

Daily procedure adopted to ensure cold chain in the vaccine storage refrigerator at the MOH Office

Responsibility:

- This should be performed daily, **twice a day**, by a member of the health staff nominated by the MOH.

*It is essential that this staff member is well versed and possesses a thorough knowledge on the importance of the cold chain.

- Another member of the staff should be trained on cold chain maintenance to perform the necessary duties when the nominated member is off duty.

Monitoring cold chain and recording

- On office days (including Saturdays) cold chain should be checked twice daily (at 8 am & 3 pm on weekdays and 8 a.m. & 1 p.m. on Saturdays) and information/data should be recorded in the cold chain record.
- Temperature inside the refrigerator should be viewed and recorded twice a day while it would be sufficient to obtain other cold chain data once (morning) a day.
- Obtaining the cold chain data should be the first task once the refrigerator is opened.
- Ensure maintenance of refrigerator temperature at around 5°c ($5^{\circ} \pm 1^{\circ}c$).
- Information on temperature should be obtained from the thermometer (Mercury Column thermometer), placed inside the refrigerator while the digital display outside should not be used for this purpose.
- The thermometer reading should be marked by "X" in the relevant cage against the temperature, including the date & time of the relevant day (am/pm).
- In case the thermometer shows a recording below 2°c or above 8°c, it should be notified immediately to the MOH/PHNS/SPHI/SPHM.
- Fridge Tag provided in the refrigerator for recording temperature data should be checked at least once a day. The Fridge tag temperature should not be used for maintaining the temperature chart.
- Check the status of the Fridge Tag and record the status in the relevant space in the cold chain record.
 - OK - "√"
 - Alarm – X

If the Fridge Tag indicates "√", record "√" in the space given and if it indicates "X" record "X" in the cold chain record.

Inform MOH immediately if alarm "X" appears in the first time or appear with the warning symbol (Please refer the Fridge Tag manual).



- Press “read button” of the Fridge tag and view the minimum and maximum temperature recorded for the last 24 hour duration and enter the figures in the given space.
- The Vaccine Vial Monitor (VVM) of the OPV vaccine which is the most sensitive to temperature should be viewed once a day.
- Monitoring one OPV vial from each series out of the two stocks stored in the refrigerator (currently used and recently received) would be sufficient.

In this instance, record the extreme stage out of the two vials.

- Record the current stage of the VVM in the cold chain record. If it has reached the 3rd stage (discarded point) or if a marked difference from the previous day is observed, MOH should be notified immediately.

Change of Thermostat of the refrigerator

- Change in the thermostat should be carried out only by the member of the health staff monitoring the daily cold chain.
- Prior permission from the MOH should be obtained for such change.
- Instances of such change should be recorded clearly in the cold chain record.

For this purpose, mark an asterisk in the date column and record below in the cold chain record under the asterisk.

- When the temperature control is adjusted special attention should be paid to temperature fluctuation.
- In case of electricity failure adhere to instructions provided.

Instances of suspected exposure of vaccines stored in the refrigerator to excessive temperature

1. When the thermometer records over 8°c
2. Fridge Tag indicating "X "symbol with upward non-blinking arrowhead
3. Change in the VVM
4. Electricity failure for over 8 hours

Instances of suspected exposure of vaccine in the refrigerator to freezing

1. Thermometer indicating less than 0°c
2. Fridge Tag indicating "X "symbol with downward non-blinking arrowhead
3. Environment maintaining low temperature
4. Freeze tag indicating "X "symbol (if present)

If vaccines in the refrigerator are suspected to have been exposed to freezing or excessive temperature, a printout of the fridge Tag should be obtained, and suitable action taken after studying.

- When the temperature in the refrigerator is proven to have fallen below zero (0°C) for any length of time, conduct the Shake Test to ascertain freezing of freeze sensitive vaccines.
- Details of any detected cold chain failures occurring during the month concerned, should be documented accordingly in the cold chain record.
- Incidents pertaining to cold chain failures should be further explained on the opposite side of the cold chain monitoring chart, including the reason/s and action taken if any.
- After making entries in the cold chain record the person concerned should place his/her initials in the cage provided.
- At the end of each month, the MOH should inspect the cold chain record and place his/her signature.
- At the end of each month, cold chain records (printouts) should be filed and kept on record and retained safely for atleast 3 years.

Obtaining printouts of Fridge Tag readings

- Printouts of Fridge Tag readings should be obtained once in two weeks.
- The printouts should be checked by the MOH and temperature fluctuations observed.
For example:
 - Whether the temperature in the refrigerator and the temperature recorded in the cold chain record tally
 - Whether the normal temperature in the refrigerator fluctuates around 5°C for accuracy.
- One copy thereof should be forwarded to the Regional Epidemiologist and the other filed of record with the signature of the supervisor.

Instances of exposure to excessive temperature / freezing should be identified and action taken thereof should be recorded. Such instances should be intimated to the Regional Epidemiologist through a report.

- If the printer in the institution is not in working order, the fridge tag should be connected to a computer once in two weeks and the temperature table on the computer screen should be observed.

This copy should be subsequently filed in a separate folder in the computer. It is important to name this file in the Desktop for easy reference.

- If the cold chain equipment (Fridge Tag/Thermometer) is malfunctioning, the Regional Epidemiologist should be informed through the MOH.
- It is equally important to maintain cleanliness of the refrigerator. Once the refrigerator is cleaned, the information should be entered in the given table.