Safeguarding Patients Through Implementation of Safety Standards setup by IPSG: An Audit of Patient Identification, High-Alert Medication Safety, and Infection Prevention

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CONTENT

Introduction and Background of the Study

In the modern landscape of healthcare, patient safety is not just a standard but also a shared ethical and professional responsibility embraced by healthcare institutions worldwide.

As medical technologies evolve and healthcare delivery becomes increasingly complex, so do the challenges in maintaining safe and error-free clinical environments.

Across both public and private hospitals, there is a growing recognition that safety must be embedded in every layer of patient care.

Ensuring that each patient receives the correct treatment at the right time, by properly trained personnel using standardized procedures, is essential for minimizing harm.

By prioritizing patient safety, healthcare systems not only improve outcomes but also build trust and enhance the overall quality of care.

International Patient Safety Goals (IPSG)

•To bring global consistency in safety standards, the World Health Organization (WHO), in collaboration with Joint Commission International (JCI), developed the International Patient Safety Goals (IPSG).

•Among the six goals, this study focuses on three that are particularly integral to daily hospital operations:

IPSG 1: Correct Patient Identification

- Use of at least two unique identifiers (e.g., full name and medical record number)
- Prevents errors such as wrong-patient surgeries, medication errors, or incorrect diagnostics

IPSG 3: Improve the Safety of High-Alert Medications

- Mandates proper labeling, double-checking, secure storage, and strict administration protocols
- Reduces dosage errors, mix-ups, or administration to the wrong patient

IPSG 5: Reduce the risk of Healthcare-Associated Infections (HAIs)

- Emphasizes hand hygiene, PPE, sterilization, and catheter care
- Aims to reduce preventable complications during hospital stays

Aim & Objectives

AIM: To assess the implementation and compliance of International Patient Safety Goals 1, 3, and 5 in a hospital setting.

OBJECTIVES

To understand how well patients are being correctly identified using standard procedures in line with IPSG 1.	To evaluate the handling, storage, and administration practices of high-alert medications as per IPSG 3.	To explore the adherence to infection prevention strategies, especially hand hygiene and environmental cleanliness, in accordance with IPSG 5.	To identify department wise gaps or inconsistencies in the application of these safety goals compared to JCI-recommended standards.	To suggest actionable and achievable improvements to strengthen patient safety practices in the hospital.

REVIEW OF LITERATURE

IPSG Goal	Author(s) & Year	Study Location	Sample Size & Population	Study Type	Key Findings
Goal 1: Patient Identification	Ferguson et al. (2019)	International	Literature review	Narrative review	Misidentification is a complex issue; need for standardized protocols and tech-based solutions.
	Yamamoto et al. (2020)	Japan	Not specified	Intervention study	Stepwise problem-solving approach successfully eliminated patient misidentification incidents.
	Alkhaqani (2022)	Iraq	140 healthcare workers (doctors, nurses, pharmacists)	Observational cross-sectional study	Evaluated patient ID practices; identified gaps; proposed a model to improve verification and safety.
Goal 3: Medication Safety (High-Alert Medications)	Ng et al. (2013)	Singapore	Multiple hospitals	Multicenter collaborative study	Targeted safety interventions led to >50% reduction in adverse drug events related to high-alert medications.
	Cook et al. (2016)	USA	ICU patients	Observational study	Double-checking and secure storage significantly decreased medication errors with high-alert drugs.
	Aradhya et al. (2023)	India	165 ICU patients	Prospective interventional study	Most errors occurred during prescribing/admin phases; stress and workload were key factors; training recommended.

REVIEW OF LITERATURE

IPSG Goal	Author(s) & Year	Study Location	Sample Size & Population	Study Type	Key Findings
Goal 5: Infection Prevention & Control	Amegah et al. (2021)	Ghana	408 healthcare workers	Convenience sampling	Low compliance during aerosol-generating procedures; stress and workload identified as key barriers.
	Basak et al. (2022)	India	45 dental clinicians	Cross-sectional pilot study	High compliance with hand hygiene and PPE; poor adherence in waste disposal and rubber dam use.
	Olowokere et al. (2023)	Nigeria	235 healthcare workers	Proportionate stratified random sampling	66.1% practiced good infection control; training and availability of resources strongly influenced compliance.

