Vaccine Storage and Handling Guidelines
Emergency/Disaster Recovery Plan

This document offers guidance for developing proper vaccine storage and handling, vaccine disaster recovery procedures and steps to follow during a mechanical failure or natural disaster.

I. Vaccine Storage and Handling Guidelines:
   A. Designated Person(s)
      Designate a primary and a back-up person to:
      1. monitor the operation of the vaccine storage equipment and systems;
      2. set up and maintain a monitoring/notification system during times of inclement weather or other conditions that would create a shut down in power; and
      3. assure the appropriate handling of the vaccine during the disaster or power outage.

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<th>Practice Name:</th>
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<td>Primary Person Responsible:</td>
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<td>Secondary Person Responsible:</td>
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<td>Person with 24 hour access:</td>
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B. Storage Requirements
   Maintain proper temperatures in the refrigerator (2-8° C or 35-46° F) and in the freezer (-15° C or 5° F or colder). To maintain even temperatures place plastic containers of water in the refrigerator and cold packs in the freezer. Store vaccine on refrigerator shelves in open containers to allow proper air circulation around the vaccine. Vaccine should never be stored in the door of the refrigerator, vegetable containers/bins (crisper) or on the bottom of the refrigerator.

C. Equipment Safeguard
   Post warning signs on the refrigerator and/or on the plug to prevent inadvertent unplugging of the unit. Label fuses and circuit breakers to clearly identify power source to vaccine storage unit. Assure doors are shut tightly.

D. Receiving Vaccine
   Develop and post a protocol for accepting vaccine deliveries to ensure that vaccines are refrigerated IMMEDIATELY after arrival. Document who may accept vaccine deliveries and train staff on how to compare the vaccine received with the vaccine invoice. Alert the Vaccines for Children Program (VFC) at 1-800-831-6293 if the vaccine is not in proper condition or the number of doses is different than what is on the invoice. Train staff on storage and handling requirement for each vaccine.
E. **Rotate Stock**
Ensure that vaccine with the most current expiration dates are used first and are in front of vaccines with longer expiration dates. Check and rotate your stock weekly.

F. **Temperature Monitoring**
The designated person should check and record refrigerator and freezer temperatures at least twice daily at the beginning and end of each day and during possible conditions for power outages. Establish a system to check the vaccine and assure the power supply during weekends and holidays. The protocol should include the specific methods and criteria for notifying the designated person(s) of problems. Storage temperatures should be recorded on a temperature log and maintained for at least 3 years. This is useful in identifying the duration of temperature variations. The backup person should review the temperature log on a weekly basis to assure proper temperature recording. If a temperature outside of the recommended range is found, immediate action should be taken to correct the problem as outlined in Section II.

G. **Vaccine Special Instructions**
Review the current guidelines for handling of individual vaccines that may include special instructions (i.e., protect from light, shelf life after reconstitution). Package inserts should always be your primary reference source. Understand package inserts for new vaccines before using. Additional references include "Vaccine Management: Recommendations for Handling and Storage of Selected Biologicals" produced by the Centers for Disease Control and Prevention (CDC). (Pinkbook, Appendix D4)

H. **Back-Up Supplies/ Facility**
If you do not have a back-up generator, identify a location with one. This may be the local hospital, retirement home, fire station or an employee's home. Make arrangements with the site to store your vaccine if your vaccine storage equipment malfunctions or there is a power outage. Before moving your vaccine, call the location to ensure that their back-up generator is working. In situations where a location with a back-up generator can not be identified within a reasonable distance, preparations should be made to have coolers, frozen ice packs and/or dry ice to temporarily and safely store your vaccine.

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<tr>
<th>Back-up Facilities</th>
<th>Practice Name and Telephone</th>
<th>Primary and Back-up Contact</th>
<th>Telephone (Home)</th>
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I. Emergency Contact List
List of emergency phone numbers, companies, and points of contact:
1. Electric Power Company: _____________________________
2. Temperature Alarm Monitoring Company: _____________________________
3. Refrigerator Repair Company: _____________________________
4. Transportation to Backup Storage: _____________________________
5. Dry Ice Vendor: _____________________________
6. Emergency Generator Repair Company: _____________________________
7. National Weather Service: _____________________________

J. Facility Floor Plan
Entering vaccine spaces: Describe, when necessary, how to enter the building and vaccine storage spaces in an emergency if closed or after hours. Include a floor diagram and the locations of:
1. Doors
2. Flash lights
3. Spare batteries
4. Light switches
5. Keys
6. Locks
7. Alarms
8. Location of all storage units in facility
9. Circuit breakers
10. Packing materials

II. STANDARD OPERATING PROCEDURE IN THE EVENT OF IMPROPER VACCINE STORAGE

A. Train Staff/Post Information
Post your Vaccine Disaster Recovery plan on or near the vaccine storage equipment. Ensure that all staff read the plan.

