

Powys Teaching Health Board (PTHB) Safe and Secure Management of Refrigerated Medicines and Vaccines

Standard Operating Procedure (SOP)

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The latest approved version of this document is online. If the review date has passed, please contact the Author for advice.

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Version Control

Version	Summary of Changes/Amendments	Issue Date
1.0	Initial Issue	January 2020
2.0	Document Review Key Changes: • Guidance on the use of plug-in portable vaccine carriers. • Training update – Good Distribution Practice (GDP). • Information on record keeping/stock management systems. • Clarity around 'designated person'. • Guidance around purchasing new refrigerators and annual maintenance. • Guidance around cleaning/defrosting refrigerators. • Use of back-up batteries for refrigerators. • Best practice: Ordering stock. • Excess stock, waste and cost to NHS. • Transport of refrigerated medicines/vaccines to a community setting. • Clarity around returning unused vaccine from a clinic setting back to base clinic fridge. • New appendices to support the requirements outlined in this SOP.	21/03/2024
3.0	Document review Aug 2026 key changes: • Addition of references to key Standard Operating Procedures (SOPs) • Addition of process for purchasing and registering new medical grade refrigerators • Addition of process of placement of new refrigerators and for moving refrigerators from one location to another	24/08/2026

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	• Addition of information and links to support troubleshooting of refrigerator common error codes. • Clarification of staff groups required to complete annual Good Distribution Practice (GDP) training • Removal of reference to SD card and digital thermometers • Confirmation of PTHB preferred choice of data loggers for monitoring refrigerator and vaccine porter temperatures. • Clarity around acceptable stock levels and risks of over ordering stock • Clarity around reporting vaccine waste • Clear advice on how to store products in a refrigerator in accordance with manufacturers operating instructions. • Inclusion of reference to the Welsh Immunisation System (WIS) for recording fridge temperatures. • Removal of reference to pharmacy store vaccine pack downs. • Inclusion of weight checks of Medicoool cool packs • Addition of stock management appendix • Addition of cold chain compliance and governance checklist appendix • Removal of reference to All Wales Advisory document on ordering, storage and handling of vaccines 7th revision 2017 Additional amendments following consultation:	
3.1	• Addition of Medicines Management responsibilities for support to Primary Care contractors • Addition of Primary Care Contractors responsibilities	10/09/2026

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ENGAGEMENT & CONSULTATION

Key Individuals/Groups Involved in Developing this Document.

Role / Designation
Senior Pharmacy Technician, Immunisation/Vaccination & Pharmacy Stores

Circulated to the following for Consultation.

Date	Role / Designation
30/08/2019	Senior Medicines Management Technicians
30/08/2019	Medicines Management Nurse
27/09/2019	Senior Medicines Management Pharmacists
Oct 2019	Head of Nursing
Oct 2019	Director of Nursing
Oct 2019	Deputy Head of Pharmacy
Oct 2019	Head of Pharmacy
Oct 2019	Immunisation Co-ordinator
Oct 2019	Flu Immunisation Co-ordinator

01/07/20	Senior Medicines Management Technician
11/08/20	Chief Pharmacist
22/11/2023	Chief Pharmacist
05/01/2024	Head of Community Services, Medicines Management
05/01/2024	Lead District Nurse
05/01/2024	Head of Service, Public Health Programmes & Projects
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05/01/2024	Assistant Head of Public Health Nursing, Women & Children
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08/04/2026	Clinical Governance and Risk Lead, Women & Childrens Service
08/04/2026	Immunisation & Vaccination Coordinator
21/08/2026	Area Prescribing Group

Evidence Base

Please list any National Guidelines, Legislation or Health and Care Standards relating to this subject area?

- [Green Book, chapter 3: Storage, distribution and disposal of vaccines](#)
- [MHRA inspectorate. Refrigerated medicinal products, part 1: receipt and storage - some things to consider.](#)
- [MHRA inspectorate. Refrigerated medicinal products, part 2: Transportation, packing, temperature management, the use of third party couriers and returns – some things to consider](#)
- [Immunisation against infectious disease](#), the green book.
- [Temperature control whilst transporting medicines – NHS SPS - Specialist Pharmacy Service – The first stop for professional medicines advice](#)
- [Using a refrigerator or freezer to store medicines – NHS SPS - Specialist Pharmacy Service – The first stop for professional medicines advice](#) The use of vaccines that have been temporarily stored outside the recommended temperature range - GOV.UK
- [Vaccine incident guidance: Responding to errors in vaccine storage, handling and administration \(publishing.service.gov.uk\)](#)
- [British National Formulary](#)
- The Royal Pharmaceutical Society (2018) Professional Guidance on the Safe and Secure Handling of Medicines, [Professional guidance on the safe and secure handling of medicines - Royal College of Pharmacy](#)

IMPACT ASSESSMENTS

Equality Impact Assessment Summary					
	No impac.	Adverse	Differentia	Positive	Statement
					<i>Please provide supporting narrative for any adverse, differential or positive impacts that may arise from the implementation of this SOP</i>
Age	✓				
Disability	✓				
Gender reassignment	✓				
Pregnancy and Maternity	✓				
Race	✓				
Religion or Belief	✓				
Sex	✓				
Sexual Orientation	✓				
Marriage and Civil Partnership	✓				
Welsh Language	✓				
Risk Assessment Summary					
Have you identified any risks arising from the implementation of this policy / procedure / written control document? • No risks					
Have you identified any Information Governance issues arising from the implementation of this policy / procedure / written control document? • No					

Have you identified any training and / or resource implications as a result of implementing this?

Please record any training or resource issues /requirements associated with the implementation of your document.

- Staff may require training on the process of monitoring and recording refrigerator temperatures and resetting.
- Staff may require training on the use of data loggers and accessing and interpreting information from them.
- Additional software installation to increase users who can review data logger information.
- Staff may require training on the use and management of Portable Vaccine Carriers and Helapet vaccine porters
- Additional Cold Chain training may be required.
- GDP training may be required.
- Increased use of Medicines Management time to review temperature excursions.
- Completion of ESR cold chain training

This SOP must be read in conjunction with the following SOPs (access via the Medicines Management Team website): [Policies, Protocols, SOPs and Shared Care Protocols - Powys Teaching Health Board](#)

- MMP 428 Use of Labcold Vaccine Carriers
- MMP 430 Cleaning and Defrosting Refrigerators
- MMP 432 Use and Management of Helapet Vaccine Carrier Systems
- MMP 443 Quarantine, Product Recall and Disposal of Vaccines
- MMP 444 Responding to Pharmaceutical Incidents

Further paperwork to support the actions required in this SOP can be accessed here: [Refrigerated Medicines / Vaccines - Powys Teaching Health Board](#)

1. Introduction / Background

Powys Teaching Health Board (PTHB) is committed to the safe and secure handling of all pharmaceuticals, including vaccines. This includes recognising and adhering to the specific and additional requirements for products requiring refrigerated storage, to maintain product efficacy and minimise the risk of wastage

It is mandatory for all staff members involved in the process of dispatching/distributing, receiving, storing, monitoring, transporting,

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administering and disposing of refrigerated medicines and vaccines to always follow this standard operating procedure.

The efficacy and safety of pharmaceuticals, including vaccines, requiring controlled low temperature storage ultimately depends on the maintenance of temperatures within the manufacturers' recommended range, typically +2°C to +8°C. If the storage recommendations, outlined in the product summary of product characteristics (SPC) or package insert, are not followed, manufacturers can disclaim responsibility for any apparent failure of the product.

Inadequate temperature control during storage and transport of pharmaceuticals/vaccines can reduce the efficacy of the product. Vaccines are biological substances that may lose their effectiveness rapidly if they become too hot or too cold at any time. This is particularly important when transporting and storing vaccines in external clinics or for domiciliary use and failure to provide the correct storage conditions can result in compromised attainment of a satisfactory level of immunity.

Maintaining the cold chain ensures that pharmaceuticals including vaccines are transported and stored according to the manufacturer's recommended temperature range of +2°C to +8°C until the point of administration.

2. Objective

- To clearly establish standards for the safe storage of refrigerated medicines and vaccines.
- To describe the process to register new medical grade refrigerators, setting up new refrigerators, moving refrigerators within the organisation and troubleshooting common refrigerator error codes.
- To clearly define the process of ordering, delivery, receipt and management of refrigerated stock.
- To clearly define the process of distribution/transfer of medicines/vaccines in PTHB.
- To describe the process to maintain accurate records of receipt, maintenance, stock check and distribution of medicines/vaccine.
- To describe the procedure for checking and recording refrigerator temperatures to provide assurance that medicines and vaccines are stored within the manufacturers recommended temperature range.

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- To describe the procedure for appropriate corrective and timely action in the event of a temperature breach or excursion outside of the manufacturer's recommendations.

3. Definitions

- **PTHB** – Powys Teaching Health Board
- **Cold chain** – is the system of transporting and storing medicines within the recommended temperature range of +2°C to +8°C from the place of manufacturer to the point of administration to a patient. The cold chain should not be broken.
- **Data logger** – an electronic device which allows a detailed, minute by minute analysis of temperature. Data loggers can be used to provide assurance that the cold chain has been maintained and to provide information about the duration of temperature excursions. Data loggers are frequently placed in medicines refrigerators and in vaccine porters during transportation.
- **Designated person** – a designated person is responsible for medicines management, including refrigerated medicinal products and vaccines, at each location (ward / department / clinic). Deputies must also be appointed so that there is cover for absences. The designated person will usually be the registered health care professional in charge of each location (e.g. ward manager, nurse in charge, district nurse team leader, health visitor team leader, school nurse team leader, lead emergency nurse practitioner in MIU, lead midwife, pharmacists/pharmacy technicians in pharmacy stores, senior clinical lead nurse immunisation & vaccination, clinical vaccination lead for vaccination centres). **The designated person may delegate activities such as monitoring and recording refrigerator temperatures to an appropriately trained individual but will be responsible for ensuring that correct procedures are followed.**
- **GDP** – Good Distribution Practice. GDP ensures the quality and integrity of pharmaceutical products as they move through the supply chain.
- **Fate** – the final fate of a medicinal product or vaccine which has been exposed to temperatures outside of the cold chain requirements, e.g.,

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send for destruction, reduce expiry date, no impact on shelf life. Note that exposing medicinal products to temperatures outside of those recommended in the Summary of Product Characteristics will result in the manufacturer ceasing to accept liability for the use of the product, even if the product is still considered safe and effective to use. Once exposed to temperatures outside those recommended by the manufacturer, the product is considered 'off license' or 'off label'.

