

This fact sheet summarises the most important requirements for maintenance of the vaccine cold chain. Please refer to the documents listed in the *Resources* section below for more in-depth information.

## What is the cold chain?

The cold chain is the process that ensures vaccines are stored at temperatures between +2°C to +8°C from the time of manufacture to the point of administration.

## Why is maintaining the cold chain important?

Vaccines are delicate biological substances. If exposed to temperatures above or below those recommended, vaccines may be irreversibly damaged and cannot be relied upon to provide the expected level of protection against the disease/s for which they were designed.

## Cold Chain Accreditation

All immunisation providers are required to achieve cold chain accreditation (or cold chain compliance if appropriate).

## Cold Chain Management Policy

- All immunisation providers must have a current and appropriate Cold Chain Management Policy. Refer to the policy template on the [Ministry of Health](#) and [IMAC](#) websites for guidance.
- Ensure a designated cold chain person and a second backup person are identified.
- Review and update this policy annually.

## Essentials for effective cold chain management

### People

- All clinical staff must ensure continuity of the cold chain.
- Designated cold chain management leads should be an authorised vaccinator, general practitioner or a pharmacist vaccinator.
- Your Immunisation or Cold Chain Coordinator.

### Resources

- The National Standards for Vaccine Storage and Transportation for Immunisation Providers 2017.
- Annual Cold Chain Management Guide and Record (ACCMGR).
- Current Immunisation Handbook.
- The provider's Cold Chain Management Policy.

## Vaccine refrigerator

- Store vaccines between +2°C to +8°C in a pharmaceutical fridge with a digital temperature monitoring display/device.
- The fridge will:
  - Be sited in a well-ventilated room.
  - Be protected from direct sunlight.
  - Have at least 4 cm but preferably 10 cm clearance from surrounding surfaces to allow adequate air circulation.
  - Be positioned in such a way that the door closes automatically.
  - Be wired into the wall socket or connected to an independent power point that:
    - is power surge protected,
    - has a notice which clearly states 'Do not turn off or disconnect this fridge', and
    - has the power plug taped over to prevent accidental removal/dislodgement.
  - Be serviced annually by an approved/licensed fridge technician.

- Have regular maintenance carried out and recorded by provider staff (refer to the ACCMGR). This includes regular checks for any build-up of ice on the back plate. If this occurs, ensure the fridge is adequately defrosted.
- Store only medicines and vaccines.
- The top of the fridge should be kept clear, except for the temperature records.

## Vaccine stock management

- Maintain a current vaccine register.
- Ensure a minimum level of 2 weeks and a maximum level of 4 weeks supply of vaccines is maintained.
- Have a documented process for receiving vaccines.
- Rotate the stock to ensure the vaccines with the closest expiry dates are used first.
- Store vaccines in their original packaging with the lids closed.
- Maintain a gap of at least 2–3 cm between the vaccine boxes and the fridge walls and back plate.
- Stack vaccine boxes in columns (not blocks) to allow optimum air circulation.
- Vaccines must not be stored on solid shelves, on the floor of the fridge, in plastic bags or in solid containers.
- Vaccines may be placed in containers or on trays providing these have holes in the sides and bottom to allow air flow.
- Do not overstock the fridge.

## Temperature monitoring

- The fridge must be monitored by a device that records minimum and maximum temperatures and displays the current temperature.
- If your vaccine fridge does not have a digital display that shows the min/max temperatures, you must have other equipment to do this, e.g. a digital thermometer and/or a data logger with a display.
- The minimum and maximum temperatures must be recorded in the ACCMGR every day the provider is open, preferably first thing in the morning.
- Clear and reset the memory after every daily reading.
- The fridge must be monitored by a data logger and the data downloaded at least weekly.
- Compare the ACCMGR and data logger readings. Be aware that these will not be exactly the same because they monitor different areas in the fridge.
- Write a monthly summary of the fridge performance in the ACCMGR.
- If you have a large fridge, it is recommended to move your data logger to a different shelf every month to allow monitoring of the whole interior space. Remember to note in your records which shelf the logger is monitoring.
- Electronic temperature monitoring equipment may be calibrated/validated every 12 months or as per the manufacturer's recommendations.
- Change the batteries every 1–2 years or as per the manufacturer's recommendation and document that this has been done.

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## Temperature monitoring (continued)

### National Cold Chain Audit (NCCA)

- A yellow sticker on the outside of a vaccine order alerts providers to the presence of a National Cold Chain Audit (NCCA) logger before the order is unpacked.
- A yellow instruction sheet explaining how to check the logger will be inside the order on top of the vaccines.
  - These instructions should be followed before unpacking the vaccines into the refrigerator.
  - The logger cannot be turned off by providers.
- The logger stays with the box of vaccine it is allocated to until either the last dose of vaccine is used or two weeks have passed, whichever occurs first.
- An addressed, prepaid courier envelope is provided for return of the logger to IMAC.
  - The logger is downloaded by IMAC once it has been returned to us.
- For more information, refer to the National Standards for Vaccine Storage and Transportation for Immunisation Providers 2017.

### Record keeping

- Use the ACCMGR to record temperature data and details of cold chain management. Keep this close to the fridge to allow access by all staff.
- Record all servicing and maintenance done.
- Record all actions taken by staff if the temperature goes outside the recommended range.
- Store all cold chain documents and records for 10 years.

## Managing cold chain problems

- Quarantine the vaccines
  - Leave vaccines in the fridge and label them 'Not for use' while appropriate advice is obtained.
- Check the digital thermometer, and other monitors if available, and download the data logger.
- Refer to the ACCMGR and contact your Immunisation or Cold Chain Coordinator for advice as soon as possible.
- Do not dispose of any vaccines until advised to do so by your Immunisation or Cold Chain Coordinator. If this is advised, refer to the ACCMGR.
- Ensure all the advice received and actions taken are recorded in the ACCMGR.
- Inform the Ministry of Health's National Immunisation Programme Team directly or by email, [immunisation@moh.govt.nz](mailto:immunisation@moh.govt.nz), if any patients require recall or reimmunisation.
- Ensure an appropriate emergency plan and equipment are available for use at all times, e.g. chilly bin, packing materials, ice packs and monitoring equipment.

### References

Refer to the documents listed in the *Resources* section on page one.