Research Methodology

1

Research Question
What is the level of compliance with IPSG Goals 1, 3, and 5 at CK Birla Hospital, Jaipur, and what gaps and opportunities for improvement exist?

2

Study Design & Setting
Descriptive cross-sectional study
CK Birla Hospital, Jaipur (NABH-accredited)
Departments: ER, Inpatient Units (2nd–5th Floor), MICU, ICCU, Neuro ICU, HDU, CCU

3

Population & Sample
- 300 inpatients
- Nursing staff involved in patient care

4

Sampling:
Convenience sampling

5

Duration:
March–May 2025

6

Data Collection Methods
Quantitative:
Observational checklist (IPSG 1, 3, 5)
Qualitative:
Informal nurse interviews

Research Methodology

7

Study Tools
IPSG audit checklist (NABH/WHO aligned)
Observation sheets
Indicators included ID band checks, HAM protocols, hand hygiene, etc.

8

Inclusion Criteria
Inpatients during observation
On-duty nurses providing direct care

9

Exclusion Criteria
Outpatients, discharged patients
Non-clinical or admin staff

10

Data Analysis
MS Excel: Percentages, departmental comparisons

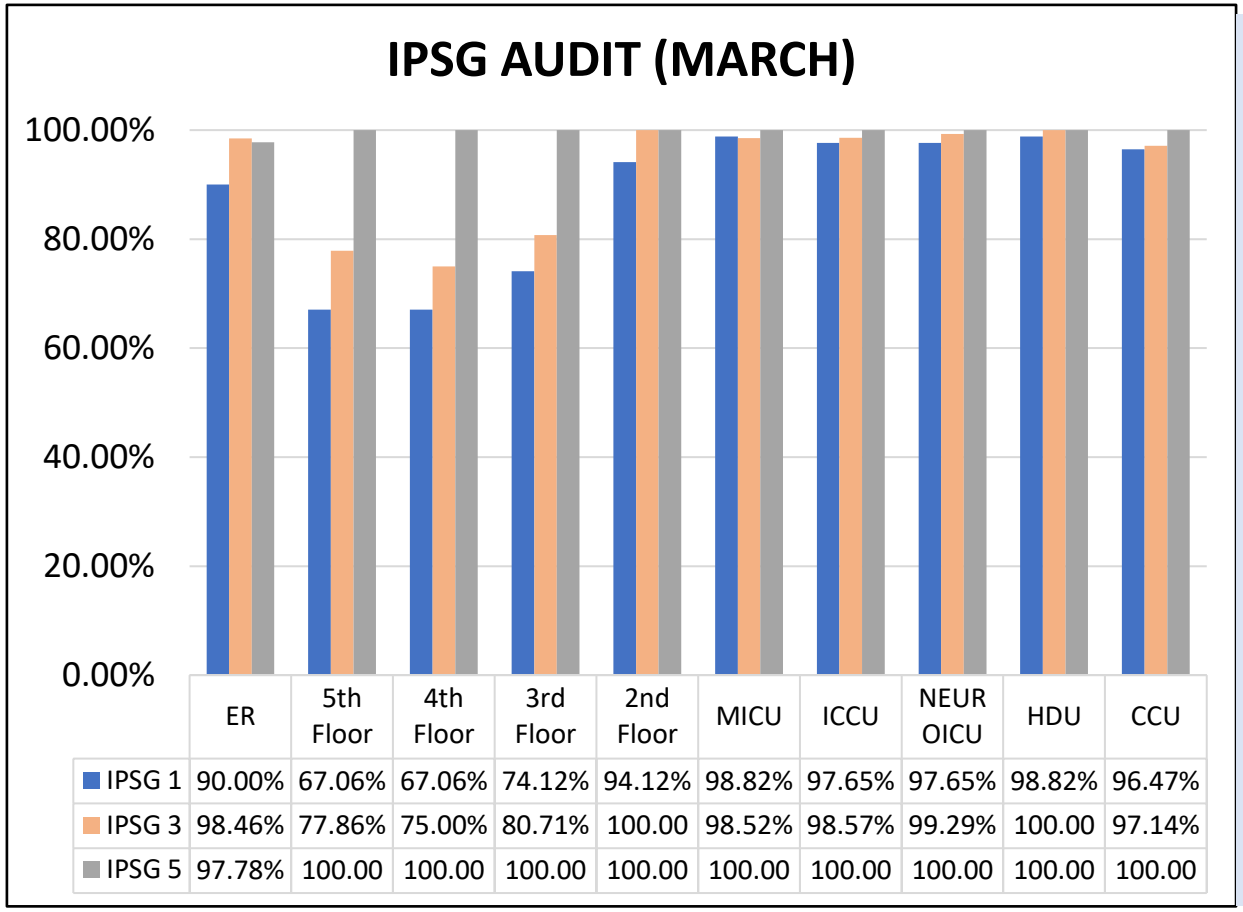
11

Compliance Scale:
Compliant ≥90%
Partially 60–89%
Non – Compliant - <60%

12

Ethical Considerations
Verbal consent obtained
Anonymity & confidentiality ensured

RESULTS



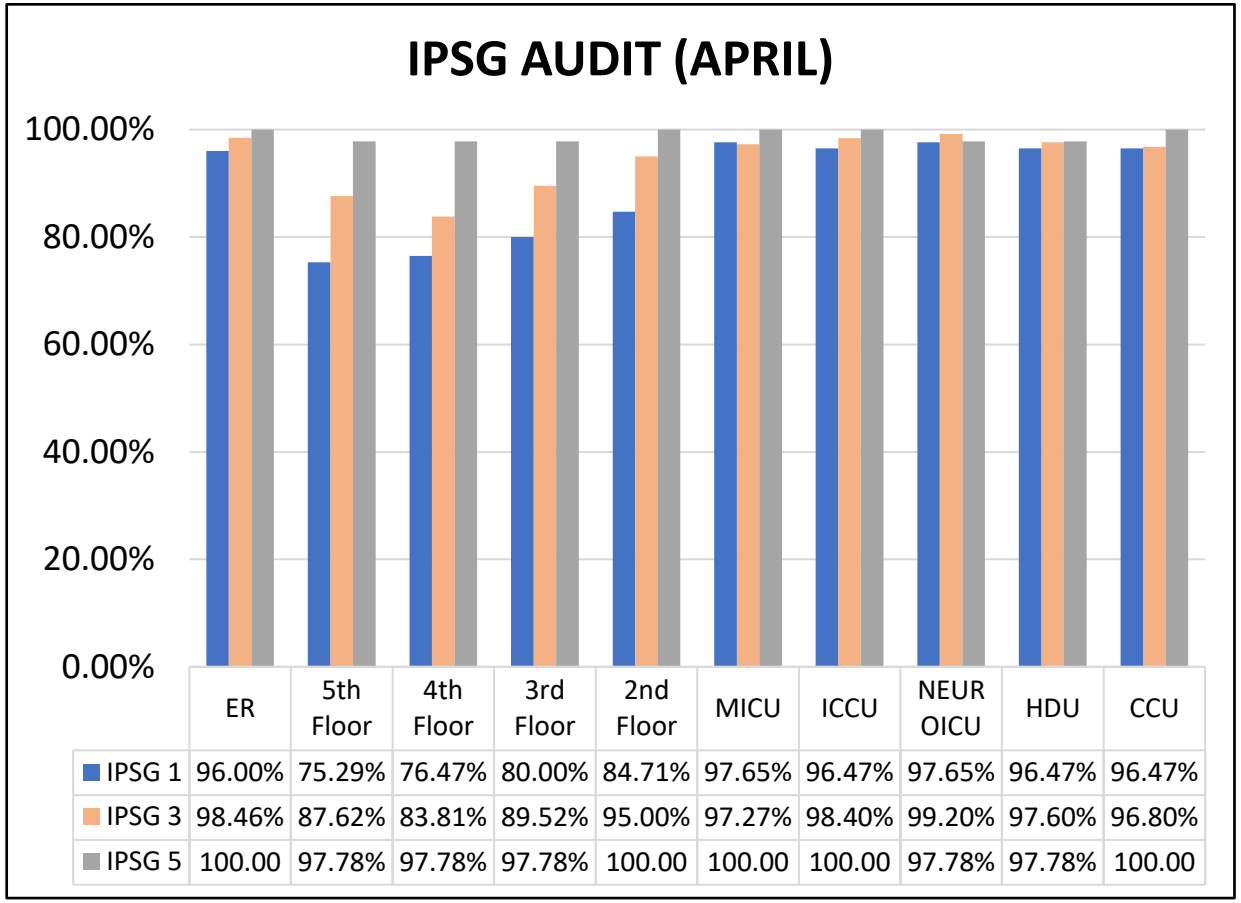
	ER	5th Floor	4th Floor	3rd Floor	2nd Floor	MICU	ICCU	NEUROICU	HDU	CCU
IPSG 1	90.00%	67.06%	67.06%	74.12%	94.12%	98.82%	97.65%	97.65%	98.82%	96.47%
IPSG 3	98.46%	77.86%	75.00%	80.71%	100.00	98.52%	98.57%	99.29%	100.00	97.14%
IPSG 5	97.78%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