- **Medicine** – a substance used for treating, preventing, or diagnosing disease, for contraception, inducing anaesthesia or modifying normal physiological function.
- **MVS** – Medicines Vending System. An automated medicines 'cabinet' which is designed to provide medicines storage and dispensing near the point of care, whilst controlling stock and tracking medicines distribution.
- **Temperature deviation/excursion** – any incident where the recorded refrigerator temperature is outside of the recommended range of +2°C to +8°C.
- **Load Temperature** - The load temperature refers to the actual temperature of the vaccine or medicinal product placed in the refrigerator. The load temperature more accurately reflects the temperature of the medicinal product. It is sometimes referred to as the 'true temperature.'
- **Air Temperature** - The air temperature measures the temperature circulating around the medicinal products in the refrigerator. Air temperature can vary within the refrigerator and can change quickly when refrigerator doors are opened. Air temperature changes much more rapidly than the load temperature.
- **Vaccine** – a suspension of attenuated or killed microorganisms (viruses, bacteria or rickettsia) or of antigenic proteins derived from them, administered for prevention, amelioration or treatment of infectious disease.
- **Quarantine** -To separate/isolate affected stock from supply chain which must be clearly labelled with 'Quarantined – do not use' and dated.

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- **Supply Chain-** Term used to describe the whole cold chain process from the point of receiving the medication into stock, transport, maintaining the medicines and the point of supplying medication.

4. Responsibilities

4.1 The Designated Person

The designated person (or nominated deputy) is responsible for ensuring that all relevant staff (e.g., anyone involved in the safe and secure management of refrigerated medicines / vaccines) complete the required cold chain training, and where applicable (e.g., for services managing and distributing vaccines), Good Distribution Practice (GDP) training. Both must be repeated annually, in addition with one off data logger training, where required. The designated person (or nominated deputy) must also ensure that staff have read, understood, and adhere to the standards outlined in this SOP.

They are responsible for managing and reporting any temperature excursions and for quarantining affected stock until the Medicines Management Team determines the status of the product(s).

They are responsible for providing advice on the safe and secure management of medicines/vaccines requiring refrigeration, oversight of the cold chain, supporting the investigation into any disruptions to the cold chain including advice on quarantining products and providing advice on suitability of medicines /vaccine use following temperature excursions.

The designated person (or nominated deputy) will undertake periodic checks of fridges to ensure medicines / vaccines requiring cold storage are being managed appropriately and that the cold chain is being maintained (see Appendix L).

The designated person (or nominated deputy) must also ensure that all departmental refrigerators, electronic vaccine porters and data logger details—including locations, serial numbers, and calibration due dates—are recorded with the Medicines Management Department via info.medicinesmanagement.powys@wales.nhs.uk for annual servicing and calibration requirements.

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Any changes, such as decommissioning or purchasing of new refrigerators, electronic vaccine porters and data loggers must be reported to the Medicines Management Department immediately.

4.2 The Medicines Management Team

The Medicines Management Team is responsible for the development and review of this SOP and will provide advice and support to primary care contractors and internal Health Board services on the safe and secure management of NHS-procured vaccines. This is to provide assurance that vaccines and other medicines requiring refrigerated storage are ordered, stored, used and managed appropriately, thereby minimising waste, maintaining product integrity, and ensuring continuity of supply.

The Health Board will seek assurance regarding cold chain compliance, vaccine wastage, incident management and compliance with national immunisation standards through existing governance, contractual, quality assurance or incident management processes, including site visits, audits and requests for information.

This will include:

Routine monitoring of ordering patterns for refrigerated medicines through analysis of ordering and stock reports to identify:

- Unusual increases or decreases in ordering activity.
- Excessive stockholding in comparison to patient demand or historical usage.
- Repeated emergency or urgent orders that may indicate poor stock control or forecasting.
- Short-dated stock accumulation.
- High levels of expired, damaged or wasted refrigerated medicines.

Identification of concerns through:

- Regular review of practice, ward or department stock.
- Where in place, comparison of stock levels against agreed minimum and maximum stock holdings.
- Review of fridge temperature monitoring records where stock losses may have occurred.

- Analysis of wastage returns and incident reporting data.

Trend analysis of emergency supply requests and out-of-hours medicine requests.

Investigation of anomalies where unusual patterns are identified, including:

- Liaison with clinical and administrative staff to establish reasons for increased demand.
- Review of prescribing trends, clinic activity or service changes.
- Assessment of stock rotation practices and adherence to expiry date checking procedures.
- Determination of whether excess stockholding may increase the risk of product expiry and financial loss.

Implementation of corrective actions where required, such as:

- Adjusting stock levels to reflect actual usage.
- Redistributing excess stock to alternative locations where appropriate (internal only e.g., stock held by the Health Board).
- Supporting staff with stock management and forecasting processes.
- Providing advice on cold chain requirements and appropriate storage practices.
- Escalating recurrent issues to senior pharmacy management or relevant governance groups.

Documentation and reporting of findings and actions taken, ensuring:

- Evidence of assurance checks is maintained.
- Significant concerns, trends or risks are recorded and escalated in accordance with local governance procedures.
- Opportunities to reduce wastage and improve stock utilisation are communicated to relevant stakeholders.

Continuous quality improvement through regular review of fridge stock management processes to ensure medicines are available when required while avoiding unnecessary stockholding, emergency ordering and avoidable wastage.

Assurance Standard

The Medicines Management Team will seek assurance that refrigerated medicinal products are:

- Stored within the required temperature range.
- Held at appropriate stock levels based on patient need and service demand.
- Subject to regular stock rotation and expiry date checking.
- Ordered in a timely and planned manner.
- Managed in a way that minimises waste and prevents avoidable financial loss to the Health Board.

This process supports effective medicines governance, cold chain compliance, patient safety and prudent use of NHS resources.

The Medicines Management Team will maintain a record of the make, model and serial numbers of PTHB fridges / electronic vaccine porters / data loggers and their locations, for annual servicing/calibration requirements.

The Medicines Management Team is responsible for supporting the investigation into any disruptions to the cold chain including advice on quarantining products and providing advice on suitability of medicines /vaccine use following temperature excursions.

The Medicines Management Team is responsible for developing and reviewing the health board's cold chain training that staff can access via ESR:

[070 Cold Chain Training –The safe and secure management of refrigerated medicine](#) (annual)

For staff providing immunisation/vaccination, vaccine storage training can be accessed via ESR:

[000 Vaccine Storage](#) (one off)

For those wards/departments within the Health Board who manage refrigerated medicines / vaccines and transfer vaccines into the community e.g., PTHB vaccination team, district/community nurses, school nurses, maternity services, occupational health, then the Medicines Management Team can provide annual Good Distribution Practice (GDP) training in the form of a PowerPoint presentation. This

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training is undertaken individually and is certificated 'in-house'. For information on how to access this training contact info.medicinesmanagement.powys@wales.nhs.uk

The Medicines Management Team can provide advice around record keeping e.g., receipt of vaccine, management of vaccine and distribution of vaccine (see Section 9).

4.3 Primary Care Contractors

GP practices, community pharmacies and other independent contractors providing NHS Wales vaccination services are responsible for maintaining their own SOPs, governance arrangements, training requirements and compliance with national guidance and contractual requirements.

Where NHS-procured vaccines are supplied to contractors, Powys Teaching Health Board retains responsibility for oversight of vaccine stewardship and will seek assurance regarding cold chain compliance, stock management, incident reporting, vaccine wastage and staff competence where required (as outlined in section 4.2)

4.4 Other staff

All registered staff employed by Powys Teaching Health Board (PTHB) who are involved in receiving, storing, monitoring, transporting, administering and disposing of refrigerated medicines and vaccines on hospital wards and other healthcare environments are professionally responsible for undertaking cold chain training, adhering to this SOP, maintaining competence, supporting unregistered staff in cold chain management (e.g. Healthcare Support Workers (HCSW) and Pharmacy Assistant Technical Officers (ATOs)) and reporting and reacting to temperature excursions. Evidence of competencies must be available on request from the Medicines Management Team.

Unregistered staff with vaccine management responsibilities e.g. HCSWs / ATOs must achieve competence in the operational duties of vaccine management and must be trained to an accredited Level 2 qualification in pharmaceutical stock management. Further details can be obtained from the Senior Pharmacy Technician for Immunisation/Vaccination & Pharmacy Stores info.medicinesmanagement.powys@wales.nhs.uk

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5. The Cold Chain Process

The cold chain is the system of transporting and storing medicines within the recommended temperature range of +2°C to +8°C from the place of manufacturer to the point of administration to a patient. The cold chain process applies to all medicinal products that must be refrigerated at +2°C to +8°C.

Temperatures outside the range of +2°C to +8°C may affect the stability of the product and reduce its efficacy, potentially leading to a diminished clinical response (e.g., reduced immunity). Any storage outside this temperature range at any point in the cold chain may result in the medicinal product being wasted or deemed 'off licence' or 'off label', depending on the outcome of the Medicines Management Team's investigation into the temperature deviation (see Section 11: Disruption of the Cold Chain).

Freezing can cause deterioration and give rise to increased adverse reactions.

Regarding vaccines, freezing can:

- Irreversibly denature the proteins in a vaccine.
- Reduce the efficacy of the vaccine.
- Cause the emulsions in the vaccines to become unstable.
- Produce 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.

All Disruptions of the Cold Chain, **for any length of time MUST** be responded to immediately and reported to the Medicines Management Team via the procedure laid out in this SOP. (see section 11: Disruption of the Cold Chain)

6. Equipment

6.1 Medical Grade Refrigerators

Specialised Pharmacy refrigerators must be used for storage of pharmaceutical products. **Domestic fridges are not suitable and must not be used. When purchasing a new pharmacy refrigerator, the**

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Medicines Management Team should be contacted for advice regarding choice of refrigerator and recommended supplier.

info.medicinesmanagement.powys@wales.nhs.uk

Refrigerators must be lockable with a glass instead of solid door. Glass fronted refrigerators are preferred as these allow for products to be located before opening the door, thus minimising door opening time.

The refrigerator must be of an adequate size to meet the storage needs of the ward / department / site.

All medicines / vaccine refrigerators must be calibrated. A request for calibration can be made with the supplier when placing an order for a new refrigerator or via the Health Board's agreed refrigerator maintenance contractor, or by medical engineering services. Newly purchased equipment must be asset tagged and registered onto the PTHB Medical Device Asset Management System (equip) – the Medicines Management team can register new equipment and provide an asset number.

