trained staff are essential.

- Protocols for emergency care for anaphylactic reactions, and management of vasovagal reactions and syncope should be signed by a local physician and a copy kept with the emergency supplies.
- If the LHD stocks an Automated External Defibrillator (AED) device, they must develop and maintain local policies on its use and maintenance.
- LHD prepared for more extensive emergency measures should have a locally developed protocol in place to guide staff.
- Emergency equipment, supplies, and medications should be maintained on a crash cart or emergency tray.
- An inventory list is to be kept with the crash cart or emergency tray and monitored monthly according to an established schedule to ensure that they are not depleted or expired. Emergency supplies should be sealed when not in use.
- All physicians, clinicians and nurses should be certified in CPR
- All staff should be offered the opportunity to participate in CPR training
- At a minimum, all staff must know their role in an emergency situation.
- All staff should have access to the Poison Control phone number, 1-800-222-1222, and it should be posted in a prominent place.

EMERGENCY EQUIPMENT, SUPPLIES, AND MEDICATIONS

Inventory List*

(When Equipment and Supplies are replaced, LHDs should order Latex-free.)

- AMBU bag – at least 1 Adult and 1 Pediatric unit (Latex-free), checked for physical integrity at least monthly and replace per manufacturer's recommendations.
- One-way masks – small, medium, large; latex-free
- Sphygmomanometer, age appropriate, ex. pediatric, adult, extra-large – serviced according with manufacturer's recommendations
- Stethoscope
- Flashlight and extra batteries
- Oxygen tank with mask (serviced yearly and checked monthly)
- Syringes and needles of various sizes, including filtered needles for use with ampoules (for the removals of minute particles of glass, filtered needles are not to be used for administration.)
- Alcohol swabs or sponges
- Gloves, latex-free
- Aqueous epinephrine (1:1000; 1mL ampoules, at least 4 but more for medically isolated clinics)
- Diphenhydramine hydrochloride (Benadryl) Liquid; Diphenhydramine hydrochloride (Benadryl) 50 mg/mL vials (a minimum of 4)
- Atropine sulfate ampoules 0.4 mg/mL (optional)
- Aromatic ammonia (optional)
- Poison Control phone number 1-800-222-1222
  http://www.aapcc.org/findyourcenter.htm

  Kentucky Regional Poison Center
  Medical Towers South, Suite 847
  234 East Gray Street
  Louisville, KY 40202
  Emergency Phone: (800) 222-1222
  http://www.krpc.com/
- Emergency equipment, supplies and medications inventory list with log of monthly reviews/inventory
- Emergency protocols signed by a local physician

*A copy of the Emergency Equipment, Supplies, and Medications list is to be placed on the crash cart, emergency tray or off-site emergency kits with a copy of the current signed protocols.

LHDs may develop modified equipment lists and protocols for alternate service delivery sites. These should, at a minimum, include Benadryl and epinephrine, as well as access to a phone to summon emergency personnel (911).

Modified emergency and anaphylactic shock protocols may be developed locally for off-site service.

MEDICAL EMERGENCIES PROTOCOL*

For various reasons in a LHD setting, a patient may complain of feeling "light headed", "faint", or actually "passing out". This may be as simple as a reaction to certain sensory stimuli, real or perceived pain, or sudden changes in position or as severe as an acute medical condition, such as cardiac or other life threatening conditions.

Condition	Intervention
Syncope/Vasovagal Reaction "light headed – fainting" Response to patient is usually immediate when measures are taken.	• ABC's (Airway, Breathing, Circulation) • Place patient in supine position and loosen clothing. • Elevate lower extremities 20–30 degrees. • Monitor and record BP, pulse and respirations. • Document all findings and actions in patient's medical record. • Question patient after episode about feelings prior to syncope and whether this is an isolated event or "usual response" to certain stimuli. • Advise patient to report this to physician for further investigation.
Suspected Severe, Acute Medical Condition	• ABC's • Call for staff assistance • Maintain **AIRWAY**, provide **CPR** if necessary o Place patient in supine position and loosen clothing. o Monitor and record vital signs. • Call 911 or local Emergency Medical Services immediately (have person not involved in direct care to call).

*Place a copy of this protocol on the crash cart, emergency tray with the Emergency Equipment, Supplies and Medications Inventory List and the Treatment of Anaphylactic Shock Protocol. Modified emergency and anaphylactic shock protocols may be developed locally for off-site service.

