

APPENDIX 9:

Checklist for managing a power failure

Checklist for emergency storage (eg power or refrigerator failure)

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

If vaccines are at risk, use alternative monitored storage arrangements.

Step	What to do	Done <input checked="" type="checkbox"/> <input type="checkbox"/>
1	Immediately isolate the vaccines and keep them refrigerated between +2°C and +8°C. Leave the vaccines in the refrigerator with the door closed. Put a sign on the refrigerator door stating: 'Power out. Do not use vaccines. Keep refrigerator door closed.'	<input type="checkbox"/>
2	Closely monitor the refrigerator temperature. Ensure that the display of the minimum/maximum thermometer is outside the refrigerator so that readings can be obtained without opening the refrigerator door.	<input type="checkbox"/>
3	Immediately begin to condition ice packs/gel packs as per Section 9.2 of Strive for 5 . Begin this process even if you have been informed that the power will return shortly.	<input type="checkbox"/>

Step	What to do	Done <input checked="" type="checkbox"/> <input type="checkbox"/>
4	Place additional ice packs/gel packs in a cooler to pre-chill the cooler.	<input type="checkbox"/>
5	Transfer vaccines to the cooler when the minimum/maximum thermometer shows that the temperature of the refrigerator is outside the recommended +2°C to +8°C range. If unable to read the thermometer, transfer vaccines as soon as ice packs/gel packs are conditioned. Pack the cooler as per Section 9.3 of <i>Strive for 5</i> . If a minimum/maximum thermometer is available, place the probe in the cooler and the display outside the cooler.	<input type="checkbox"/>
6	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"/>
7	Ensure that a data logger is placed directly next to vaccines in the cooler.	<input type="checkbox"/>
8	Do not open the cooler until vaccines can be transferred to a purpose-built vaccine refrigerator.	<input type="checkbox"/>
9	If more suitable vaccine storage is available (eg at a hospital with an essential power generator), transfer vaccines in a cooler to the more suitable option. Ensure that the data logger stays with the vaccines at all times.	<input type="checkbox"/>
10	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.	<input type="checkbox"/>

Support systems that may assist you to manage 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 purpose-built vaccine refrigerators. This system sends an electronic alert to designated phone number(s) outside business hours if the refrigerator temperature deviates outside the +2°C to +8°C range. The alerted staff member can take action outside business hours if it is safe to do so and may be able to prevent vaccine losses. They can also prevent the administration of potentially compromised vaccines to clients 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 refrigerator temperatures. During a power failure, not all purpose-built vaccine refrigerators 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 (eg generator or battery/solar back-up)
- A monitored refrigerator offsite (eg 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

- > ice packs or gel packs
- > insulating material (eg polystyrene chips or bubble-wrap)
- > a minimum/maximum thermometer or data logger
- > a cold chain monitor.
- Pack the cooler as per [Section 9.3 of *Strive for 5*](#).
- 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 <input checked="" type="checkbox"/> <input type="checkbox"/>
1	Record the refrigerator temperature and reset the minimum/maximum thermometer.	<input type="checkbox"/>
2	Ensure that the refrigerator temperature has returned to between +2°C and +8°C before returning vaccines.	<input type="checkbox"/>
3	Transfer vaccines to the refrigerator.	<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 Appendix 3 'Cold chain breach protocol' of <i>Strive for 5</i> .	<input type="checkbox"/>
6	Continue to monitor the refrigerator closely (eg hourly) to ensure that the temperature is consistently stable, then return to twice-daily monitoring.	<input type="checkbox"/>