The service lead, ward manager, nurse in charge must ensure that details of all new refrigerators, including calibration due date, are logged with the Medicines Management Team. The Medicines Management Team will add the new refrigerator to the PTHB service log, register the refrigerator via equip and provide an asset number. The Medicines Management Team will keep a record for annual servicing / calibration requirements. Please email details to: info.medicinesmanagement.powys@wales.nhs.uk

All departmental fridges must be checked to ensure that annual calibration is up to date (e.g., that the fridge has been calibrated within the last 12 months) This is the responsibility of the designated person and any staff who access medicines / vaccines stored in a refrigerator. There will be a sticker on the door of the fridge indicating the date of the last calibration. Any fridges over-due calibration must be reported to the Medicines Management Team immediately and advice sought on the use of medicines/vaccines stored in the fridge.

info.medicinesmanagement.powys@wales.nhs.uk

Do not place refrigerators near a direct heat source or direct sunlight and leave at least 6cm all-round the unit for adequate ventilation. Failure to do so may affect the performance of the refrigerator

When positioning the shelves inside the refrigerator, please remember to keep adequate room for air circulation. Failure to do so may cause hot spots in the fridge.

Calibrated temperature monitoring probes should be sited in a central location within the refrigerator and, preferably between the products.

It is essential that the electricity supply to medicines refrigerators is not accidentally interrupted. Wherever possible a switchless socket should be in place. If this is not possible a sticker should be placed on the plug (Appendix A).

New fridges must be cleaned with mild soapy water to remove any dust that may have accumulated during manufacture and dry thoroughly. Ensure the fridge is level by adjusting the feet at the bottom of the fridge

New refrigerators must be left standing for at least two hours before being connected to the power supply. This allows the coolant to settle properly after transport. Always refer to the manufacturer's instructions to confirm the recommended standing time.

Once switched on, follow the manufacturer's instructions to set up the fridge e.g., date/time etc. Choose a suitable temperature set point by referring to the manual: fridges operate between +2°C and +8°C so a mid-way set point of +5°C is usually appropriate. Link to Labcold refrigerator manuals [LABCOLD INTELLICOLD OPERATING INSTRUCTIONS MANUAL Pdf Download | ManualsLib](#) Link to Lec refrigerator manuals [Resources | Lec](#)

Although the refrigerator temperature will reach +5°C after approximately 1 hour, the refrigerator must remain running for 24 hours before loading with temperature sensitive vaccines and pharmaceuticals.

NB. It is important that you reset the maximum/minimum temperature record before loading the refrigerator for the first time. This will ensure that the daily temperature record is accurate when you start to use the fridge for storing medicines / vaccines.

Departments using small refrigerators should include consideration of segregation of stock with different status, e.g., incoming, quarantine, returned and outgoing stock. Sufficient space should be maintained to permit adequate air circulation. If the refrigerator is filled to capacity, then the effect on temperature distribution

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must be investigated. Also, for those services using cool packs, consideration must be given to the space that they take up within the refrigerator.

Ensure items are not placed against the interior walls or on the bottom of the fridge.

The refrigerator must be maintained in a clean condition and ice must not be allowed to build up. The refrigerator must be cleaned monthly. Special care must be taken during cleaning/defrosting to ensure that the cold chain is maintained. An alternative refrigerator or validated medical-grade vaccine porter should be used during cleaning. A cleaning log should be displayed alongside the fridge and completed and signed, prior to and when cleaning has taken place (Appendix B) See also SOP MMP30 Cleaning and Defrosting Vaccine Fridges

If necessary, contact the Medicines Management Department for advice before carrying out any defrosting/cleaning activities.
info.medicinesmanagement.powys@wales.nhs.

Refrigerators used to store medicines / vaccines should be always locked when not actively being used.

Where the fridge is equipped with an alarm, ensure that the alarm is set appropriately and is switched on (refer to appropriate refrigerator manual).

Troubleshooting: Common issues are addressed in fridge manuals e.g., error codes, alarm silencing. Teams should refer to the manual for the make and model of the refrigerator **before** contacting the Medicines Management Team for advice with error codes. Link to Labcold refrigerator manuals [LABCOLD INTELLICOLD OPERATING INSTRUCTIONS MANUAL Pdf Download | ManualsLib](#) Link to Lec refrigerator manuals [Resources | Lec](#) and www.lec-medical.co.uk Labcold also have a 'frequently asked questions' webpage, access here: [Frequently Asked Questions | Labcold](#)

Useful Contact Information and advice on setting up appliances.

Lab Cold : www.lacold.com or email webservice@lacold.com Tel 01256 705580

LEC Medical : www.lec-medical.co.uk 0344 815 3742

6.2 Back up Batteries

Back up batteries must be installed in the fridge. If batteries are not installed and a disruption to the power supply occurs, it is possible that the date and time function will be lost, which means that it will not be possible to read the temperature on the fridge panel and the fridge will keep alarming.

Every department must have a reserve fridge battery supply on site to ensure that they can be replaced when the batteries are running low. The fridge will alarm when the batteries are running low, are faulty or removed and potentially after disruption to the power supply (e.g., National Grid outages or when local generators are being tested). When the alarm sounds due to an issue with the battery, the display on the fridge will show a battery symbol which will alternate with a screen showing L-b (low battery) or n-b (no battery)

NB. Batteries will only power the controller (display screen), not the fridge

6.3 Data Loggers

In addition to daily fridge temperature monitoring, data loggers (rather than SD cards) are PTHB preferred choice for monitoring and analysis of temperatures.

Data logging (manual or Wi-Fi enabled) provides a detailed record of temperature fluctuations over time. Continuous monitoring of temperature is crucial to detect and respond to any deviations that may compromise the integrity of the stored medicines/vaccines. Continuous temperature monitoring helps identify temperature deviations that may occur due to power outages, equipment malfunctions, or human error. Early detection enables timely corrective action, preventing pharmaceutical waste and maintaining the efficacy of medicines / vaccines.

All medicines / vaccine refrigerators within PTHB must contain a data logger.

NB. All data loggers must be registered with the Medicines Management Team; make, model, serial number and recalibration due date will be recorded on the cold chain equipment log.

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Temperature Monitoring During Transport and Clinics:

All vaccine porters, including portable plug-in vaccine carriers, must contain an appropriate temperature data logger when medicines or vaccines are being transported or stored.

Further guidance is provided in Section 10: Transporting Refrigerated Medicines / Vaccines in PTHB and must be followed at all times.

Where a temperature excursion is identified following analysis of a data logger download then the procedure for managing a temperature excursion (section 11) must be followed.

7. In use Storage of Refrigerated Medicines / Vaccines

Under no circumstances should a medicines refrigerator be used to store food, drink or any type of specimen. It must only be used for medicinal products.

Effective management of fridge stock involves a combination of daily temperature monitoring for safety, organised stock rotation to prevent waste, and diligent record-keeping for audits / product recalls etc.

Only medicines / vaccines requiring storage between +2°C to +8°C should be kept in the fridge. All medicines / vaccines must be stored in the manufacturer's original packaging. Storing medicines in their original packaging is essential for safety, stability, and identification. It ensures that crucial information like the Patient Information Leaflet (PIL), expiry dates, and dosage instructions are always available, while also protecting the product from light, moisture, and air that can cause degradation.

The fan within the refrigerator must not be blocked. To allow air circulation the refrigerator must not be overloaded **(50% capacity is recommended)**.

Medicines / vaccines should be stored in the main body of the fridge. Medicines / vaccines must not be stored in the door, or on the bottom of the fridge.

Sufficient space around the medicines / vaccine packages should be left for air to circulate. Vaccines should be kept away from the side and back walls of the refrigerator; otherwise, the vaccines may freeze rendering them inactive and unusable.

Open Weave Baskets may be used to store medicinal products within the fridge.

A Fridge Monitoring Poster (Appendix C) must be attached to each refrigerator containing medicines or vaccines.

8. Monitoring

8.1 Medical Grade Refrigerators

The refrigerator must have an integrated working thermometer that records the minimum, maximum and actual temperature with the ability to reset the temperature.

In most PTHB medicine refrigerators, the integrated thermometer only reads the air temperature surrounding the medicinal products. Air temperatures can vary within the refrigerator and can change quickly when refrigerator doors are opened, therefore it is important that refrigerator doors are only opened when necessary and for the absolute minimum of time.

There are medicine refrigerators in which the fridge thermometer monitors both the air and the "load" temperatures. These types of medicine fridges usually have the thermometer probe placed within a sealed glycol bottle, which mimics the vaccine liquid. The load temperature measures the medicinal product and vaccine temperature more accurately and is less prone to air temperature variations. Air temperature changes much more rapidly than the load temperature.

Load temperature takes much longer to change and is sometimes referred to by the manufacturer as a 'true temperature'. Therefore, if your medicine fridge measures both the air and load temperature, then the load temperature is the preferred recording.

For refrigerators with external thermometers with a probe, the naked probe should be suitably housed to simulate packaged medicines and to minimise fluctuations in temperature caused by air movement. This can be achieved by placing the probe in a bottle or carton, according to the manufacturer's instructions. The bottle/carton is then placed inside the refrigerator to mimic the medicines being stored.

The temperature within the refrigerator must be monitored continually with a data logger independent of mains power (see section 6.3: Data Loggers).

Several departments in PTHB have fridges that are connected to Omnicells e.g., Brecon, Llandrindod and Welshpool hospital MIUs. Their temperature is monitored via the Flexlock mechanism connected to the Medicines Vending System (MVS). In this instance, temperature breaches are notified by e-mail from the system.

8.2 Monitoring and Downloading Fridge Temperatures: Data Loggers

Approved fridge temperature data logging devices (manual or Wi-Fi enabled) must be used to continuously monitor refrigerator temperatures to ensure compliance with the recommended storage range of +2°C to +8°C.

Routine Monitoring (static refrigerators):

Manual data loggers must be downloaded at least every two months, even where no temperature alarm has been triggered.

This is mandatory, as stored data will be automatically overwritten after this period and cannot be recovered.

Wi-Fi data loggers provide continuous wireless temperature monitoring and allow users to view temperature data via a PC-based graphing system. Data review must be carried out in accordance with local SOP requirements.

Certain service areas (e.g., vaccination services) may require more frequent downloading or review of data logger records. Where this applies, the relevant local SOP must be followed.

Management of Temperature Excursions:

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If a temperature alarm is triggered, the data logger must be reviewed without delay:

- **Manual data loggers** must be downloaded.
- **Wi-Fi data loggers** must be accessed via the graphing system and the data exported (e.g. to Excel).

