Te Whatu Ora
Health New Zealand

Department Specific Procedure

Emergency Cold Chain / Vaccine Procedure	
Applicable to: **Emergency Department**	**Authorised by: CNM ED**
	Contact person: CNM ED

This procedure is overarched by Te Whatu Ora Whanganui's commitment to honouring our obligations under Te Tiriti o Waitangi and the five Tiriti principles: Tino rangatiratanga; Equity; Active protection; Options; and Partnership, as articulated in Te Tiriti o Waitangi Policy. In seeking to fulfil these obligations, the organisation is guided by the values and strategy outlined in He Hāpori Ora -Thriving Communities.

1. Purpose

To ensure safe storage, handling and transportation of medications and vaccines, ensuring that the cold chain system is kept intact.

2. Scope

This procedure applies to all Te Whatu Ora Whanganui employees (permanent, temporary and casual), visiting medical officers, and other partners in care, contractors, consultants and volunteers working in the emergency department.

This procedure must be read in conjunction with WDHB Cold chain and Vaccine Policy and Procedures.

3. Roles and responsibilities

All persons handling vaccines are responsible for maintaining cold chain standards that will ensure vaccine potency at each step.

All vaccines must be stored in a pharmaceutical fridge between **2-8 C**° and in accordance with the manufacturer's recommendations. Vaccines **MUST NOT** be frozen or overheated.

All new staff should be orientated to this cold chain management policy.

Contact the immunisation coordinator and Pharmacy:

- when there is a significant change in staff responsible for vaccine cold chain management
- before purchasing a new vaccine refrigerator or cold chain equipment
- in the event of a vaccine cold chain failure
- before disposing of vaccines
- for vaccine cold chain management advice

4. Definition

Cold Chain: is the system of transporting and storing of refrigerated medications (including vaccines) within the recommended temperature range of +2°C to +8°C from the place of manufacture to the point of administration (the individual).

All thermo-sensitive products must be kept at temperatures between +2C to 8C.

5. Procedure

All medicines must be stored in a manner which minimises their deterioration and complies with their storage requirements written on the medication packaging (Medicines Regulations 1984).

Warning: Blood and blood products are not to be stored in either medication or food fridges.

Designated staff with overall responsibility for cold chain management

Within Emergency Department:

First person:	Carla O'Keeffe
Second person:	ED CNC

Name of our local WRHN Cold Chain Advisor:	Nicola Metcalfe
Contact number(s):	06 3480109 029 682 1318
Name of our IMAC Regional Advisor:	Lynette Collis
Contact number(s):	04 918667 0272924174

All vaccinators are responsible for ensuring the vaccines they administer have been stored correctly.

Stock Management

A minimum vaccine stock of two weeks supply but no more than 4 weeks should be kept based on population need and vaccine fridge capacity. Overstocking can lead to wastage in the event of cold chain failure or expiry dates running out.
Vaccine supplies are managed by pharmacy staff who order and supply stock directly in the vaccine fridge.
ED vaccine fridge stocks ADT (diphtheria toxoid + tetanus toxoid)

Other vaccines that may be used sporadically in ED will be kept in pharmacy until immediately required.

Vaccination Fridge Requirements – See WDHB Medication Fridge Policy

National Cold Chain Vaccine Audit

MoH may audit the cold chain of vaccines at various stages by sending a monitor with different batches of vaccine e.g. MON-T loggers

The monitor must remain with the vaccines they are allocated to, until all the vaccines in the box have been used or for up to two weeks, whichever occurs first.

One of these two **lights** will **flash** following pressing and releasing the **START/STOP/STATUS** button

START/STOP/ STATUS BUTTON

If a monitor is sent with vaccines to the ward please check the WDHB Cold-chain Policy for information on how to deal with this or contact pharmacy for further advice.
Ward staff ARE NOT required to do anything with the logger except ensure it remain with the vaccines it is allocated to. Pharmacy staff will collect the logger once the vaccines have been used or after 2 weeks and return then to IMAC for downloading.