B. Assess the Situation
1. Improper vaccine temperatures due to mechanical failure, power outage or natural disaster.
2. Verify the storage temperature is within the specified target range (refrigerator 2-8° C or 35-46° F / freezer -15° C or 5° F or colder).
3. If storage temperatures are not within the specified target range keep all refrigerator and freezer doors closed. This will help maintain the temperature of the storage unit.

C. Mechanical Failure/ Improper Temperature
1. Alternate On-site Storage
   a. If alternative storage is available within your facility transfer vaccine to that storage unit.
   b. Prior to transporting vaccine, record the temperature of the refrigerator(s) and freezer(s). This will provide data on the maximum temperature and duration of exposure to inappropriate temperatures.
c. Conduct an inventory before you transport the vaccine.
d. Transport the vaccine following proper cold chain procedures for storage and handling.
e. Isolate and maintain vaccines at appropriate temperatures and do not administer or discard vaccine until you have contacted the Iowa Immunization Program (1-800-831-6293) for consultation.

2. Alternate Off-Site Storage
   a. Contact your back up facility (as identified on page 3) to notify them of your refrigerator failure and the need to store vaccine at their location.
   b. Prior to transporting vaccine, record the temperature of the refrigerator(s) and freezer(s). This will provide data on the maximum temperature and duration of exposure to inappropriate temperatures.
   c. Conduct an inventory before you transport the vaccine.
   d. Transport the vaccine following proper cold chain procedures for storage and handling.
   e. Isolate and maintain vaccines at appropriate temperatures and do not administer or discard vaccine until you have contacted the Iowa Immunization Program (1-800-831-6293) for consultation.

3. Power Outage/ Natural Disaster
   a. If the building has lost electrical power, check with building maintenance to ensure that the generator is operational and has been activated.
   b. Keep all refrigerator and freezer doors closed. This will help maintain the temperature of the storage unit.
   c. Do not open units to check temperatures during the power outage. Instead, record the temperatures as soon as possible after the power is restored, and note the duration of the outage. This will provide data on the maximum temperature and duration of exposure to inappropriate temperatures. Continue to monitor the temperatures until the appropriate temperature is reached (2–8°C / 35-46°F in the refrigerator, -15°C / 5°F or less in the freezer).
   d. Contact your back up facility (as identified on page 3) to notify them of your refrigerator failure and the need to store vaccine at their location.
   e. If alternative storage with reliable power sources is available (i.e., hospital with generator power), transfer to that facility can be considered.
   f. Prior to transporting vaccine, record the temperature of the refrigerator(s) and freezer(s). This will provide data on the maximum temperature and duration of exposure to inappropriate temperatures.
   g. Conduct an inventory before you transport the vaccine.
   h. Transport the vaccine following proper cold chain procedures for storage and handling.
i. Maintain vaccines at appropriate temperatures and do not administer or discard any potentially exposed vaccine until you have contacted the Iowa Immunization Program (1-800-831-6293) for consultation.

D. Packing Procedures
1. Open refrigerated units only when absolutely necessary and only after you have made all preparations for packing and moving the vaccine to alternative storage sites.
2. Conduct an inventory before you transport the vaccine.
3. Use properly insulated containers.
4. Pack the refrigerated vaccines first with an adequate supply of cold packs (add packing material so that cold packs are not in direct contact with the vaccine).
5. Remove and pack the varicella vaccine, using dry ice, immediately before it is to be transported.
6. Post Event: Following the event and the availability of proper storage at your facility, transport the vaccine back to your facility using proper storage and handling procedures.

E. Post Event
1. Keep exposed vaccine separated from unaffected product and any new product you receive. Maintain vaccines at appropriate temperatures and do not administer or discard any potentially exposed vaccine until you have contacted the Iowa Immunization Program (1-800-831-6293) for consultation.
Vaccine Manufacturers
Contact Information

Aventis Pasteur:  1-800-822-2463
www.us.aventispasteur.com

Bayer:  1-800-288-8371
www.bayer.com

Berna:  1-800-533-5899
www.bernaproducts.com

Chiron:  1-800-244-7668
www.chiron.com
www.rabavert.com

Evans:  1-800-200-4278
www.powderject.com/evanscontract/index2.html

GlaxoSmithKline:  1-888-825-5249
www.gskvaccines.com

MedImmune:  (877) 633-4411
www.aviron.com/products/index.asp

Merck:  1-800-672-6372
www.merckvaccines.com

Nabi:  1-800-458-4244
www.nabi.com

Wyeth Lederle:  1-800-999-9384
www.vaccineworld.com/wv_home.asp