Keep the Vaccines Safe and Effective to Impact Child Health

Vaccines must be kept at the right temperature to protect children in your community and avoid wastage. Vaccines allowed to freeze or to get too warm lose potency. You play a critical role in protecting children from disease by keeping vaccines safe and effective.

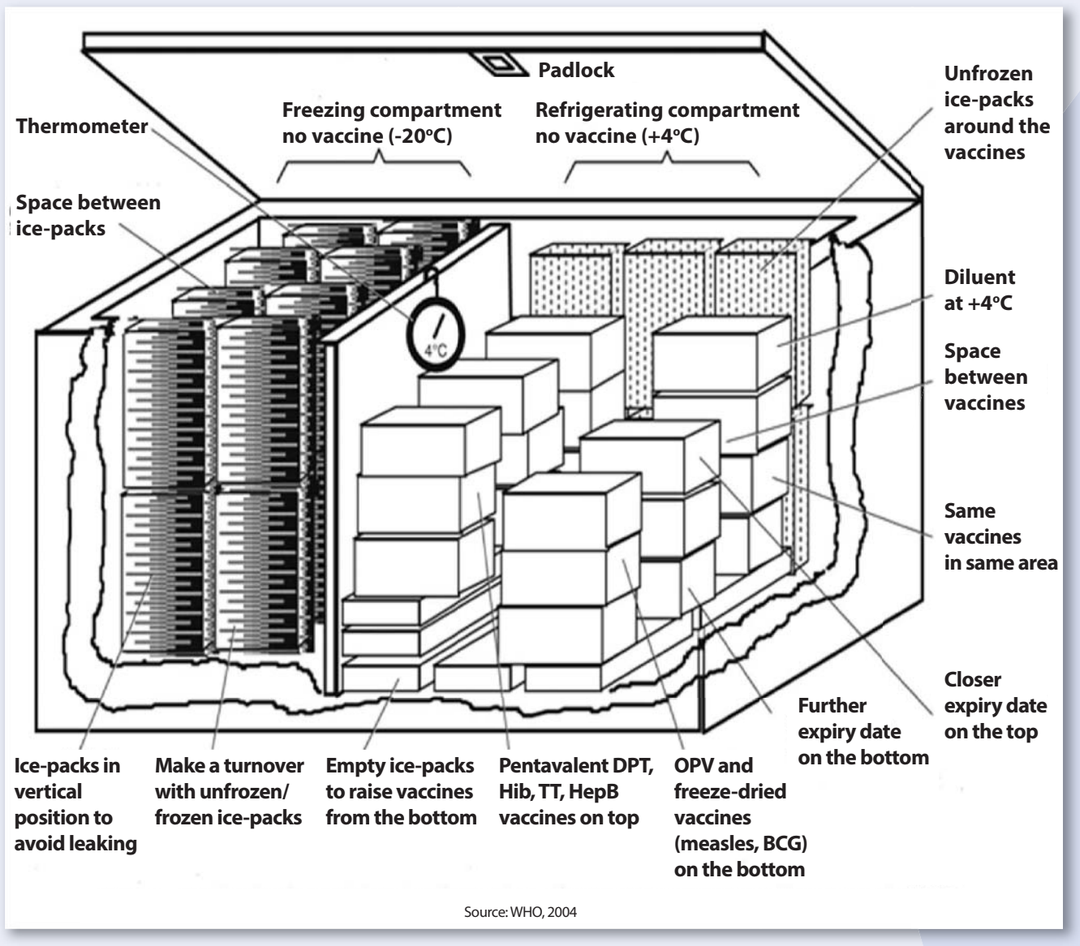
To help ensure the children in your community always get vaccine that is safe and effective:

- Stock vaccines as recommended for the type of fridge you have.
- Monitor and record the vaccine fridge temperature frequently.
- Take appropriate action if the fridge temperature is too high or too low.
- Check the vaccine vial monitors and discard any over-exposed vaccine.

1. Stock the vaccines and diluents properly. For top-opening fridges:

- Store all vaccines in mesh baskets.
- Place the thermometer on the upper basket.
- Stack vaccines closer to expiry and with VVM stage 2 in the front to use first.
- Keep space between boxes so cold air can circulate between them.
- Store opened and returned vials in a box marked "use first".
- Store diluent at least 24 hours before use.
- Open the door as infrequently as possible.
- Never store vaccine or diluent in the freezer.
- Separate out vaccines to be discarded. **Discard:**
  - vaccines that are expired
  - vials with the VVM at stage 3 or 4
  - vials of PCV, BCG and measles vaccine opened for more than 6 hours or at end of RI session
- Follow the woreda policy for vaccine disposal.
- Use the vaccine fridge only for vaccines, diluents, and water packs.