The IPSG audit for March showed varied compliance across departments. General wards like the 5th and 4th Floors had lower scores in **IPSG 1 (67.06%)**, indicating issues with patient ID verification and double-checking protocols. Similarly, **IPSG 3** (medication safety) showed lower compliance in these areas (**77.86% and 75.00%**), suggesting gaps in handling high-alert medications.

In contrast, **IPSG 5 (infection prevention)** recorded **100% compliance** across nearly all units, reflecting strong adherence to hand hygiene, PPE use, and sterilization practices.

Critical care units (MICU, ICCU, NEUROICU, HDU, CCU) consistently scored high across all IPSGs, highlighting robust safety systems and regular protocol adherence. Their performance can serve as a model for improving practices in general wards.

RESULTS



	ER	5th Floor	4th Floor	3rd Floor	2nd Floor	MICU	ICCU	NEUR OICU	HDU	CCU
IPSG 1	96.00%	75.29%	76.47%	80.00%	84.71%	97.65%	96.47%	97.65%	96.47%	96.47%
IPSG 3	98.46%	87.62%	83.81%	89.52%	95.00%	97.27%	98.40%	99.20%	97.60%	96.80%
IPSG 5	100.00	97.78%	97.78%	97.78%	100.00	100.00	100.00	97.78%	97.78%	100.00

