



Public Health
England

Protocol for ordering, storing and handling vaccines

March 2014



Introduction

This protocol applies to all staff involved in immunisation. It aims to ensure that vaccines are stored and managed properly so that immunisations are carried out safely and efficiently.

It provides professionals responsible for vaccination with standards for:

- ordering and delivery
- storage
- maintenance of the cold chain
- auditing and monitoring of stock
- incident reporting



Public Health
England

And it:

- **reduces the risk** of compromising the quality, efficiency and safety of the vaccine programme, and
- **improves the service** for patients.



Ordering and delivery

Staff should ensure that:

- orders are placed every 2-4 weeks according to need
- vaccine is promptly stored in a fridge after delivery, maintaining the cold chain at all stages
- there are no leakages, damage or discrepancies in the delivered vaccine
- stock is properly rotated – shortest expiry date used first
- a stock information system keeps track of orders, expiry dates and running total of vaccines
- ordering is done in sufficient time to ensure that there is an adequate supply for clinics.



Ordering and delivery

At least two named, trained people need to be responsible for ordering, receipt and care of vaccines (one from the nursing team and one from management). All members of the primary care team should be aware of the importance of good vaccine management.



Public Health
England

ImmForm

Vaccines are only available for ordering through the ImmForm website. This ensures ordering is easier and more effective and efficient.

To register on ImmForm please go to
<https://www.immform.dh.gov.uk/registration/>

You will need to supply your:

- **NHS code** (e.g. practice code)
- **delivery address**
- **name, email and phone details** (of the key contact responsible for placing orders)



The vaccine fridge

- Vaccines cost the NHS around £200 million a year.
- The loss of only one dose of Pediacel vaccine a month in each general practice would cost an estimated £4 million a year.
- Specialised vaccine fridges cost £600 – £1200
- A validated carrier costs around £300

All practices should have a validated vaccine fridge – domestic fridges are not suitable for storing vaccines



Some 'musts' about the fridge

A validated vaccine fridge must be:

- suitable for the storage of vaccines between +2 and +8°C – a mid range of +5°C is good practice
- locked or kept in a locked room
- used only to store vaccines and medicines, i.e. food or specimens must not be stored alongside vaccines
- large enough to hold the stock and allow sufficient space around the vaccine packages for air to circulate
- wired into switch-less sockets to avoid them being turned off accidentally
- safe – for example, by carrying out visual inspections and P&T testing.

Vaccines stored in validated vaccine fridges must be kept in their original packaging.



Freezing – do not freeze vaccines

Freezing vaccines causes deterioration and can give rise to increased adverse reactions by:

- irreversibly denaturing the proteins in the vaccine
- reducing the efficacy of the vaccine
- causing the emulsions in the vaccines to become unstable
- producing hairline cracks in the ampoule/vial/prefilled syringe, potentially contaminating the contents. The glass spicules (small sharp pointed fragments) produced may also cause serious local adverse reactions.



Validated cool boxes (carriers)

Do:

- use a validated medical grade cool box and cool packs
- monitor max/min temperature while the box is in use
- keep vaccines in their original packaging
- take only enough vaccine for a particular session and minimise exposure of the vaccines to room temperatures
- mark vaccines removed for an external session before returning to the fridge and then use at the earliest opportunity
- choose appropriate sizes of cool box for the amount of vaccine needed.

Don't:

- freeze cool packs.



Stock management

Do:

- keep all vaccines in their original packaging during storage
- make checks at least once a week to:
- rotate stock so that those with the shortest expiry date are moved to the front of the refrigerator and used first
- remove any expired vaccines (there should be none) and discard in appropriate waste stream
- mark clearly any vaccine returned to the fridge with the date and time of its return and place it at the front of the fridge so it is used first at the next session – this should only be done with vaccines that have remained in the cold chain.

Don't:

- stock pile vaccine (no more than four weeks' stock)



Temperature monitoring

Do observe the four Rs

Read Record Reset React

Do make sure that the person making the recording:

- does it at the same time every day during the working week and signs the sheet
- records it in a standard fashion and on a standard form
- ACTS if the temperature falls outside +2 to +8°C
- resets the thermometer after each reading.

Note: any vaccine that has not been stored at +2 to +8°C as per its licensing conditions is no longer a licensed product.



Thermometers

- All fridges should ideally have **two thermometers**, one of which is a **max/min thermometer independent** of mains power
- If only one thermometer is used, then a **monthly check** should be considered to confirm that the calibration is accurate.
- Care should be taken that the **thermometer probe cable does not interfere with the door seal**, causing the temperature to fall outside the permitted range.



Routine maintenance

Make sure that:

- the fridge is maintained in a clean condition
- there is a maintenance contract that allows for at least yearly servicing and calibration of temperature gauge
- a routine vaccine management review is performed quarterly
- the temperature is calibrated at least every month against an independently powered external thermometer
- maintenance of the cold chain forms part of all immunisation training updates.



Incident reporting

In the event of a fridge failure:

- inform the local NHS England screening and immunisation team
- quarantine all vaccines affected by an incident from others (but maintain in the cold chain)
- record all details of the incident
- implement any follow-up of the incident after discussion with the SIT
- implement and share lessons learned from the incident
- make sure written procedures for the disposal of vaccines are available locally
- report the incident on the ImmForm website www.immform.dh.gov.uk



Public Health
England

Audit

Every week: fridge contents should be checked at least once

Every month: vaccine stock should be audited and recorded

Every three months: audit records of stock and temperature management can be shared with your local screening and immunisation teams



Public Health
England

Useful links

Chapter 3 of the Green Book 'Storage, distribution and disposal of vaccines'
www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book

National Patient Safety Agency advice on vaccine cold storage:
www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=66111

PHE guidance on dealing with an incident
http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1267551139589