

## Overlooked Crisis: Why healthcare facilities must prioritise refrigeration for vaccines

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**Vaccine storage should be a non-negotiable priority for every healthcare provider**



In the battle against infectious diseases, vaccines serve as our most potent weapon. Yet, a silent crisis looms over healthcare facilities worldwide—one that is rarely acknowledged but has profound consequences: the lack of appropriate refrigeration measures. Despite technological advancements and increased awareness, improper vaccine storage continues to jeopardize global immunization efforts, rendering life-saving doses ineffective and putting countless lives at risk.

### Why Refrigeration Matters for Vaccines

Vaccines are biological products that require strict temperature controls to maintain their efficacy. Previously, most vaccines were stored at positive temperatures. However, COVID-19 changed that, as some vaccines required much lower temperatures, sometimes extremely low. As a result, a wider range of storage temperatures is now being considered. Deviations from these conditions can lead to irreversible degradation, reducing their effectiveness and, in some cases, rendering them completely useless.

The consequences of improper refrigeration extend beyond financial loss. When compromised vaccines are administered, they fail to protect against diseases, leading to potential outbreaks and a loss of public trust in immunization programs. This issue is especially pressing in regions with erratic power supply and outdated cold storage infrastructure, where temperature monitoring is either inconsistent or non-existent.

## **The Gaps in Healthcare Facility Practices**

Despite clear guidelines many healthcare facilities do not adhere to proper refrigeration protocols. Several factors contribute to this negligence:

- **Lack of Awareness:** Many healthcare providers underestimate the impact of minor temperature fluctuations.
- **Inadequate Infrastructure:** Some facilities still rely on standard refrigerators instead of purpose-built medical refrigeration units.
- **Power Supply Issues:** Frequent power outages without proper backup solutions lead to temperature excursions.
- **Poor Monitoring Systems:** Many facilities do not use continuous temperature monitoring devices, which are essential for ensuring compliance.

Addressing this issue requires a multi-pronged approach involving investment, education, and regulation. Here are key measures that healthcare facilities can adopt:

1. **Upgrade Refrigeration Infrastructure** Healthcare facilities must invest in purpose-built medical refrigerators and freezers with precise temperature control mechanisms, ensuring compliance with WHO and CDC guidelines.
2. **Implement Continuous Monitoring Systems** Digital data loggers and IoT-enabled monitoring devices can provide real-time temperature tracking, alerting personnel to any deviations and preventing vaccine spoilage.
3. **Ensure Backup Power Solutions** Uninterrupted power supply systems, including solar-powered refrigeration and generators, should be standard in all healthcare centres, especially in regions with frequent electricity failures.
4. **Regular Staff Training** programmes for healthcare workers must emphasise the importance of vaccine refrigeration, proper handling procedures, and emergency response protocols in case of equipment failure.
5. **Strengthen Regulatory Compliance** Governments and healthcare regulatory bodies must enforce stricter compliance checks, conducting routine audits to ensure adherence to proper refrigeration practices.

The importance of refrigeration in healthcare facilities is not a secondary concern—it is a cornerstone of effective immunisation programmes. The failure to recognise this can lead to catastrophic public health outcomes.

As global health threats continue to evolve, ensuring reliable and efficient vaccine storage should be a non-negotiable priority for every healthcare provider. The time for change is now—before the next preventable outbreak becomes a reality.

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