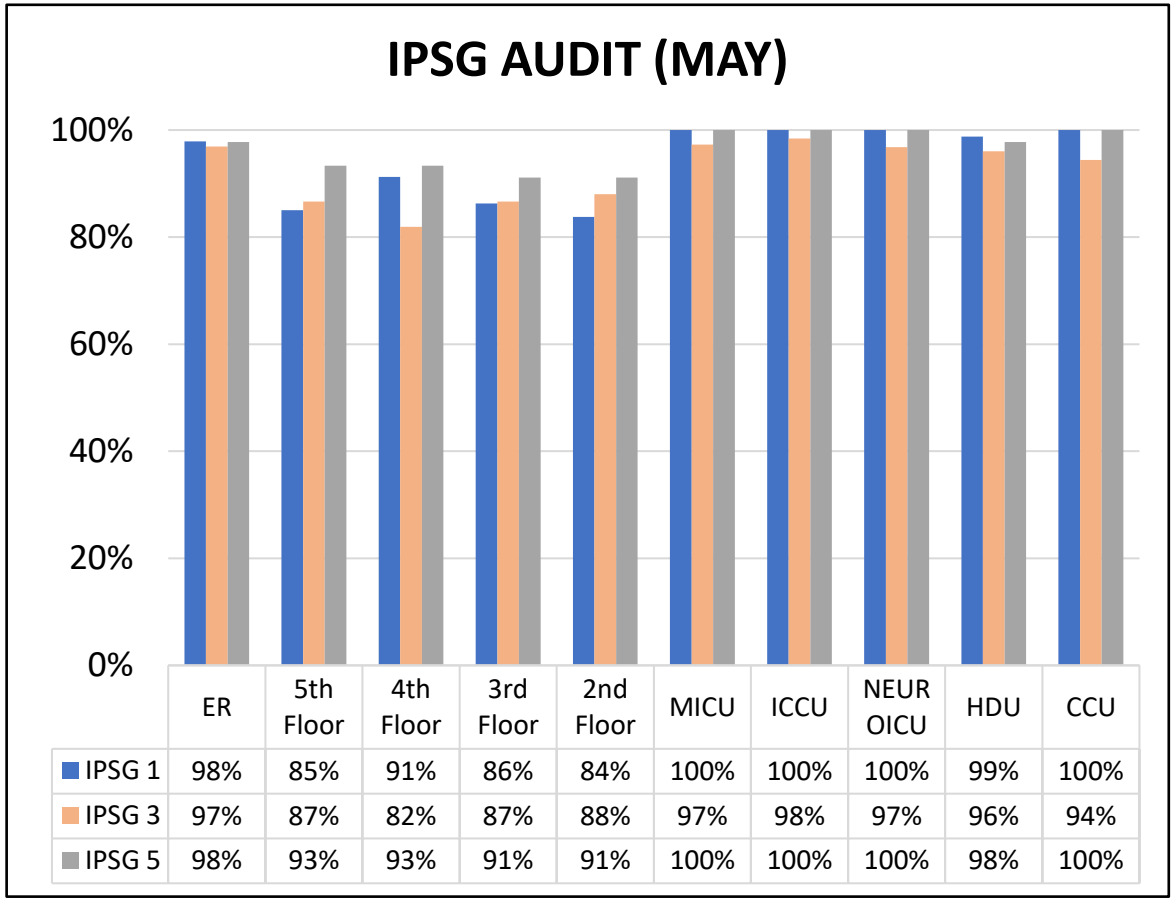
The April audit showed improved compliance across departments compared to March. **IPSG 1 scores** increased notably on the 3rd and 4th Floors **(80.00% and 76.47%)**, while the **ER excelled** with **96.00% in IPSG 1**, **98.46% in IPSG 3**, and **100% in IPSG 5**—indicating strong safety enforcement and staff accountability.

General wards also improved in **IPSG 3**, with the **3rd Floor at 89.52%** and **5th Floor at 87.62%,** reflecting better practices in high-alert medication management.

IPSG 5 remained consistently high across all areas (97.78%–100%), showing sustained excellence in infection control.

Critical care units continued strong performance, averaging over 96% in all IPSGs, underscoring the impact of regular supervision and well-trained staff.

RESULTS



	ER	5th Floor	4th Floor	3rd Floor	2nd Floor	MICU	ICCU	NEUR OICU	HDU	CCU
IPSG 1	98%	85%	91%	86%	84%	100%	100%	100%	99%	100%
IPSG 3	97%	87%	82%	87%	88%	97%	98%	97%	96%	94%
IPSG 5	98%	93%	93%	91%	91%	100%	100%	100%	98%	100%

The May audit showed continued improvement and stability in IPSG compliance. **IPSG 1** reached 100% in all critical care units and improved notably on the 4th Floor (91%) and in the ER (98%), reflecting stronger patient identification practices.

IPSG 3 remained stable, with **general wards** scoring between **84%–88%** and **critical areas** maintaining high compliance (**94%–98%**), indicating more consistent medication safety, though some general units still need reinforcement.

IPSG 5 continued to excel, with 100% compliance in critical care and 91%–93% in general wards, highlighting strong and sustained infection control efforts.

Overall, the audit confirms steady progress in patient safety, especially in previously underperforming areas. Continued training and sharing of best practices are key to maintaining this practice.