The downloaded data must be reviewed to establish:

- Maximum and minimum temperatures recorded
- Duration of time the fridge temperature remained outside the range of +2°C to +8°C

This information must be used to support decision-making regarding stock suitability and escalation in line with section 11 of this SOP, Disruption of the Cold Chain

Record Keeping and Audit:

A copy of all data logger downloads or exported reports must be retained in line with local record-keeping and audit requirements.

Records must be available for inspection during audits or regulatory visits.

Training and Responsibilities:

All staff responsible for fridge temperature monitoring must be trained and competent in the use of data logging devices, including:

- Downloading data
- Accessing Wi-Fi monitoring systems
- Interpreting temperature graphs and reports

Training can be requested by contacting the Medicines Management Team info.medicinesmanagement.powys@wales.nhs.

Calibration and maintenance of data loggers will need to be performed as outlined by the manufacturer. As a minimum, an annual calibration check must be carried out to ensure that they are working correctly. Contact the Medicines Management Team at least 6 weeks before a data logger is due to expire info.medicinesmanagement.powys@wales.nhs to allow sufficient time for calibration to be organised or a replacement to be issued.

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8.2 Recording Temperatures

The designated person is responsible for ensuring that the refrigerator temperature is read and recorded daily. Duties associated with maintenance of the cold chain may be delegated to appropriately trained individuals. The actual, minimum and maximum temperature must be recorded every working day, preferably at the same time of day, then reset. Following periods of high activity e.g., loading, unloading fridge items, the refrigerator must be reset, and the temperature once stabilised, recorded again. Periods of high activity should be kept to a minimum.

NB. Be aware that the refrigerator temperature can rise rapidly on opening the refrigerator door, especially when loading / unloading medicines / vaccines. Therefore, the refrigerator temperature must be closely monitored when loading / unloading medicines / vaccines, to ensure that the temperature remains within $+2^{\circ}\text{C}$ to $+8^{\circ}\text{C}$. Care should be taken in warmer weather and where refrigerators are located in warmer rooms.

For some areas which are closed over weekends (e.g., outpatients, maternity) or where staff do not regularly attend, it is acknowledged that the refrigerator may not be monitored for several consecutive days. A risk assessment needs to be undertaken to understand the potential impact of a temperature excursion. If expensive or large quantities of medicinal products are stored in the refrigerator, it is recommended that alternative arrangements are made for refrigerator monitoring during the time that the area is closed.

The temperature monitoring record for each refrigerator must detail the following (see Appendix D):

- Actual temperature
- Minimum temperature
- Maximum temperature
- An indication that the thermometer has been **reset** after recording each reading.

- An indication of whether or not the fridge has been maintained between +2°C and +8°C since the last reading and **action** taken if not.
- The date and time of recording the temperature and the person's signature.

Some PTHB service areas will need to record temperature monitoring via the

Welsh Immunisation Service (WIS) e.g., those service areas storing vaccines

for vaccination programmes. In this instance the entire vaccination record is

recorded on WIS, including vaccine stock management.

If any temperature outside of the recommended range of between +2°C to +8°C is noted, then the following actions must be taken:

- Follow Section 11: 'Disruption of the Cold Chain' of this SOP.
- Ensure that a record is kept of any actions undertaken.
- Immediately report the incident to the ward/department manager and the Medicines Management Team on 01874 712641 OR during out of hours period contact the on-call Pharmacist (refer to the [Medicines Policy](#) for advice on how to do this)
- Quarantine the affected stock (see section 11: Disruption of Cold Chain, for details).
- Complete a Datix report.

9. Ordering, Delivery and Receipt of Refrigerated Stock

Care must be taken when ordering, as excessive stocks can lead to waste and increased costs to the NHS. Stocks should be monitored by the designated person to prevent over-ordering and stockpiling. In terms of ordering and storing vaccines, the Green Book states that no more than 2-4 weeks of stock should be held at any one time. [Storage, distribution and disposal of vaccines: the green book, chapter 3 - GOV.UK](#)

Best practice is to order smaller quantities on a regular, scheduled basis. Ordering should be done in sufficient time to ensure that there is an adequate supply.

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To help avoid waste, medicines must not be stockpiled.

Excess stock can:

- increase the risk of administering an out-of-date medicine/vaccine.
- increase wastage and the cost of disposal.
- increase the dangers of over-packed refrigerators, leading to poor air flow, potential freezing of stock (especially near the fridge walls), temperature excursions.
- make stock rotation challenging.
- delay the introduction of new medicines / vaccines until local supplies have been used.
- increase the cost of replacement of stocks if the refrigerator fails.
- reduce the space in vaccine refrigerators available for periods of high demand, such as during seasonal vaccination programmes, when flu immunisation takes place.

Rotate stock regularly to make sure that medicinal products and vaccines with the shortest expiry dates are used first. Where large volumes of stock are being held in refrigerators e.g., in the Pharmacy Store, Vaccination Centres, then it is necessary to clearly identify medicinal products approaching their expiry date, for example by highlighting the expiry date.

An example of incorrect storage in medicine refrigerators is shown in Appendix E and correct storage in Appendix F.

Ward based Pharmacy Assistant Technical Officers (ATOs) are responsible for checking the expiry date of all refrigerated medicinal products and vaccines at least once a month, as part of the general expiry date check procedure for medicines on the ward or unit. Other services managing refrigerated stock e.g., Vaccination Service, District Nurses, School Nurses, Maternity Services, Occupational Health must ensure that expiry date checks are performed weekly.

In departments storing refrigerated medicines / vaccines for onward delivery to other PTHB sites (e.g., pharmacy stores), for those teams' delivering vaccinations within other clinical areas in PTHB (e.g., Occupational Health Team) or those who are delivering vaccinations within the community (e.g., PTHB Vaccination Team, School Nursing Teams and District Nursing Teams) then a simple stock management Excel log should be maintained to keep track of orders received,

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product batch numbers, expiry dates and running totals. **A stock management template is available**

from the Medicines Management team (see example in Appendix G)

NOTE: The spreadsheet contains embedded formulae, therefore it must be

obtained directly from the Medicines Management Team to ensure accurate and consistent record-keeping. Contact the Medicines Management Team for advice info.medicinesmanagement.powys@wales.nhs.uk

A more detailed stock management log is required for PTHB pharmacy stores service.

Orders must be placed in sufficient time, according to supplier agreement (e.g., PTHB pharmacy stores have a lead time of approximately 5 - 7 days, depending on the product ordered), to ensure that there is always an adequate supply of medicines / vaccines required in clinical areas. Lead time should be taken into consideration when placing orders with external suppliers e.g., ImmForm, supplying hospital pharmacy.

Some medicines and vaccines will be processed and delivered by PTHB pharmacy stores, others by organisations contracted to provide and transport medicines / vaccines at local or national level, (e.g., NWSSP / Movianto) or occasionally by registered PTHB healthcare staff¹ (e.g., when vaccinating within a community setting or in a patient's home or care home).

Deliveries / transfers within PTHB must be clearly marked as refrigerated medicines and the expiry time of the cold chain noted on the vaccine porter. The cold chain must be maintained during transportation. The delivery driver is responsible for ensuring that the delivery is handed over to the designated person or nominated deputy. This may be a registered professional or unregistered staff working within the location NB. Unregistered staff must be trained, competent and signed off by a pharmacy professional or a suitably qualified member of staff with an accredited level 2 qualification in pharmaceutical stock management (a training matrix can be supplied by the Medicines Management team for this info.medicinesmanagement.powys@wales.nhs.uk) The driver will record the name of the person receiving the delivery and will record the time of receipt.

¹ PTHB staff who transport refrigerated medicines/vaccines within the organisation must ensure that they are legally covered to do so by their motor vehicle insurer (insured for business use as well as domestic use). Where possible use PTHB pool cars or dedicated PTHB transport.

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Deliveries may be received in validated vaccine porters such as a Helapet vaccine porter or in cardboard boxes (some with thermal inners); cardboard boxes are used where the product is being transported in a vehicle fitted with a temperature controlled unit. In either case, the product(s) must be transferred to the refrigerator immediately on arrival.

Upon receipt of the delivery, the designated person or nominated deputy must unpack the items immediately and check the products for any leakages, damage, or discrepancies. This includes verifying the order against the delivery note, ensuring batch numbers, expiry dates, and quantities are correct, and confirming that the cold chain has been maintained throughout transit. The supplier must be contacted immediately if any issues are identified. Note: Vaccines delivered from the Bronllys pharmacy store via a temperature-controlled vehicle will not be accompanied by a paper delivery note. Medicines / vaccines received directly from the supplier are accompanied with a delivery note. In either case, confirmation of receipt will be obtained when the driver requests an electronic signature from the recipient using a handheld PDA device.

Any necessary actions are the responsibility of the receiving ward, department, or clinic; however, the Medicines Management Team can be contacted for advice on appropriate steps to take.

Fridge stock must be properly rotated to ensure that products with the shortest expiry are used first.

Vaccines and other fridge line pharmaceuticals must be stored in the original packaging, retaining batch numbers and expiry dates.

10. Transporting Refrigerated Medicines/Vaccines in PTHB

Domestic cool boxes must not be used to store or transport medicines / vaccines. Approved, validated medical grade vaccine porters and cool packs must be used to ensure the cold chain is maintained throughout the entire transportation process.

Approved validated vaccine porters used in PTHB are standard Helapet Carrier Systems or Labcold™ / Coolmed Portable Vaccine Carriers (which can be plugged into a power source). The Medicines Management Team can advise

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on suitable validated vaccine porters/pre-calibrated portable vaccine carriers and cool packs to purchase. Departments are advised to clearly label their Helapet vaccine carriers to identify ownership; placing a laminated A4 sheet in the front pocket of the carrier will be sufficient. Helapet vaccine carriers should also be clearly labelled in red bold type to indicate that they contain temperature-sensitive medicines / vaccines (for example, "Temperature-Sensitive Medicines/Vaccines – Maintain Cold Chain") to ensure appropriate handling at all times.

With time and use, vaccine carriers and cool packs may not be able to maintain the cold chain for extended periods, so additional monitoring is always required (e.g., inclusion of a data logger) For cool pack management and weight tests see section 10.3: Example of Preparing a Helapet Vaccine Porter.

Data loggers must be used with vaccine porters and temperature data must be downloaded and reviewed to confirm that vaccines have been maintained within the recommended temperature range of +2°C to +8°C throughout transport and storage.