Figure 1. Arranging vaccines in top opening refrigerators



Source: WHO, 2004

2. Monitor the refrigerator temperature twice daily, including weekends

- Set fridge thermostat so temperature is around 8° at the hottest part of the day.
  - Once fridge temperature stays between 2° and 8°, do not adjust the thermostat.
- Every morning, and again during the hottest part of the day, read the current temperature on the Fridge-tag.
- Immediately record the temperature on the Fridge Tag Temperature Recording Sheet.
  - Make your own recording sheet if none is available.

Figure 2. Fridge-tag

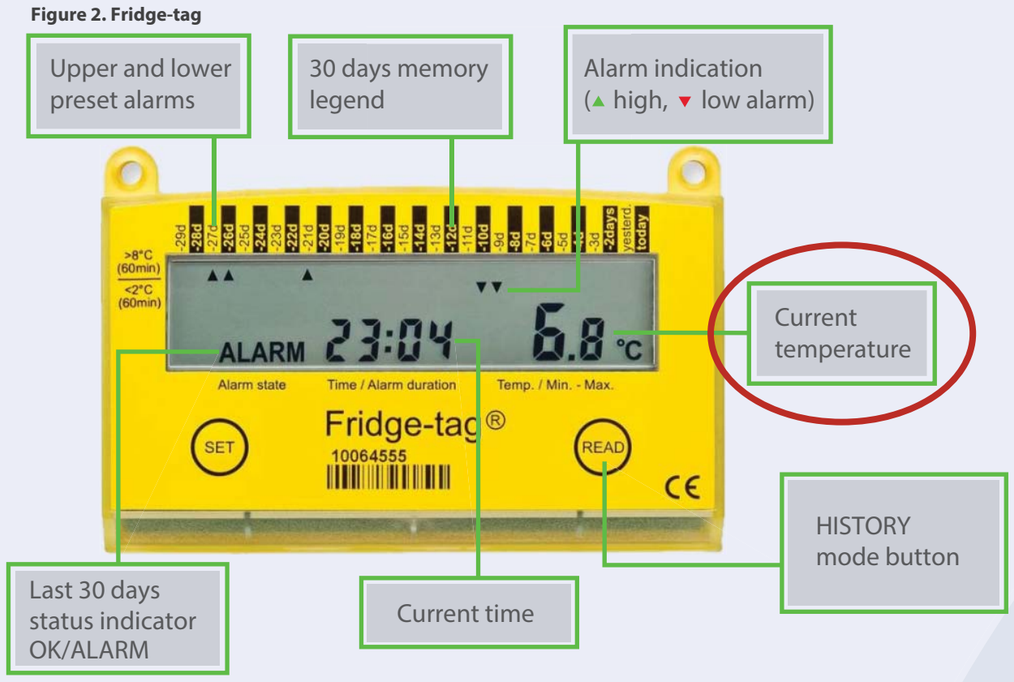


Figure 3. Fridge Tag Temperature Recording Sheet

Region:_____ Zone:_____ Woreda:_____ Facility Name:_____																													
Refrigerator model: _____ Refrigerator No:_____ Fridge Tag ID Number: _____																													
Record the refrigerator temperature twice per day: Temperature should stay between 2 – 8 0C to protect vaccines. Month_____ Year_____																													
	Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Today	Morning Temp. AM (°C)																														
	Evening Temp. PM (°C)																														
Previous day	▲ Maximum temp. (°C)																														
	▲ Alarm (Y/N)																														
	▲ Duration (HH:MM)																														
	▼Minimum temp. (°C)																														
	▼Alarm (Y/N)																														
	▼Duration (HH:MM)																														
Date of alarm and corrective Measures taken for Temperature Excursions																													
Date of alarm		▼	▼	Actions taken (code)*																									

(Indicate type of an alarm by √(tick) under ▲ or ▲ for high and low temperature respectively for specific date of alarm)

- **Use the following code for actions to be taken during alarm:**

1. Vaccine transferred 2. VVM checked 3. Frozen vaccine discarded 4. Shake test conducted
5. Refrigerator maintained 6. Reported to higher level 7. Thermostat adjusted 8. Other measure (specify)

In addition to recording the code for taken action, outcome of shake test and VVM checking has to be recorded

3. Take action if the fridge is too warm or too cold

A. If the refrigerator temperature is above 8°

❶ Protect the vaccines

Relocate the vaccines to prevent further heat exposure. **Deal with heat-sensitive vaccine first** (OPV, then BCG & Measles)

- Transfer the vaccines to one or more of these:
  - Another vaccine fridge at the facility
  - Cold boxes or vaccine carriers with chilled water packs
  - A near-by vaccine storage facility

❷ Separate the damaged vaccines from the usable

- Check the VVM of all vaccine vials.
- Document and discard all vials with the VVM at stage 3 or 4 (see below).
  - Involve a supervisor if possible.