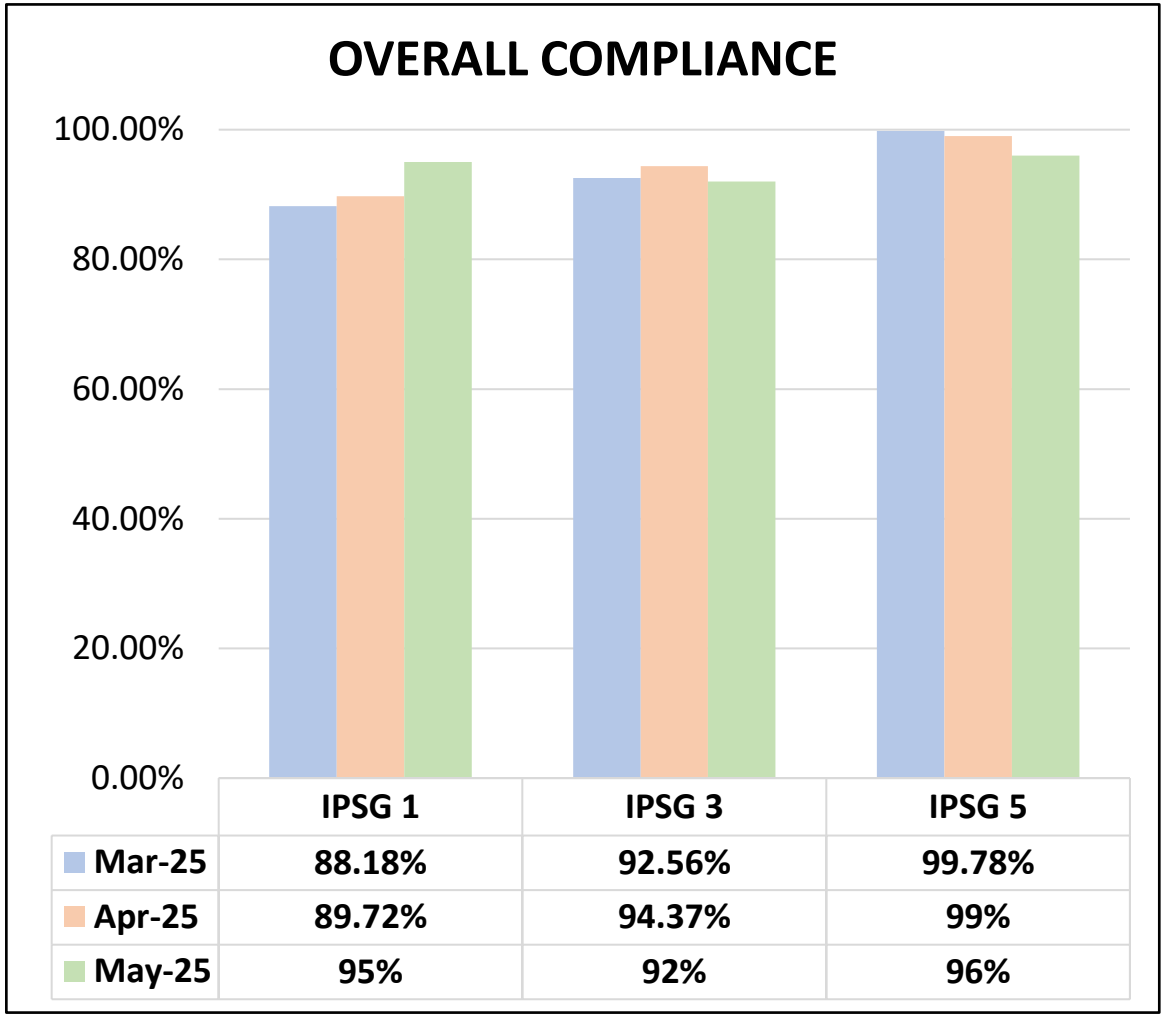
Key Trends Observed:

Progressive improvement in IPSG 1 and IPSG 3 compliance in general wards over time, especially on the 2nd and 3rd Floors.

IPSG 5 was the strongest-performing goal across all months and departments, reflecting robust infection control practices.