10.1 Transfer of refrigerated medicinal products between PTHB sites

PTHB employees may transport refrigerated medicinal products throughout Powys e.g., from one department to another. However, this must be authorised by a PTHB pharmacist / senior pharmacy technician (for ward stock, also see SOP MMP 483 Transfer of Medication (Excluding Controlled Drugs), ONS and dressings), senior pharmacy technician for vaccination/immunisation (pharmacy stores/vaccination centre stock), the service lead for community vaccinations e.g., school nurse led vaccinations or the lead clinician for staff vaccination e.g., occupational health

It is the member of staff's responsibility to check if the carriage of medicines or vaccines has any implications on their car insurance.

Medicines/vaccines should be transferred safely and efficiently from the medicine's fridge into the validated vaccine porter / portable vaccine carrier to ensure that the cold chain is maintained. Data loggers must be used within both types of vaccine porters to audit temperatures during transportation.

Validated vaccine porters / portable vaccine carriers must be set up in accordance with the manufacturer's instructions before medicines / vaccines are transferred into them e.g., Helapet vaccine porters should be lined with the appropriate cool packs and an insulating material like bubble wrap before medicines / vaccines are loaded into them (see appendix H for an example). Electronic portable vaccine carrier systems e.g., Labcold™ must be switched on for 15 minutes before packing with refrigerated stock to ensure that the temperature remains stable between +2°C to +8°C. Medicines/vaccines must be kept in their original packaging.

Transportation details must be documented, and where local SOPs dictate, a delivery note raised as a record of transfer (WIS may be used as a means of recording some vaccine transfers e.g., Covid-19 / RSV / Influenza vaccines). Where Helapet vaccine porters are used, an address label must be attached to the vaccine porter lid, with the address and name of the designated recipient clearly marked. A template address label can be accessed here: [Refrigerated Medicines / Vaccines - Powys Teaching Health Board](#) The date that the Helapet vaccine porter was packed must be clearly visible on the address label along with the expiration of the cold chain (8-hours post packing). The vaccine porter must clearly display a label stating 'refrigerated medicines'. A data logger must be used when transporting medicines / vaccines. It is the registrant's responsibility to ensure that the cold chain has been maintained before administering the medicine/vaccine to the patient.

Note: Bronllys Pharmacy Stores and supplying Hospital Pharmacy utilise vehicles fitted with temperature-controlled units for the transportation of medicines and vaccines.

In such circumstances, products may not be transported in vaccine porters and may instead be supplied in transport boxes. It is therefore essential that, upon receipt at the destination site, all medicines and vaccines are unpacked without delay and transferred immediately to appropriate refrigerated storage.

10.2 Transport of refrigerated medicinal products to a community setting.

When transporting medicines/vaccines for use in community settings, named individuals are responsible for ensuring that only the quantities necessary for each session are removed from the refrigerator, thereby minimising any need to return or potentially waste product. Medicines and

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vaccines should be placed promptly into validated Helapet vaccine porters or calibrated Labcold™ portable vaccine carriers. Care must be taken not to overpack the carriers; medicines / vaccines must not be squeezed in, as this can damage packaging and compromise product integrity. Data loggers must be used to monitor temperatures during transportation and should be placed in the centre of the vaccine porter between stock. During use, opening the lid of the vaccine porter should be kept to a minimum to preserve the internal temperature.

Where unused medicines / vaccines are left over at the end of a clinic session and providing that there is evidence to assure that the cold chain has been maintained e.g., via a data logger download, then the medicine / vaccines can be returned to the base clinic refrigerator. Returned stock packages should be marked with a cross on all sides, clearly marked with the date of its return, and the length of time it was away from the base clinic fridge. Any medicines / vaccine returned to the base clinic fridge should be placed at the front of the fridge to ensure that it is used first at the next session.

If the cold chain cannot be guaranteed via robust evidence (e.g., data logger data) then contact the Medicines Management Team for advice info.medicinesmanagement.powys@wales.nhs.

Wasted medicines / vaccines must be documented appropriately. This may be via local stock management logs, ImmForm, Welsh Immunisation System (WIS), depending on the vaccine type NB. Only vaccines ordered from ImmForm should be reported as waste on ImmForm.

For further information regarding transportation of vaccines please contact senior pharmacy technician for vaccination / immunisation and pharmacy stores and / or refer to relevant departmental SOPs
info.medicinesmanagement.powys@wales.nhs

Helapet vaccine porters must be sealed with a security tag during transport. Teams can purchase Secur-Pull Breakable Seals from Distinctive Medical Products, product code SKU:7908-10 (blue seals).

Documents to support the transportation of medicines / vaccines e.g., vaccine porter address labels, vaccine porter temperature monitoring sheets, can be downloaded from the Medicines Management Team website [Refrigerated Medicines / Vaccines - Powys Teaching Health Board](#)

10.3 Data Loggers and Packing a Vaccine Porter

Calibrated data loggers (manual or Wi-Fi) are PTHB preferred choice for monitoring refrigerator / vaccine porter temperatures.

Using a data logger within a Helapet vaccine Porter

For simple, straightforward transfers / deliveries of refrigerated stock within PTHB e.g., moving stock from one fridge location to another, the vaccine porter lid will remain closed throughout the journey and the data logger downloaded at the end of that journey. In terms of using Helapet vaccine porters to hold stock during vaccination sessions in the community, then data loggers must be used to support temperature monitoring over this period. Therefore, it is important that care is taken to ensure that the vaccine porter lid remains closed and is only opened for the shortest amount of time to access vaccine. The data from the data logger must be downloaded and analysed when all vaccine has been used/returned to confirm that the cold chain has been maintained throughout the day.

Any temperature excursions must be reported to the Medicines Management Team immediately and any excess stock quarantined. The data logger download must be filed electronically for future reference and must be available on request from the Medicines Management Team (see section 14, Records Retention)

Using a data logger within an electronic Labcold™ portable vaccine carrier

Data loggers must be used with portable electronic vaccine porters even when the vaccine porter has a built in digital temperature display (the data logger must be placed in the centre of the load). The temperature displayed on the digital screen of the portable plug-in vaccine porter must be recorded three times / day on a vaccine porter temperature monitoring log (see appendix I). The data from the data logger must be downloaded when all vaccine has been used / returned to base and must be analysed to confirm maintenance of the cold chain throughout the day. Any temperature excursions must be reported to the Medicines Management Team immediately. The paper temperature records must be noted on the data logger download at the end of the day. The paper record can then be disposed of. Providing the temperature has remained stable (between +2°

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to +8°C), then the download can be filed electronically for future reference / audit purposes.

Any temperature excursions must be reported to the Medicines Management Team immediately and any excess stock quarantined. The data logger download must be filed electronically for future reference and must be available on request from the Medicines Management Team (see section 15: Records Retention)

Note: Labcold™ portable vaccine carriers are not designed for extended storage of vaccines (e.g. as a substitute for a refrigerator). They should only be used to maintain the cold chain during transportation and use within community vaccination clinics.

Example of Preparing a Helapet Vaccine Porter

The Helapet validated vaccine porter 6 requires six small Medicoool packs (cool packs) to be packed into the vaccine porter. Cool packs must be refrigerated for a minimum of 24 hours beforehand.

Cool packs for vaccine porter 6 must be stacked one flat on the base/bottom of the vaccine porter and one against each of the four sides of the vaccine porter. A layer of bubble wrap should be placed around the inside of the vaccine porter to protect the medicine/vaccine from direct contact with the cool packs and to protect the vaccine from damage. Any spaces within the load should be filled with insulating material to prevent temperature variations and to ensure that the medicines / vaccines do not move around during transport. A final cool pack should be placed on top of the vaccines. Place the polystyrene lid back on the box and fold over the insulated fabric cover ensuring that the Velcro fastening is securely sealed. If the Helapet vaccine porter 6 is loaded correctly, the vaccine porter will be validated to maintain the cold chain for an 8-hour period, provided the vaccine porter lid remains closed, or is opened occasionally for very brief periods e.g., seconds rather than minutes, during a vaccination session.

Larger sized Helapet validated vaccine porters require lining with different sized cool packs e.g., medium sized vaccine porters use 14 small cool packs, while large vaccine porters use 8 large cool packs. Always refer to the manufacturer's instructions and ensure that the correct cool packs are used.

Cool packs must be wiped clean with a Clinell wipe after use and before returning to the refrigerator. A system must be put in place to indicate when they will be next ready for use e.g., 24 hours after placing into the refrigerator (paperwork to record these details can be downloaded from the Medicines Management Team website [Refrigerated Medicines / Vaccines - Powys Teaching Health Board](#))

Cool packs must not be used before 24 hours have elapsed, as this will compromise the cold chain.

A weight check should be performed periodically (every 6 months). If the cool pack is $\pm 20\text{g}$ different to the weight shown on the cool pack instructions or shows any signs of leaking, then it is recommended that it is disposed of. New supplies of Medicool® cool packs can be ordered from [MediCool® Packs For use with Helapet Porter Carrier Systems - Helapet - Cleanroom Consumables and Sterile Cleanroom Products](#) NB. Ensure that the correct size of cool pack is ordered for the Helapet vaccine porter e.g.,

- Helapet VaccinePorter® 6 (small vaccine porter) – Takes six Medicool® 28 cool packs
- Helapet VaccinePorter® 9 (small vaccine porter) – Takes six Medicool® 28 cool packs
- Helapet VaccinePorter® 16 (medium vaccine porter) – Takes fourteen Medicool® 28 cool packs
- Helapet VaccinePorter® 24 (large vaccine porter) – Takes eight Medicool® 3 cool packs

Instructions for use can be found here:

[VaccinePorter® Carrier Systems - Helapet - Cleanroom Consumables and Sterile Cleanroom Products](#)

NB. If storing cool packs in a refrigerator with other medicines / vaccines, they should be cleaned and returned to the fridge immediately on return of the vaccine porter. This is because they will likely still be cool at this point. Leaving the cool packs in a vaccine porter overnight or longer means that they will become warm which may compromise the fridge temperature on return to cold storage (e.g., raise the temperature of the fridge). Cool packs should not be stacked more than 3 packs high in the refrigerator, and they should not restrict airflow within the fridge.

11. Disruption of cold chain

Medicines / vaccines that have not been transported or stored according to the manufacturer's recommendations are no longer within the terms of the marketing authorisation (product license) and must be quarantined until an investigation of the incident is completed.

If there is a disruption of the cold chain, **immediate** action must be taken.

Refer to the 'Is Your Temperature Out of Range' flow chart (appendix J), which outlines the processes to be followed in the event of a cold chain breach. Display near the fridge for reference.

These tasks may be delegated to appropriately trained individuals to ensure a swift response to the temperature excursion but overall management of the response to the disruption of the cold chain sits with the designated person.

