

The [Centers for Disease Control and Prevention Vaccine Storage and Handling Toolkit](#) suggests that all practices have a plan in place for keeping vaccine supply safe during a power failure or other disaster.

The Centers for Disease Control and Prevention (CDC) requires that Vaccine for Children (VFC) providers develop and follow a written emergency vaccine storage and handling plan. This plan should be simple and the process outlined in the plan should be clear and concise.

#### Key Points:

- An emergency plan is needed to keep your vaccine stored safely at all times to prevent loss.
- Post the emergency plan in a prominent place where staff can find it easily.
- Update the plan annually.
- As part of your emergency plan, include a designated place you can take vaccines for safe storage during an emergency.
- Be sure you have all the equipment necessary on hand to carry out your plan.
- Once power is restored, do not discard vaccines that have been exposed to temperature excursions. Call your VFC coordinator or the manufacturer for guidance.

#### Remember!

Comprehensive vaccine management protocols will help practice staff address future vaccine supply challenges (i.e., vaccine shortages or supply allocations) and help ensure appropriate vaccine handling procedures throughout the years.

### Why is a written emergency vaccine storage and handling plan needed?

In order to maintain potency and efficacy of vaccine products, they must be stored at the temperatures specified by the manufacturer at all times. The following events may jeopardize your practice's ability to maintain vaccine at the appropriate temperature:

- Storage unit malfunction
- Power outages
- Natural disasters
- Other emergencies





A written plan that specifies actions to take when faced with these situations will allow your practice to proceed most efficiently in protecting vaccine stock.

### Steps to take before the emergency

- Designate primary and alternate vaccine coordinators with emergency contact information. In addition to routine vaccine storage activities, coordinators should:
  - monitor the operation of the vaccine storage equipment and systems;
  - track inclement weather conditions;
  - set up and maintain a monitoring/notification system during times of inclement weather or other conditions that might cause a power outage (a continuous-monitoring temperature alarm/notification system should be considered, especially for facilities with large inventories, see [AAP Data Loggers and Vaccine Monitoring](#);
  - post emergency contact information on circuit breaker(s) or electrical panel;
  - manage the appropriate handling of vaccine during a disaster or power outage;
  - verify 24-hour access to the building and vaccine storage unit(s).
- Secure backup energy source (generator).
  - Maintain sufficient fuel supply to continuously run the generator for at least 72 hours.
- Have your written emergency vaccine storage and handling plan posted where staff can easily find it, preferably near the vaccine storage units.
- Provide staff access to up-to-date phone numbers for vaccine distributors, vaccine manufacturers, and VFC Coordinators.
- Verify all staff have read and understand the emergency vaccine storage and handling plan.
- List the name and contact information of a local refrigeration repair shop that could potentially fix a failed unit.
  - Maintain a list of vaccine storage unit specifications (brand name, model number, and serial number) to provide to the repair technician.

### Developing your emergency plan:

- Designate an alternate site with 24-hour access where vaccines and diluents can be safely stored.
  - Considerations when choosing a site include types of:
    - storage unit(s) available
    - temperature monitoring capabilities
    - back-up generator
  - Potential back-up locations include:
    - local hospitals and health departments
    - another provider's facility
    - retail or clinic pharmacies
    - long-term care facilities
    - the Red Cross.
- Develop written protocols and list of vehicles and drivers for transporting vaccines to and from the alternate vaccine storage facility.



# AAP Immunization Resources

## Storage and Handling Series

### Disaster Planning

- Obtain and store an adequate number of appropriate packing containers and materials (e.g., polystyrene coolers, frozen water bottles, bubble wrap) in the facility from which vaccines will be packed for safe transport.
  - Safe transport tips are described in the [CDC Packing Vaccines for Transport during Emergencies](#).
  - Communicate to staff where everything is kept.
  - Include written directions for packing vaccines and diluents for transport.
  - A pre-chilled, calibrated thermometer and data logger should be placed in each packing container.

### Sample activities to include in your emergency plan:

- Incorporate written procedures for managing potentially compromised vaccines.
- Include contact information for vaccine manufacturers and/or the VFC Coordinators.
- Include written instructions for entering your facility and vaccine storage spaces in an emergency if the building is closed. These instructions should include:
  - the building security/after-hours access procedure,
  - a floor diagram,
  - and the locations of the following:
    - Alarms (including instructions for use)
    - Doors
    - Flashlights
    - Spare batteries
    - Light switches
    - Keys
    - Locks
    - Circuit breakers
    - Packing materials

### During a power outage:

- Do not open freezers and refrigerators, except to transport vaccine to an alternative storage location, if alternative storage with reliable power is available. Refrigerators will generally be warmer than **8°C** **46°F** within 3 hours of a power outage. If it is likely for the power to be off for more than 3 hours, plan on moving the vaccine to a safer location or for refrigerated vaccine, consider “Shelter In Place” in hard sided coolers or shipping containers cooled with conditioned frozen water bottles and appropriate data logger as used in emergency transportation.
- Always carefully follow proper transport protocols (see CDC [Packing Vaccines for Transport during Emergencies](#)) and include them in your plan.
- Continue to monitor temperatures. If possible, do so without opening the door.
- After the event, do not discard vaccine that has been warm. Most vaccines are relatively heat tolerant. Immediately segregate all compromised vaccine in a container or bag and place refrigerated vaccine between **2°C and 8°C** **36°F and 46°F** and frozen vaccine at **≤ -15°C** **≤ +5°F**. Mark “DO NOT USE”.
- Call vaccine distributors and VFC Coordinators to cancel any upcoming vaccine deliveries.



#### Once power is restored:

- Record the temperature in the vaccine storage unit as soon as possible, after the power has been restored. Continue to monitor and record. It can take a domestic refrigerator 4-8 hours to cool below **8°C** **46°F**. Verify the unit reaches the proper **2°C to 8°C** **36°F to 46°F** range prior moving the vaccine back to the unit. Record temperature and download the data from the logger in the vaccine storage unit after conditions stabilized.
- Record the duration of any temperate excursions observed.
- Separate any vaccine product exposed to temperature excursions from vaccine that was not exposed, but store the compromised vaccine in the proper temperature range until final dispensation. Mark "DO NOT USE".
- Do not administer or discard any vaccine that has been exposed to temperature excursions until speaking with the proper authorities.
  - Call your VFC Coordinator to report the event and ask for advice on handling the compromised vaccine. You should also report any privately purchased compromised vaccine directly to the appropriate manufacturers. It is possible that your VFC Program and the manufacturer may have differing guidance, and you may have to clarify with both parties which is the most appropriate.
  - If instructed that private vaccine should not be administered, discuss returning the vaccine for a credit with the vaccine manufacturer.
  - Document the event, the calls, and the corrective action taken in your vaccine log book. To learn more about what should be recorded in a log book and regular vaccine storage and handling tasks, please see the [AAP Storage and Handling Checklist](#).
- Notify vaccine distributors or VFC Coordinator to resume vaccine deliveries.

#### Resources:

- [AAP Storage and Handling Web page & resources](#)
- [CDC Vaccine Storage and Handling Recommendations and Guidelines](#)
- [CDC Vaccine Storage and Handling Toolkit](#)
- [CDC Packing Vaccines for Transport during Emergencies](#)
- [Immunization Action Coalition Emergency Response Worksheet](#)