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M.D. Signature Date

TREATMENT OF ANAPHYLACTIC SHOCK PROTOCOL*

Definition: Anaphylactic shock is a generalized hypersensitivity and potentially fatal reaction occurring within seconds to minutes after exposure to an antigen. Common causes are penicillin and other antibiotics; biologicals, such as serums, vaccines, tetanus, toxoid; injectable or oral medications; insect bites or stings; foods; allergy extracts; latex exposure; blood transfusions; narcotics, etc. Reactions can range from mild to severe.

<table>
<tr><th>Condition</th><th>Observation/Assessment</th><th>Intervention</th></tr>
<tr><td>MILD REACTION</td><td>• Generalized flush
• Urticaria (hives)
• Sneezing</td><td>
• ABC's
• Monitor pulse and respiration.
• Monitor BP – age 3 years and up
• Continue to observe/ monitor symptoms for change (lessening or worsening).
Dosages for Diphenhydramine hydrochloride (Benadryl) – given orally
Liquid Diphenhydramine hydrochloride (Benadryl) has 12.5 mg per 5 mL
• Adults: 25 mg (10 mL) up to 50 mg (20 mL)
• Child: 1 to 2 mg/kg – given orally
<table>
<tr><td>Wt/Kg:</td><td>11 lbs/5kg</td><td>22 lbs/10 kg</td><td>44 lbs/20 kg</td><td>66 lbs/30 kg or higher</td></tr>
<tr><td>Dose:
1 mg/kg</td><td>2 mL (5 mg)</td><td>4 mL (10 mg)</td><td>8 mL (20 mg)</td><td>12 mL (30 mg)</td></tr>
<tr><td>Up to 2 mg/kg</td><td>Up to 4 mL
(Up to 10 mg)</td><td>Up to 8 mL
(Up to 20 mg)</td><td>Up to 16 mL
(Up to 40 mg)</td><td>Up to 20 mL
(Up to 50 mg)
Max dose</td></tr>
</table>
Dosages for Diphenhydramine hydrochloride (Benadryl) Intramuscular:
• Adult: Benadryl 50 mg IM;
• Child: Benadryl IM, 1 to 2 mg/kg, using the following dosage guidelines:
<table>
<tr><td>Wt/Kg:</td><td>11 lbs/5 kg</td><td>22 lbs/10 kg</td><td>44 lbs/20 kg</td><td>66 lbs/30 kg</td><td>88 lbs/40 kg</td></tr>
<tr><td>Dose:
1 mg/kg</td><td>0.1 mL</td><td>0.2 mL</td><td>0.4 mL</td><td>0.6 mL</td><td>0.8 mL</td></tr>
<tr><td>Up to
2 mg/kg</td><td>Up to
0.2 mL</td><td>Up to
0.4 mL</td><td>Up to
0.8 mL</td><td>Up to 1 mL
Max dose</td><td>Up to 1 mL
Max dose</td></tr>
</table>
• Use Benadryl 50 mg/mL vial to obtain these fractional dosages.
• Wait 12–20 minutes. If improved, dismiss to home with these instructions:
o Adult: Benadryl 50 mg p.o. q 6h x 2 days
o Child > 20 lb.: Benadryl Liquid 5 mg/kg/24 hours (1.25 mg/kg/dose p.o. q 6h) x 2 days
The dose of Diphenhydramine (Benadryl) given for anaphylaxis should be 1 to 2 mg/kg given IM, IV, or orally, with a maximum dose of 50 mg (Harriett Lane Handbook, 17th ed, p. 9).
</td></tr>
</table>

*Place a copy of this protocol on the crash cart, emergency tray with the Emergency Equipment, Supplies and Medications Inventory List and the Treatment of Anaphylactic Shock Protocol. Modified emergency and anaphylactic shock protocols may be developed locally for off-site service.

M.D. Signature Date

TREATMENT OF ANAPHYLACTIC SHOCK PROTOCOL*

(continued)

<table>
<tr><th>Condition</th><th>Observation/Assessment</th><th>Intervention</th></tr>
<tr><td>MODERATE REACTION</td><td>• Mild to moderate wheezing
• Coughing
• Complains of generalized itching, itching throat
• Swelling of lips
• Lack of response to Benadryl</td><td>• ABC's
• Call 911
• Monitor vital signs.
• Continue to observe symptoms for change (lessening or worsening)
• If patient has not improved in 15–20 minutes, OR if symptoms warrant it sooner:
o Give oxygen by mask
o Special instructions** for O2 administration
_____
** Oxygen flow rates, particularly for infants and children, depend upon the equipment available. Local health departments should annotate protocols with the flow rates appropriate for local equipment.
Please see this American Association of Respiratory Care online reference, http://www.aarc.org/resources/protocol_resources/documents/AARCpedO2.pdf