- Check that the plug is connected to the socket and is switched on.
- If alternative cold storage is available then quarantine the medicines / vaccines in an alternative pharmacy / medicines' fridge on the site, clearly label and date the quarantined stock to show there has been a temperature excursion. Do not use until clearance is provided by the Medicines Management Team.
- If there is no alternative cold storage available - keep fridge door locked, reset the refrigerator temperature and record temperature regularly, resetting after each record.
- Put a sign on the front of the fridge warning that medicinal products are quarantined and should not be used.
- Establish the temperature history—determine how long the fridge has been out of range and the temperatures reached. If a temperature excursion is identified a significant time after it occurred (e.g., days or weeks later), records must be reviewed to check whether any medicines or vaccines from the affected fridge were distributed to other PTHB locations during that period. Contact any sites that received these items and request that they quarantine the stock until further notice.
- If any affected medicines or vaccines have already been administered and depending on the outcome of the cold chain investigation, then patients may need to be traced and informed under a duty of candour. Some vaccines may not be impacted by short temperature deviations and may be used 'off-label'; a

patient/carer leaflet is available to support this scenario [The use of vaccines that have been temporarily stored outside the recommended temperature range - A brief guide for parents, carers and patients](#)

Note: The Medicines Management Team will advise on the appropriate action to take for products exposed to temperature deviations.

- Complete the 'Disruption of Cold Chain' form fully (See Appendix K); failure to do this will delay the investigation into the temperature deviation.
- Complete a Datix report.
- Contact the Medicines Management Team on 01874 712641 OR during the out of hours period contact the on-call pharmacist (refer to the Medicines Policy for advice on how to do this).
- Provide the Medicines Management Team with: Disruption of Cold Chain form (this must be completed fully to avoid delays in the investigation), Datix incident number and a copy of the refrigerator monitoring sheet (see appendix I) and the data logger download.
- Where necessary contact the Medicines Management Team for advice on arranging for an engineer to repair the refrigerator info.medicinesmanagement.powys@wales.nhs.uk. The contracts for maintenance are kept by the Medicines Management Team.
- Only order replacement stock where necessary e.g., if patient is prescribed it and when there is a functioning refrigerator to store the product in or where the product will be utilised within parameters where it is safe to use outside of the cold chain (this will vary between products)

When the Medicines Management Team or on call pharmacist confirms the fate of the affected medication the responses will need to be actioned. Examples of outcomes are as follows: NB. This list is not exhaustive.

1. Efficacy of the medicine has not been compromised. Product License unaffected. Medicine is safe and can be used, label product to indicate a temperature excursion has occurred and that the product licence is unaffected.
2. Efficacy of medicine is unaffected, but shelf life is compromised – medicine can be administered with a reduced expiry, the revised expiry date must be clearly marked on the product along with an

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indication that the product has been subject to a temperature excursion e.g. place a sticker on the product box e.g. 'temp. excursion xx/xx/20xx for x hours/x minutes'. Stock should be rotated to ensure that affected medicines/vaccines are used first.

3. Efficacy of medicine is unaffected as the manufacturer has provided additional in-house stability data to support its continued use. However, the product is recommended as 'off license' or 'off label' (see key points – off-label vaccine use, below). Mark the product to indicate it has been subject to a temperature excursion.
4. Efficacy of medicine has been significantly compromised. Dispose of in appropriate manner. Reorder stock as necessary.

NB. Any medicines or vaccines that have been subject to a temperature excursion, but are confirmed as suitable for use following investigation, must be clearly labelled. This is important, as it may influence decisions about their use if further excursions occur.

Appropriate labels can be found on the Medicines Management Team website [Refrigerated Medicines / Vaccines - Powys Teaching Health Board](#)

Key points - off-label vaccine use:

- As part of the manufacturer's licensing conditions, it is recommended that vaccines are kept cool at all stages of their production, distribution and storage.
- Sometimes, however, the 'cold chain' is interrupted, and the vaccines may get warmer or colder than recommended.
- For many vaccines there is good evidence that minor or short-term temperature changes do not affect how well the vaccine works. So, as long as the vaccine is used within its shelf life, it will still be effective.
- Although small temporary changes are not likely to affect the safety of the vaccine, nor the way in which it works, it means the vaccine is referred to as being used 'off-label' because it has been stored in a way other than that described in its licence.
- **The decision to allow the vaccine to be used 'off-label' will only be taken if the vaccine is still considered to be safe and effective.**
- This may be the only way the vaccine is available at an appointment and refusal may delay protection against serious infections.
- PTHB PGD's cover 'off-label' vaccine use.

- For vaccines that have experienced a temporary temperature excursion but are subsequently deemed suitable for use, an information leaflet is available for parents, carers and patients to support the 'off-label' use of these products [The use of vaccines that have been temporarily stored outside the recommended temperature range - A brief guide for parents, carers and patients](#)

11.2 Disruption of Cold Chain - Medicines Management Team Responsibilities

On receiving the report of a disruption in the cold chain it is the responsibility of the Medicines Management Team to check that:

1. The 'Disruption of Cold Chain' form has been completed fully. If the form has not been completed fully, it will be returned to the sender, which will delay the investigation.
2. A Datix report has been completed and temperature logs/data downloads submitted.
3. Staff have quarantined and appropriately labelled affected medication in alternative cold storage and have checked that none of the affected stock has been administered to patients.
4. The fridge has been reset, rechecked, and recorded after ONE hour.
5. Investigate the impact of the temperature disruption on the medicines affected using appropriate information sources e.g. Summary of Product Characteristics, contacting the manufacturer, Specialist Pharmacy Services (SPS) - refrigerated medicines stability tool [Refrigerated medicines stability tool – NHS SPS - Specialist Pharmacy Service – The first stop for professional medicines advice](#).
6. Document the outcome on the 'Disruption of Cold Chain' form and report back to the person who reported the incident, who will then be expected to carry out the required actions.
7. The refrigerator spreadsheet for documenting temperature breaches/excursions must be completed fully, and all documentation must be saved in the appropriate file(s) access here: [General | Cold Chain Breaches \(ALL MM Teams\)](#)

12. Disposal of refrigerated medicines/vaccines

Careful consideration should be given to minimising the amount of stock held, as

unwanted medicines and vaccines cannot be returned and can result in costly waste for PTHB.

For vaccines that have been reconstituted for immunisation, at the end of an immunisation session any remaining reconstituted vaccine must be placed in a sharps bin for incineration.

Vaccines that are time expired, no longer suitable for use, used or partially used vaccine ampoules or vials should be disposed of in the appropriate puncture resistant 'sharps' container. Waste containers will be collected for incineration at a suitably authorised facility.

Out of date stock must **not** be stored in the fridge.

For disposal of unusable medicinal products, discard according to general disposal arrangements. Refer to Powys sustainable waste management procedure [PTHB | FTP 002 Sustainable Waste Management Procedure](#) and/or Powys medicines policy [Medicines Policy - \(Approved 8 September 2022\) Feb 2023 Update](#)

13. Reporting Vaccine Waste

The Health Board will routinely review vaccine and refrigerated medicines wastage to identify trends, recurring issues and opportunities for improvement. This may include analysis of expired stock, cold chain breaches, ordering inaccuracies, clinic cancellations, and unused patient-specific supplies. Findings will be used to support service improvement, inform stock management practices, reduce avoidable waste, and ensure the efficient use of NHS resources. Significant concerns or patterns of excessive wastage will be escalated through appropriate Medicines Management and governance processes, with corrective actions agreed and monitored as required.

All vaccine wastage must be recorded and reported in line with national and local requirements. Vaccines supplied through ImmForm must have any wastage recorded on the ImmForm system to support national stock monitoring and wastage reporting. In addition, vaccine wastage should be recorded on the Welsh Immunisation System (WIS), where system functionality allows, to ensure accurate patient and stock records are maintained. Records should include the reason for wastage, such as expiry, cold chain failure, breakage, contamination, clinic cancellation or

unused doses, to enable trend analysis, support assurance processes and identify opportunities to reduce avoidable waste

13.1 ImmForm

Vaccine wastage must be recorded using the 'Stock Incident Capture' form available on ImmForm.

To access the 'Stock Incident' report you will need to login on to the 'Vaccine Supply System' on ImmForm. When on the site, click the 'Stock Incident' tab, and select 'Stock Incident Capture'.

Record the date of the incident and then the reason for the vaccine wastage.

Include any further description of the stock incident where necessary.

Record the number of vaccine doses lost / destroyed.

Covid, RSV and Flu vaccine waste must be recorded on WIS (as of March 2026). However, please note that more vaccines will likely be moved over to this system for administration and stock management reporting.

13.2 WIS

Vaccine wastage should be recorded in WIS where functionality is available. Staff should update the vaccine record, select the relevant wastage option, and enter the reason for waste (for example expiry, cold chain breach, damaged stock or unused dose). Records should be completed as soon as practicable to ensure accurate stock management and reporting.

13.3 Ordering Replacement Vaccine to compensate for waste following a temperature excursion:

Temperature excursion investigations can take between 2-5 days to complete, and many vaccines can be used either with a reduced expiry or 'off-label' so replacement vaccines should only be ordered to cover any appointments during the investigation time frame BUT only if you have suitable replacement / repaired cold chain storage capacity. DO NOT DISPOSE OF OR REPORT QUARANTINED STOCK AS WASTE UNTIL THE OUTCOME OF THE INVESTIGATION INTO THE TEMPERATURE EXCURSION IS KNOWN.

14. Vaccine Spillage

Every location where vaccines are to be administered should have copies of the Control of Substances Hazardous to Health (COSHH) safety data sheets for the vaccines used, and a spillage kit.

If spillage of vaccine occurs, gloves must be worn, and the spillage soaked up with paper towels immediately.

Any broken glass (sharp) waste should be disposed of using a 'sharps box' and the protective clothing or mopping up materials used should be disposed of in yellow clinical waste bags.

Spillage on skin should be washed with large amounts of water. Report to Occupational Health for further medical advice and complete a Datix report.

Affected eyes should be irrigated well, preferably with sterile 0.9% normal saline.

If the spillage was of a 'live' vaccine, disposal should be in accordance with the procedure for disposal of 'live' vaccine as advised in the disposal section above.

15. Records Retention

Records should be readily accessible, for easy reference. As the shelf life of vaccine product specified by vaccine manufacturers can be up to four years or longer, retaining ALL records for five years will generally enable the full storage history of the vaccines to be accounted for.

