



Evaluation of Operating Room Cold Box Temperature Monitoring Against Hospital Policy and RCoA Good Practice Standards

Dr Saad Ur Rehman • Dr Fayyaz • Dr Imran • Dr Jamil • Laraib



Introduction / Background

- Certain medications, including chemotherapeutic agents and other high-risk drugs, require storage at 2–8°C to maintain stability and efficacy.
- The OR cold box is used for temporary storage of these medications during surgical procedures.
- Inadequate temperature control can compromise drug potency, patient safety and treatment outcomes.
- Regular monitoring and adherence to policy/guidelines are essential.



Objective



To evaluate the temperature monitoring of the operating room cold box against hospital policy and RCoA Good Practice Standards and to identify areas for improvement.



Target

100% of readings within 2–8°C.



Methodology

- Study design:** Clinical audit
- Setting:** Operating Rooms, SKMCH&RC Lahore
- Duration:** 3 days (4–8 August 2026)
- Data collection:** 60 temperature readings (2-hourly) from cold box thermometer
- Analysis:** Readings compared with hospital policy (2–8°C) and RCoA standards
- Outcome measure:** Percentage of readings within 2–8°C.



Hospital Policy

- Cold box temperature for medicine storage and disposal: 2–8°C.
- Use of ice packs to maintain temperature.
- Regular temperature monitoring and documentation.
- Corrective action if readings are out of range.



International Guidelines

- RCoA Good Practice Standards (GPAS):**
 - Standard 7.34: Safe storage of medicines (maintain integrity and stability).
 - Standard 7.40: Reliable medicines management systems.
- Emphasize appropriate storage, temperature monitoring, documentation and corrective action to ensure medicine safety.^{1,2}

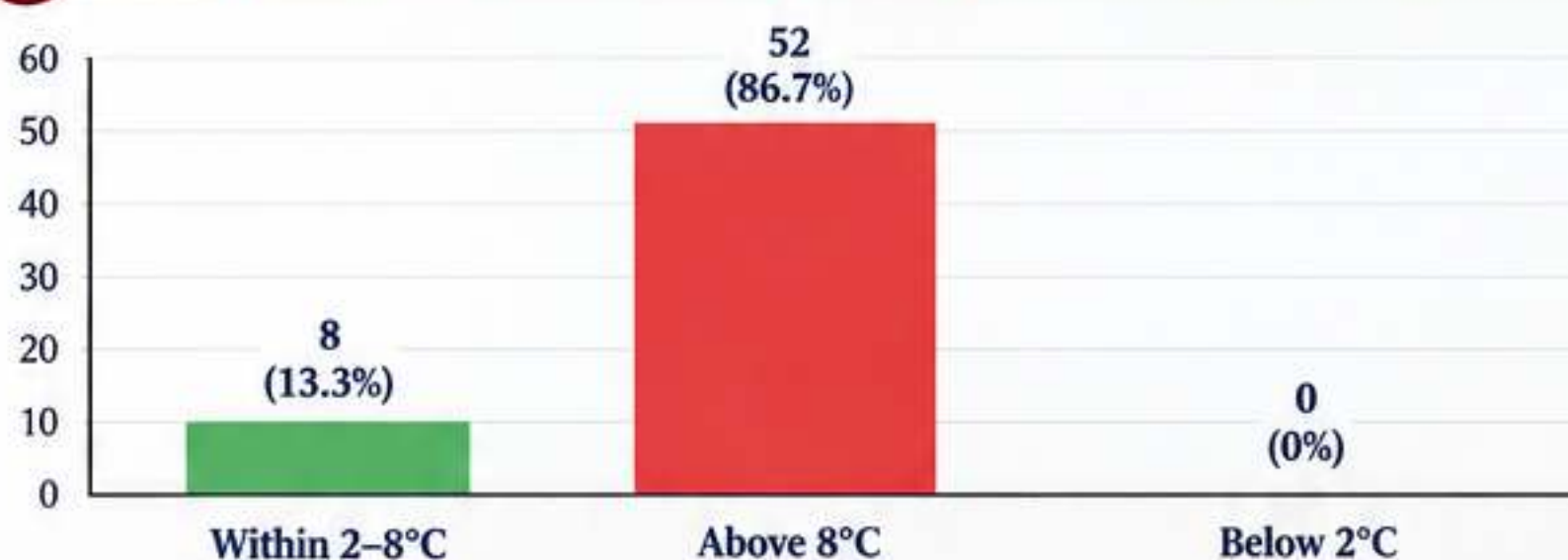


Results (Overall)

Parameter	Number (%)
Total readings	60 (100%)
Within 2–8°C	8 (13.3%)
Below 2°C	0 (0%)
Above 8°C	52 (86.7%)
Temperature range	4.1 – 18.8°C
Documented corrective actions	0/52 (0%)



Temperature Distribution (n=60)



No readings were below 2°C.
No corrective actions were documented for out-of-range readings.

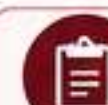
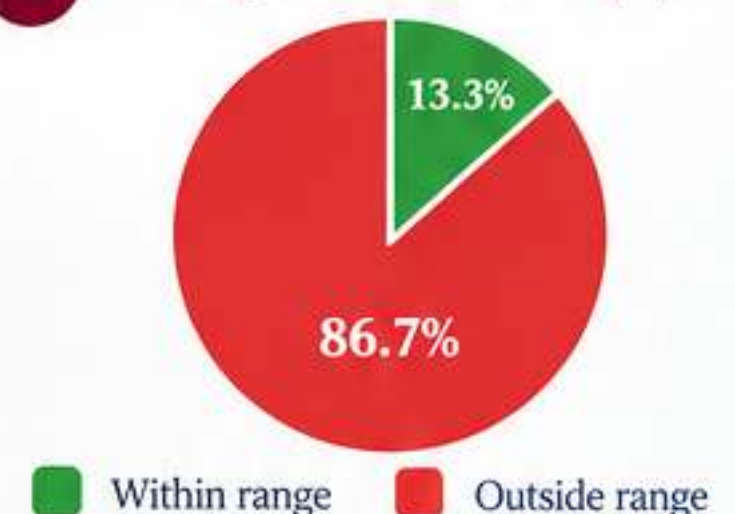


Temperature Range

4.1 – 18.8°C



Compliance with Policy (2–8°C)



Conclusion

- Only 13.3% of temperature readings were within the required 2–8°C range.
- The majority (86.7%) were above 8°C, with a maximum of 18.8°C.
- No readings were below 2°C.
- No corrective actions were documented.
- The practice of using ice packs and changing them twice daily (as observed during the audit) was associated with readings within the desired range.



Recommendations

- Place ice packs in the cold box approximately 1 hour before the case (as observed, this was associated with readings within 2–8°C).
- Replace ice packs twice daily.
- Continue temperature monitoring and documentation as per hospital policy.
- Re-audit after implementation of the above measures.



References

- Royal College of Anaesthetists. Good Practice in the Anaesthetic Management of the Patient (GPAS). 2021. Standards 7.34 and 7.40. Available at: <https://www.rcoa.ac.uk/gpas>
- SKMCH&RC - Hospital Policy: OR Cold Box Temperature Monitoring for Medicine Storage and Disposal. (Local policy document).
- Temperature-Sensitive Medicines. NHS Medicines Management. 2019. Available at: www.nhs.uk