

# National vaccine storage guidelines – APPENDIX 7 – Checklist for emergency storage in the event of power or PBVR failure

Your PBVR may warm quickly during a power failure, depending on the quality, design and the ambient temperature of your facility. You may need to contact the manufacturer to establish this time period.

Step	What to do	Done ✓/X
1	Immediately isolate the vaccines and keep them refrigerated in the PBVR between +2°C and +8°C. Leave the vaccines in the PBVR with the door closed. Put a sign on the PBVR door stating: 'POWER OUT / DO NOT USE VACCINES / DO NOT OPEN DOOR.'	<input type="checkbox"/>
2	Closely monitor the PBVR temperature. Ensure that the display of the minimum/maximum thermometer is outside the PBVR so that readings can be obtained without opening the PBVR door.	<input type="checkbox"/>
3	Immediately begin to condition ice packs/gel packs as per Section 8.2. Begin this process even if you have been informed that the power will return shortly.	<input type="checkbox"/>
4	Place additional ice packs/gel packs in a cooler to pre-chill the cooler.	<input type="checkbox"/>
5	If the minimum/maximum thermometer shows that the temperature of the PBVR is outside the recommended +2°C to +8°C range, you must contact your state or territory health department for advice before transferring vaccines to the cooler. If unable to read the thermometer, transfer vaccines as soon as ice packs/gel packs are conditioned.	<input type="checkbox"/>
6	Pack the cooler as per Section 8.3. Place the probe of the minimum/maximum thermometer in the cooler and the display outside the cooler.	<input type="checkbox"/>
7	Monitor and record the cooler temperature every 15 minutes for the first 2 hours, then at least hourly (provided the temperatures are stable).	<input type="checkbox"/>
8	Ensure that a data logger is placed directly next to vaccines in the cooler.	<input type="checkbox"/>
9	Do not open the cooler until vaccines can be transferred to a PBVR.	<input type="checkbox"/>
10	If more suitable vaccine storage is available (e.g. at a hospital with an essential power generator), transfer vaccines in a cooler to the more suitable option. Ensure that the data logger always stays with the vaccines.	<input type="checkbox"/>
11	<b>If you know that power will be out for more than 24 hours, consider transferring vaccines to alternative vaccine storage, if available, at the nearest facility with power.</b>	<input type="checkbox"/>

The following support systems may assist in managing a power failure:

- Some power networks provide timely power outage alerts to registered customers by text message or email.
- An automated monitoring system can be installed in PBVRs. This system sends an electronic alert to designated phone number/s outside business hours if the PBVR temperature deviates outside the +2°C to +8°C range. The alerted staff member can act outside business hours if it is safe to do so and may be able to prevent vaccine losses. More importantly they can also prevent the

administration of potentially compromised vaccines to patients by alerting staff to a potential cold chain breach the next business day.

- A separate battery-operated minimum/maximum thermometer can assist in continuously monitoring PBVR temperatures. During a power failure, not all PBVRs continue to display the current temperature.

## Alternative vaccine storage

In the event of a power failure, an alternative means of monitored vaccine storage is recommended to allow vaccines to continue to be stored between the recommended temperature range of +2°C to +8°C, thereby minimising vaccine loss and disruption to businesses. The recommended options may include any of the following:

- A back-up power supply (e.g. generator or battery/solar back-up).
- A monitored PBVR offsite (e.g. local hospital or pharmacy).
  - Ensure that an agreement has been put in place with the relevant organisation before the event.
  - Also consider that this organisation may be affected by the same power failure.
- A cooler.
  - Ensure that the cooler is large enough to accommodate:
    - All vaccines and ice packs or gel packs, as well as insulating material (e.g. polystyrene chips or bubble-wrap. **DO NOT USE PAPER TOWEL OR CARDBOARD.**
    - A minimum/maximum thermometer or data logger.
    - A cold chain monitor.
  - Pack the cooler as per Section 8.3.
  - Monitor and record the temperature every 15 minutes for the first 2 hours, then at least hourly (provided the temperatures are stable).

## When the power is returned

Step	What to do	Done ✓/X
1	Record the PBVR temperature and reset the minimum/maximum thermometer.	<input type="checkbox"/>
2	Ensure that the PBVR temperature has returned to between +2°C and +8°C before returning vaccines.	<input type="checkbox"/>
3	Transfer vaccines to the PBVR.	<input type="checkbox"/>
4	If a data logger has been transported with vaccines, download the data before using any vaccines.	<input type="checkbox"/>
5	If the data show temperatures outside the +2°C to +8°C range, isolate vaccines, clearly mark them 'Do not use', and keep them refrigerated between +2°C and +8°C. If a cold chain breach has occurred, report it to your state or territory health department. Include all the information outlined in <a href="#">Appendix 3</a> 'Cold chain breach protocol'.	<input type="checkbox"/>
6	Continue to monitor the PBVR closely (e.g. hourly) to ensure that the temperature is consistently stable, then return to twice daily monitoring.	<input type="checkbox"/>