16. Monitoring Compliance, Audit & Review

Internal Health Board Sites

Designated persons (or nominated deputy) are responsible for undertaking or ensuring that routine cold chain compliance and governance checks are undertaken in areas where medicines / vaccines requiring cold storage are stored / used. These compliance checks should be undertaken at least quarterly and should include as a minimum:

- Checks that staff have completed annual ESR cold chain training.
- Checks that staff have read, understood and are working to this SOP.
- Checks that those staff managing, distributing and transporting vaccines have completed annual GDP training
- Checks that all vaccines are kept in their original packaging during storage
- Checks that medicines/vaccines are stored in accordance with this SOP.
- Checks that temperature monitoring and recording of the actual, maximum and the minimum temperatures is taking place on each working day and that the fridge is being reset.
- Checks that stock is regularly rotated to ensure that medicines/vaccines with the shortest expiry date are moved to the front of the refrigerator and used first.
- Checks that any expired/waste medicines/vaccines are discarded via the appropriate waste stream and recorded as waste as per local SOPs.
- Checks that training has been undertaken and competency achieved for the use of Helapet and/or electronic vaccine porters.

A cold chain compliance and governance checklist can be found in Appendix L and can be downloaded from the Medicines Management Team website [Refrigerated Medicines / Vaccines - Powys Teaching Health Board](#)

Compliance with this SOP will be audited during Medicines Management audits of wards / departments. This SOP will be reviewed every three years or earlier should changes to legislation or to practice indicate otherwise.

Primary Care Contractors

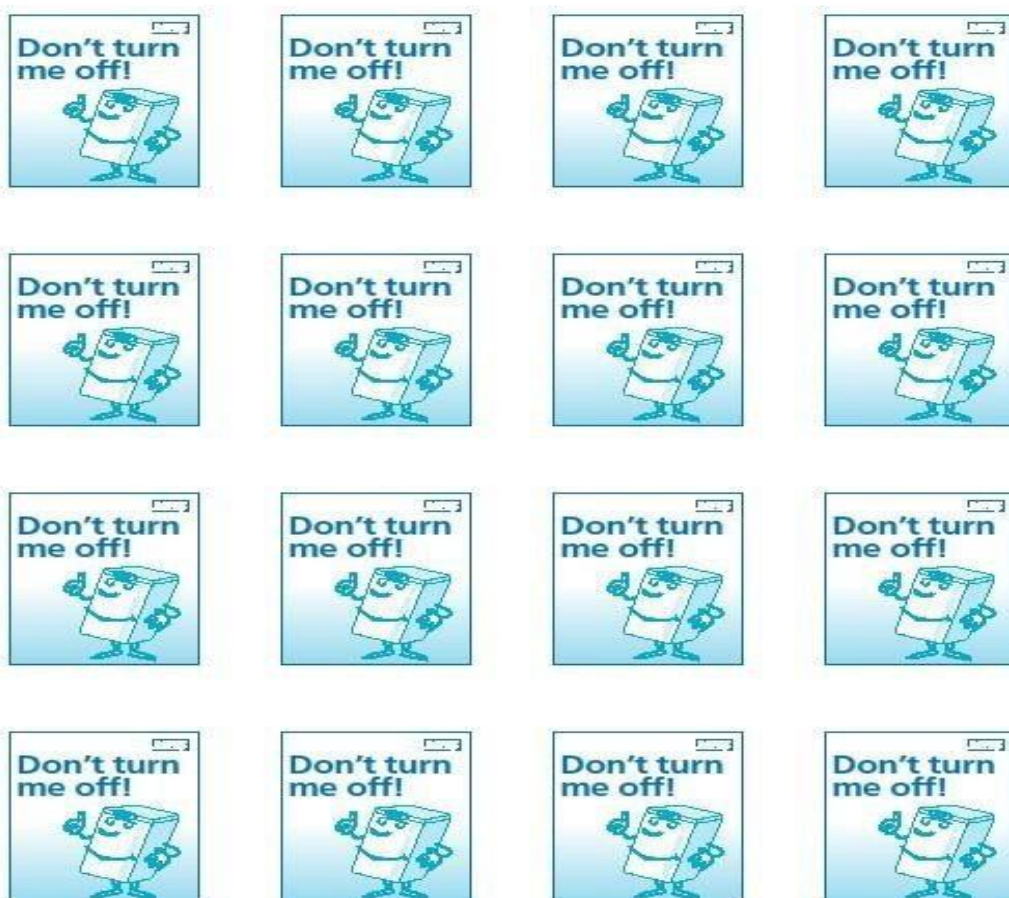
Primary care contractors are expected to undergo a medicines management audit at least once every two years, or more frequently where concerns have been identified through routine monitoring, incident reporting, governance processes or previous audit findings. To minimise duplication and support efficient use of resources, these audits may be undertaken in conjunction with other scheduled assurance activities, including contract monitoring visits, Dispenser Services Quality Scheme (DSQS) assessments, Controlled Drug destruction visits, or other Medicines Management reviews. Audit findings will be documented, with any identified risks, non-compliance or required improvements discussed with the contractor and followed up as appropriate

17. References

- Powys [Medicines Policy - \(Approved 8 September 2022\) Feb 2023 Update](#)
- Royal Pharmaceutical Society (2018). Professional guidance on the safe and secure handling of medicines. London: RPS.
- [MHRA inspectorate. Refrigerated medicinal products, part 1: receipt and storage - some things to consider.](#)
- [MHRA inspectorate. Refrigerated medicinal products, part 2: Transportation, packing, temperature management, the use of third party couriers and returns – some things to consider](#)
- [Immunisation against infectious disease](#), the green book.
- [British National Formulary](#)
- www.helapet.co.uk
- www.labcold.com
- [Cold chain management – SPS - Specialist Pharmacy Service – The first stop for professional medicines advice](#)
- [Vaccine resources for health and social care professionals - Public Health Wales](#)
- [Vaccine incident guidance: Responding to errors in vaccine storage, handling and administration \(publishing.service.gov.uk\)](#)

Appendix A

*Suggested positioning:
Electric plug or socket*



Appendix B

Medicines / Vaccine Fridge Cleaning / Defrosting Log

Pre- maintenance				Process	Post- maintenance			Signature	
Date	Fridge identity (i.e., vaccine fridge/cool pack fridge)	<u>Fridge to be cleaned/defrosted</u> Temperature preclean/defrost (between 2-8C) Note time	<u>Alternative storage fridge</u> Temperature before loading with temporary stock (between 2-8C) Note time	Cleaned/Defrosted (Please indicate)	<u>Alternative storage fridge</u> Temperature before stock transferred back to original fridge. (between 2-8C) Note time	<u>Cleaned/defrosted fridge</u> Temperature post clean/defrost (between 2-8C) Note time	<u>Cleaned/defrosted fridge</u> Temp 1 hour after reloading. Note time	Have fridges been reset?	Completed by
Example 01/10/2023	Medicines fridge AP ward	3.4°C 16:35	MIU fridge 3.7°C 16:30	Cleaned	3.5°C 18:00	5.0°C 18:10	3.7°C	Y	JB

Powys Teaching Health Board is the operational name of Powys Teaching Local Health Board

Appendix C

This fridge contains temperature sensitive medicines and vaccines. The temperature must always be between 2°C and 8°C

Read.....Record.....Reset.....Recheck.....React.....

Read

Take daily readings of the thermometer's actual, minimum and maximum temperatures.

Record

Record temperatures in a standard way on the standard form and sign each entry on the recording sheet

Reset

Reset the thermometer after each reading. Also reset the thermometer when temperatures stabilise after periods of high activity (loading or unloading the fridge).

Recheck

Recheck the temperature after ONE hour if out of range temperature then read, record, reset and react.

React

The person making the recording must take immediate action if any temperature falls out of the range 2°C to 8°C. See disruption of cold chain guidance in Powys SOP for Safe & Secure Management of Refrigerated Medicines and Vaccines. The action(s) taken must be documented and should include contacting Medicines Management 01874 712641

If the fridge fails

Keep the door closed and locked if possible. This will keep the contents cool and quarantine them.

DO NOT STORE FOOD DRINK OR CLINICAL SPECIMENS IN THIS FRIDGE

Appendix D

Record of daily monitoring of medication refrigerators Department_____ Month_____ Year_____

Date	Time	Temperature Load / Air			Reset (ck when reset to actual temp)		Any Temp (Actual, Min or Max) outside recommended range? (please circle)	Temperature Rechecked after ONE hour			Action if any temperature outside normal range (PTO if necessary)	Signature
		Actual	Min	Max				Actual	Min	Max		
1							Yes No					
2							Yes No					
3							Yes No					
4							Yes No					
5							Yes No					
6							Yes No					
7							Yes No					

8						Yes No					
9						Yes No					
10						Yes No					
11						Yes No					
12						Yes No					
13						Yes No					
14						Yes No					
15						Yes No					
16						Yes No					
17						Yes No					

18						Yes No					
19						Yes No					
20						Yes No					
21						Yes No					
22						Yes No					
23						Yes No					
24						Yes No					
25						Yes No					
26						Yes No					

Re: MIUs/Birthing units/Theatres – when these areas are not staffed, this MUST be recorded on the above log **N.B. If unit is not staffed for more than two consecutive days an arrangement MUST be made to perform a check on the third day.**

Date	Time	Comments (use more than one line if necessary)	Signature

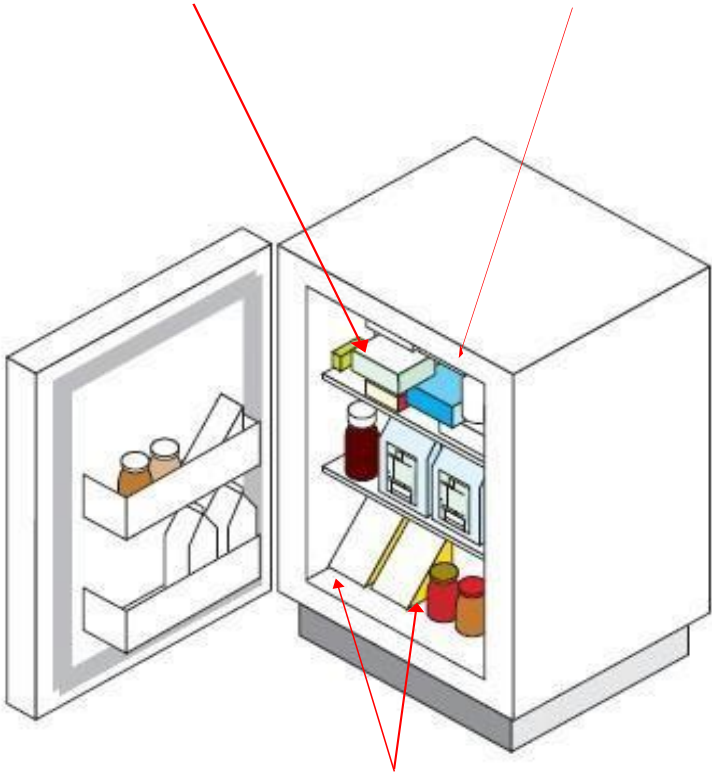
**FOR ADVICE CONTACT MEDICINES MANAGEMENT ON 01874 712641 OR IF OUT OF HOURS CONTACT SUPPLYING
HOSPITAL PHARMACY (i.e. NHH)**

Appendix E Incorrect Fridge Storage

Different Medicines stored incorrectly

No Fridge Temperature being monitored

*Door
Open*



Food and drinks stored in fridge with medicines/vaccines

Appendix F Correct Fridge storage

Door is closed

Fan not blocked allowing air to circulate

Fridge temperature is in range between 2°C and 8



Same Medicines are grouped together

No medication/Vaccines stored on the bottom of the fridge

No medication/vaccines touching the sides of the wall

Appendix G Stock Management Log

[illegible]

Appendix H

VaccinePorter®

6



Prior to use:

Before inserting each Medicoool® into the VaccinePorter® system, please follow these instructions:

- Refrigerate 6 x Medicoool® 28 at +5°C, $\pm 3^{\circ}\text{C}$ for a minimum of 24 hours*.
- Medicoool® cool packs should be stacked flat on storage shelves no more than 3 high, with 50mm of free air circulation around the packs.