Dosages for Intramuscular epinephrine:
Epinephrine 1:1000 (aqueous): 0.01 mL/kg per dose repeated every 10–20 min.
When body weight is not known, the dosage of epinephrine 1:1000 can be approximated from the subject's age as follows***:
Age: — Usual Dose:
Infant (0–12 mo.) — 0.05–0.1 mL
Children (13 mo.–10 yrs.) — 0.1–0.3 mL (upper arm)
Adolescents (11 yrs.–18 yrs.) — 0.3–0.5 mL (upper arm)
Adult — 0.3 to 0.5 mL
• If symptoms are not resolved, but are not worsening:
o Repeat epinephrine dose q10–20 minutes up to two (2) more times (total of 3 max)
• Advise patient (parent) about the drug or product that caused reaction.
• Advise patient (parent) to report reaction to physician.
• Document all measures taken in patient's medical record and place allergy label on front of patient's medical record.
***See Additional Reference and Alternative Table for Dosages for Intramuscular Epinephrine.</td></tr>
</table>

* Place a copy of this protocol on the crash cart, emergency tray with the Emergency Equipment, Supplies and Medications Inventory List and Medical Emergencies Protocol. Modified emergency and anaphylactic shock protocols may be developed locally for off-site service.

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M.D. Signature Date

TREATMENT OF ANAPHYLACTIC SHOCK PROTOCOL*

(continued)

<table>
<tr><th>Condition</th><th>Observation/ Assessment</th><th>Intervention</th></tr>
<tr><td>SEVERE REACTION</td><td>

Anxiety
Shortness of Breath
Severe Wheezing
Restlessness
Headache
Vomiting
Shock
Cyanosis
Confusion
Incontinence
Weak rapid pulse
Hypotension
Unconsciousness

</td><td>

ABC’s
Monitor pulse and respiration, mental status q 1–2 minutes.
Monitor BP – age 3 years and up
Call 911 or local EMS STAT (Have someone not involved in direct patient care make the call).
GIVE OXYGEN BY MASK (Maintain airway – hypoxia can result from hypotension and upper airway edema).

Special Instructions** for O_2 administration _____

**Oxygen flow rates, particularly for infants and children, depend upon the equipment available. Local health departments should annotate protocols with the flow rates appropriate for local equipment. Please see this American Association of Respiratory Care online reference, http://www.aarc.org/resources/protocol_resources/documents/AARCpedO2.pdf

Dosages for Intramuscular Epinephrine:
<table>
<tr><td colspan="2">Epinephrine 1:1000 (aqueous): 0.01 mL/kg per dose
Repeat every 5–10 min. up to 3 times as needed
When body weight is not known, the dosage of epinephrine 1:1000 can be approximated from the subject’s age as follows***:</td></tr>
<tr><th>Age:</th><th>Usual Dose:</th></tr>
<tr><td>Infant (0–12 mo.)</td><td>0.05–0.1 mL</td></tr>
<tr><td>Children (13 mo.–10 yrs.)</td><td>0.1–0.3 mL (upper arm)</td></tr>
<tr><td>Adolescents (11 yrs.–18 yrs.)</td><td>0.3–0.5 mL upper arm)</td></tr>
<tr><td>Adult</td><td>0.3 to 0.5 mL</td></tr>
</table>

Place patient in supine position.
Elevate legs and loosen clothing.
Elevate head, if breathing is difficult.
Maintain accurate emergency flow sheet showing:

Date
Time of occurrence
Vital Signs
Medication(s)
Immediate therapy
Disposition of patient (transfer for further emergency care ASAP)

Send summary of emergency treatment with patient with written assessment of patient’s condition at time of transfer.
Document all measures taken in patient’s medical record and place allergy label on front of patient’s medical record.

***See Additional Reference and Alternative Table for Dosages for Intramuscular Epinephrine.
</td></tr>
</table>

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M.D. Signature Date

TREATMENT OF ANAPHYLACTIC SHOCK PROTOCOL*

(continued)

Additional Reference and Alternative Table for Dosages for Intramuscular Epinephrine:
http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/95vol21/dr2122ea.html

Epinephrine 1:1000 (aqueous): 0.01 mL/kg per dose Repeat every 5–10 min. up to 3 times as needed **When body weight is not known, the dosage of epinephrine 1:1,000 can be approximated from the subject's age as follows**	
Age	Dose
2 to 6 months*	0.07 mL
12 months*	0.1 mL
18 months* to 4 years	0.15 mL
5 years	0.2 mL
6 - 9 years	0.3 mL
10 - 13 years	0.4 mL
>= 14 years	0.5 mL
* Dosage for children between the ages shown should be approximated, choosing dose volumes intermediate between those shown or the next larger dose, depending on practicability.	

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M.D. Signature Date