Storage

- All vaccines must be stored in a pharmaceutical refrigerator between +2C and +8C.
- Food must not to be stored in the vaccine refrigerator.
- Placement of products in the refrigerator must follow the following guidance:
  - in a way to allow air to circulate between and around products
  - there should be at least 25-30mm between products, from the back and sides of the refrigerator and to the next shelf
  - if the products are stored in containers within the refrigerator, these containers must be of an open weave design
  - vaccines must be left in their own packaging as this helps insulate them against thermal insult and protects vaccines sensitive to light

- Vaccines must not be:
  - stacked against the walls of the refrigerator
  - stacked to the top of each shelf
  - placed against the rear freeze plate or by the icebox of the refrigerator
  - placed in the floor of the refrigerator
  - stored in solid trays or boxes (excluding their box packaging)
  - there should be 25–30 mm between the vaccines and the back of the refrigerator and the shelf above

- All vaccines should be stored in an orderly manner, with the expiry date within easy view so that those with the shortest expiry date are used first.
- Keep any National Cold Chain Audit TagAlert monitors and record cards with the vaccines they arrived with.
- Opening of the refrigerator door should be minimised in order to reduce temperature fluctuations.
- The top of refrigerator should be kept clear.

Individually dispensed vaccines/thermo-sensitive medications:

(This refers to vaccines and medications which require refrigeration that are dispensed and labelled for single patient use on the wards).

- Charts for inpatients are faxed or a copy is delivered to pharmacy.
- Once the vaccines have been dispensed, pharmacy will contact the ward to collect them.

Temperature monitoring

At least two people should be responsible for medication storage and temperature monitoring, so that there is someone who can fill in for a designated person during periods of absence.

Fridges storing vaccines must have 2 independent electronic temperature recording devices such as a data logger or connection to the Building Management System (BMS) that can measure the current temperature and the minimum and maximum temperatures reached since the device was last reset.

The fridge temperature must be monitored each day preferably at the same time. See Procedure for Recording Medication Fridge Temperatures in ED.

Equipment

	Model No#	**Date Purchased**	**Location**
Vaccine Fridge	LEC PGR151AU Serial No. 40300002444440947	Dec 2014	Emergency Department
Data Logger	LogTag TRID-30/7R Multi-use digital Display Serial No.105003908	Oct 2016	Emergency Department

Refrigerator maintenance

The following actions should be taken to ensure the efficient refrigeration of medication.

Daily – Vaccine fridge
Ensure the top of the refrigerator remains clear (except for the temperature log/register).

Monthly
Review the temperature log/register for any cyclical fluctuations and climatic changes.
Check the back plate inside the refrigerator for any visible ice.

Six-monthly

- Door seals: Use the paper check test to ensure the door seals grips the door all around the frame; that there are no large air gaps that will affect the efficiency of the fridge; that there are no large splits or cuts in the seal that will affect hygiene; and that the seal is clean and free from mould and debris.
  - To perform the paper check, use an ordinary piece of paper (approximately 7cm by 4cm).

- Starting at the top of the refrigerator (hinge side) open the door wide enough to place the paper between the fridge surface and the rubber seal. Holding the paper, close the door and then try to remove the paper.
- If the paper cannot be removed easily, then the door seal in intact.
- Repeat the process at least 10 times in different positions around the door.

- Leave the door open to perform the self-closing door check. The door should close automatically. To ensure this, alter the height adjusters underneath the refrigerator so that the door hinge side of the refrigerator is set slightly higher than the non-hinge side.

Cleaning

All interior and exterior surfaces of the refrigerator should be cleaned at least every six months with a solution of 0.03 percent hypochlorite solution (1 part domestic bleach to 99 parts water).

Transportation of vaccines

Chilly Bin, icepacks, insulation packaging and min/max thermometers for:

- transporting vaccines
- defrosting your vaccine refrigerator, and
- in the event of a power or equipment failure

are available from pharmacy if required.

Equipment Maintenance Plan

Pharmacy will organise for the fridge to be serviced each year and the BMS will be calibrated at the same time (generally November), to ensure consistency between the products. A sticker identifying when the next service is due can be found on the front of the fridge.

Refrigerators have temperature gradients and temperature mapping of the refrigerator is recommended, to identify the coldest and warmest parts. To achieve this the data logger must be moved to a new shelf each week.

Electronic temperature recording devices should be independently calibrated on an annual basis.

Emergency plan if fridge temperatures goes outside of temperature range.

See WDHB Cold chain and vaccine policies and procedures.

Records of Temperature Monitoring

- Temperature monitoring information should be kept in the department for a suitable time period so that it can be reviewed if required for a recall medication incident or for audit purposes.
- All temperature data collected **must be** retained for **10 years.**

Vaccine disposal

Do not dispose of vaccines on the ward/department – return them to pharmacy

Contact pharmacy regarding the disposal of unwanted, discontinued or expired vaccines, and/or those that have been subjected to cold chain failure.