Instructions for Use - Please Turn Over

*Due to the potential variation in fridge performance, frequency of opening and other fridge contents, it is recommended that Medicoool® pre-conditioning is validated by the user.

Lid

Product (Vaccines)

6 x Medicoool® MC28
Weight: 600g per Medicoool®
(supplied separately)

Inner moulding

Protective
Carrying Case



CP1421/1017

Appendix H continued

Vaccine Porter - Instructions for Use

System assembly and product packing

Pack and seal the VaccinePorter® system swiftly, as follows:

1. Place 1 x Medicoool® 28 on the base of the system.
2. Place the product to be transported in the centre of the VaccinePorter®.
3. Place 1 x Medicoool® 28 on each side of the system, surrounding the Product.
4. Place 1 x Medicoool® 28 on top of the product.
5. Close the lid and ensure it is sealed by closing the outer carrying case immediately.
6. Only open the VaccinePorter® if necessary and remember to re-seal as soon as possible.

Although the Vaccine Porter® has been validated so that the product can be added and removed from the sealed system during use, do not open unnecessarily and remember to re-seal the system quickly.

To re-use the system:

In case you decide to re-use the system, please follow these steps below prior to conditioning the Medicoool® cool packs:

- A weight check and visual squeeze check will need to be carried out to ensure there is no loss of liquid. If the Medicoool® is $\pm 20\text{g}$ different to the weight shown on the Medicoool® or shows any signs of leaking, then it is recommended that it is disposed of.
- Chipped or broken polystyrene inners must be replaced before use as this can affect the thermal performance of the VaccinePorter®.

[Further information is available from:](#)

Helapet Limited, Lister House, Blackburn Road, Houghton Regis, Bedfordshire. LU5 5BQ
Telephone 0800 0328 428 Fax +44 (0) 1582 501981 E-mail:
sales@helapet.co.uk | Web: helapet.co.uk

Appendix I

Portable Vaccine Porter Temperature Monitoring Log (Between 2-8C) v 1.0

Session Location

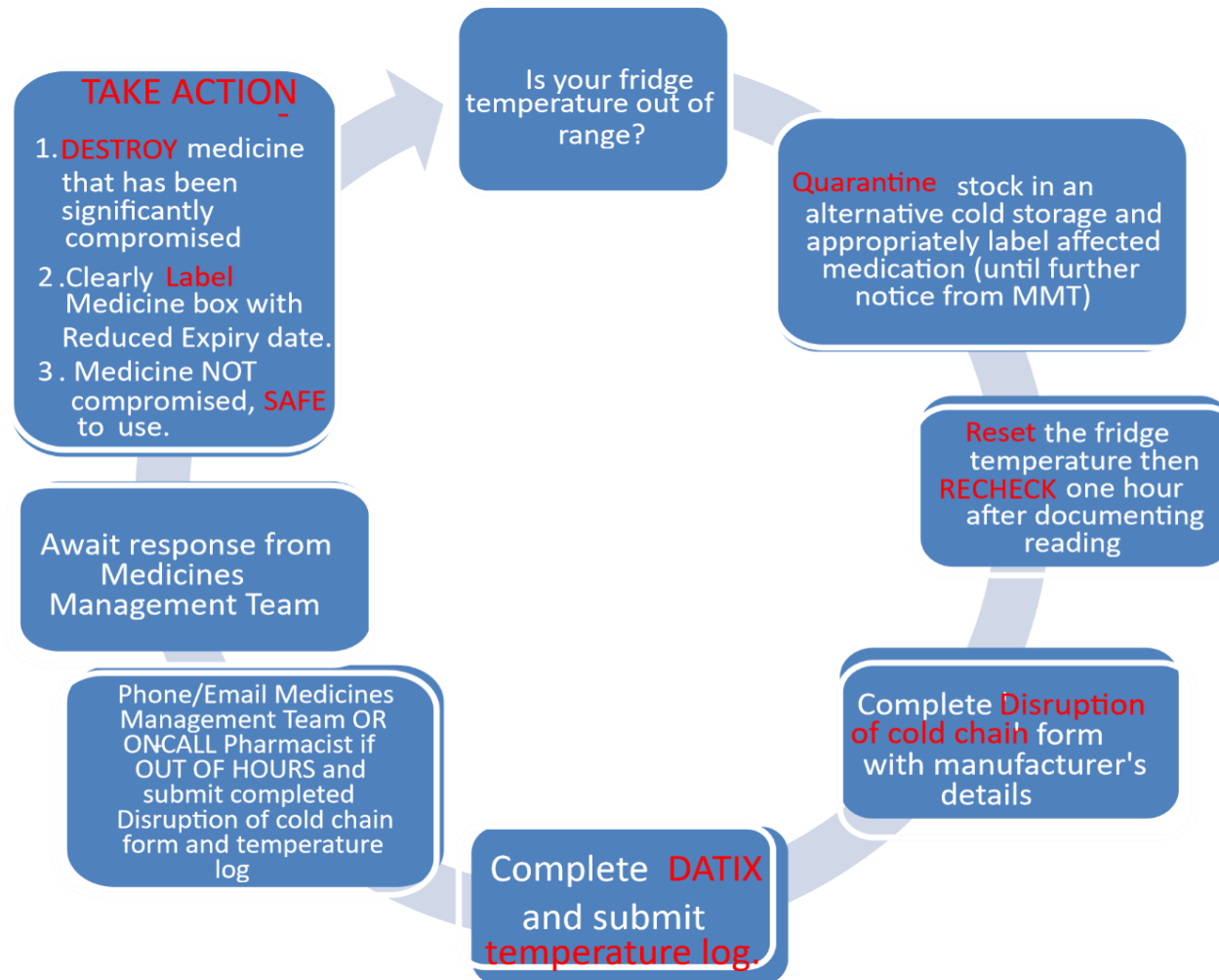
Session Lead **Session Date**

Session Time: **Vaccine in Use:**

[illegible]

Appendix J

**Is your fridge temperature out of range?
Display near fridge for immediate reference**



Appendix K

DISRUPTION OF COLD CHAIN FORM – MEDICINES & VACCINES v2

Any affected medication MUST be quarantined and may only be used following recommendations to do so from Medicines Management Team (MMT)

The following MUST be provided to the MMT with this form: Data Logger download / Temperature Monitoring Log (if used)

THIS FORM MUST BE FILLED IN FULLY TO AVOID DELAYS WITH INVESTIGATIONS

Location:	Member of staff reporting incident:	Datix Number:	Date time of report:
What temperature did the fridge reach during the excursion and for how long? <u>Last recorded temperatures before incident occurred</u> Date and time: min/max/actual:		Clear description of the incident:	

In addition to this form, please provide MMT with details of any medicines / vaccines affected by the temperature excursion that have been administered to patients e.g., The name of the medicine/vaccine, date and approx. time of administration, No. of patients affected, any actions taken or planned (e.g., patient follow-up, clinical advice sought)

1	2	3	4	5	6	7	8	9	10
Generic and/or Branded Name of Medicine / Vaccine	Manufacturer name of Medicine / Vaccine	Batch Number	Expiry Date	Quantity	Date Received into Stock	Confirm it has been quarantined in alternative cold storage (Tick)	Has this medicine/vaccine had a previous temperature excursion? (Yes / No)	For completion by MM Team / Pharmacy - List information sources. - Describe any reduction in shelf life or restrictions in usage. - Record any other relevant information - Record the final fate of the product - Vaccine wastage logged on IMMFORM Y / N	Loss £ (To be completed by MM team)

Complete top sections and columns 1 to 8 and e-mail to Info.medicinesmanagement.powys@wales.nhs.uk

Medicines Management Team will respond to this report within 5-7 working days.

Please note that if any medicines or vaccines quarantined as a result of this temperature excursion are required for a planned clinic or appointment, you should consider placing an order for the necessary stock. Care should be taken to avoid over-ordering.

Appendix L

Cold Chain Compliance and Governance Checklist

Location: _____

This checklist is to be used to monitor compliance with Policy MMP 427 Safe and Secure Management of Refrigerated Medicines / Vaccines, and associated training and governance requirements.

- ☐ Checks that staff have completed annual ESR Cold Chain training.
- ☐ Checks that staff have read, understood and are working to this policy.
- ☐ Checks that staff managing, distributing and transporting vaccines have completed annual Good Distribution Practice (GDP) training.
- ☐ Checks that all vaccines are kept in their original packaging during storage.
- ☐ Checks that medicines and vaccines are stored in accordance with this policy.
- ☐ Checks that temperature monitoring and recording of actual, maximum and minimum temperatures is undertaken each working day and that the refrigerator is reset
- ☐ Checks that data loggers are being used appropriately, including with vaccine porters if used by the service.
- ☐ Checks that stock is regularly rotated so that medicines and vaccines with the shortest expiry dates are moved to the front of the refrigerator and used first.
- ☐ Checks that expired or waste medicines and vaccines are disposed of via the appropriate waste stream and recorded as waste in line with local SOPs.
- ☐ Checks that training has been undertaken and competency achieved for the use of Helapet and/or electronic vaccine porters.

Completed by: _____

Role: _____

Date: _____