❸ Fix the underlying problem – *this is crucial.*

- Check to see if the electric cable is unplugged. If so, plug it in.
- If there has been a power outage, and the fridge has a reset button, hit the reset button once the power returns.
- If the fridge door is not fully closed, close it correctly.
- If the fridge door is not well-sealed, **clean or replace the seal**.
- If the thermostat is set too high, **set it to between 2° and 8°**.
- If the fridge has stopped working properly, **send for a technician to repair it**.

B. If the refrigerator temperature is below 2°

❶ Safeguard the freeze-sensitive vaccines

Immediately relocate all liquid vaccines to prevent further freeze exposure. **Deal first with freeze-sensitive vaccines** (Pentavalent, TT, PCV, Rota and IPV).

- Transfer the vaccines to one or more of these:
  - Another vaccine fridge at the facility
  - Cold boxes or vaccine carriers with chilled water packs
  - A near-by vaccine storage facility

❷ Separate the damaged vaccines from the usable

- Discard any vial frozen solid

❸ Fix the underlying problem – *this is crucial.*

- If the thermostat is set too low, **set it between 2° and 8°**
- If vaccines or the Fridge-Tag are incorrectly stored in the fridge (e.g., too close to the wall, at the bottom of an Ice Lined Refrigerator, or close to freezing compartment), **put them in the recommended places** (see Figure 1)
- If the fridge thermostat is broken, contact your supervisor to **have the thermostat repaired by a technician**.

C. Document and inform relevant people whenever the temperature falls out of the acceptable range of +2°c to + 8°c

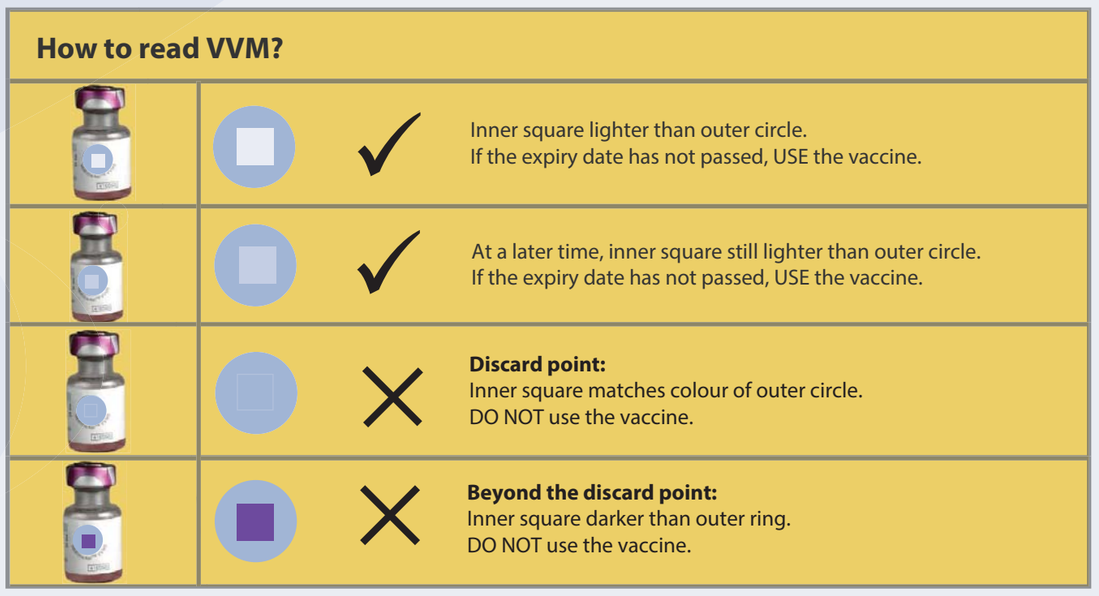
- On the monitoring chart, **document the characteristics of the alarm**, the diagnosis, and the actions taken.
- **Contact the cold chain technician** supporting the facility if the fridge needs repair.
- **Inform the relevant EPI manager/focal person** urgently if the problem is significant or urgent (e.g., vaccine fridge not safe or not functional, significant vaccine loss).

The facility head, cold chain manager, EPI focal person, and other responsible staff should review the temperature recording sheet together at least monthly and address any problems.

4 Check the VVM after a fridge problem and before transporting or opening the vial

Follow the guidelines in Figure 4 to determine whether to discard the vaccine.

Figure 4. Vaccine Vial Monitor Instructions



UI-FHS Universal Immunization through Improving Family Health Services

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