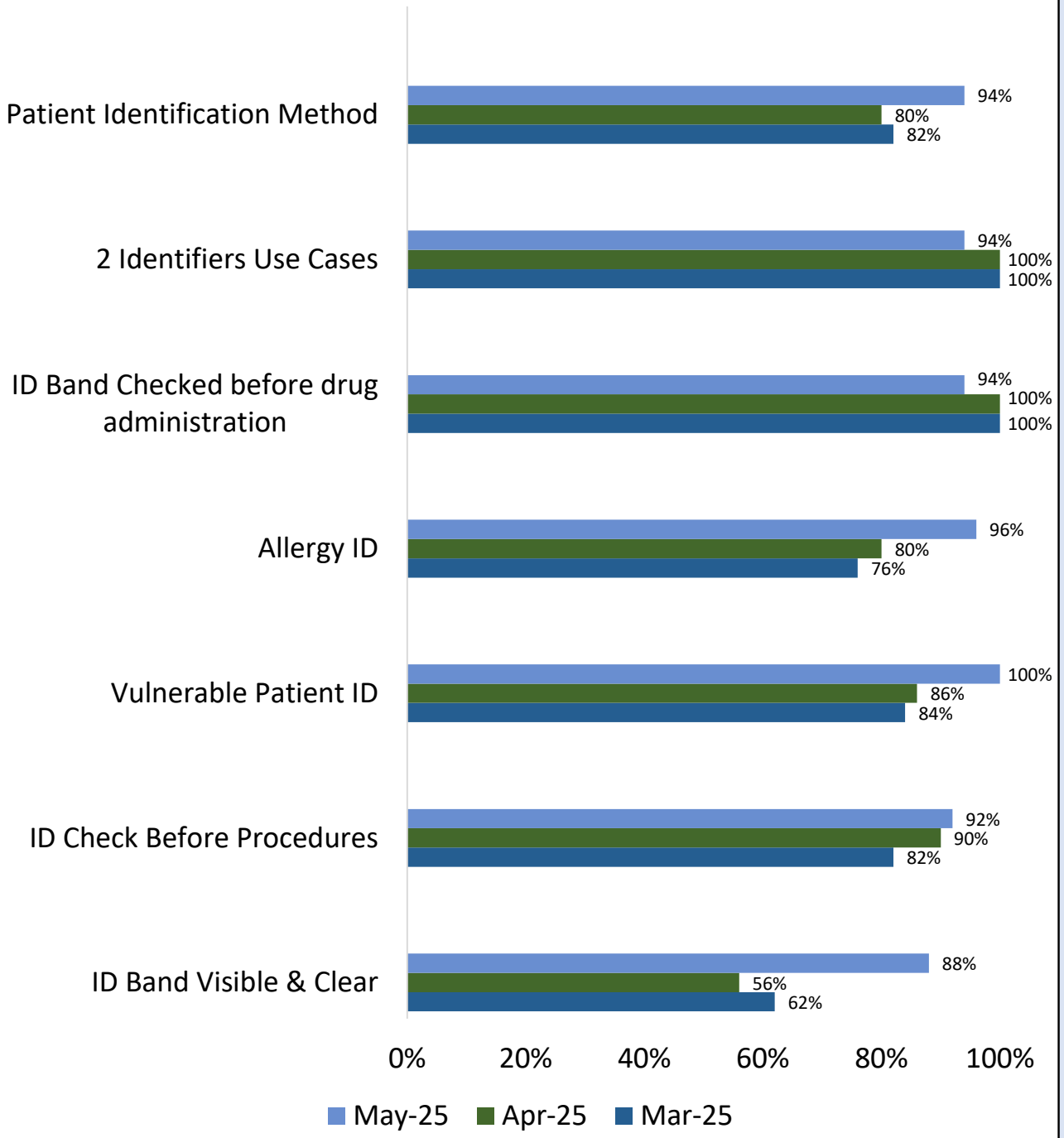
Critical care units maintained high consistency, indicating effective adherence to patient safety protocols.

Areas for continued focus: The 5th and 4th Floors still lag slightly in IPSG 1 and IPSG 3, though they are improving gradually.



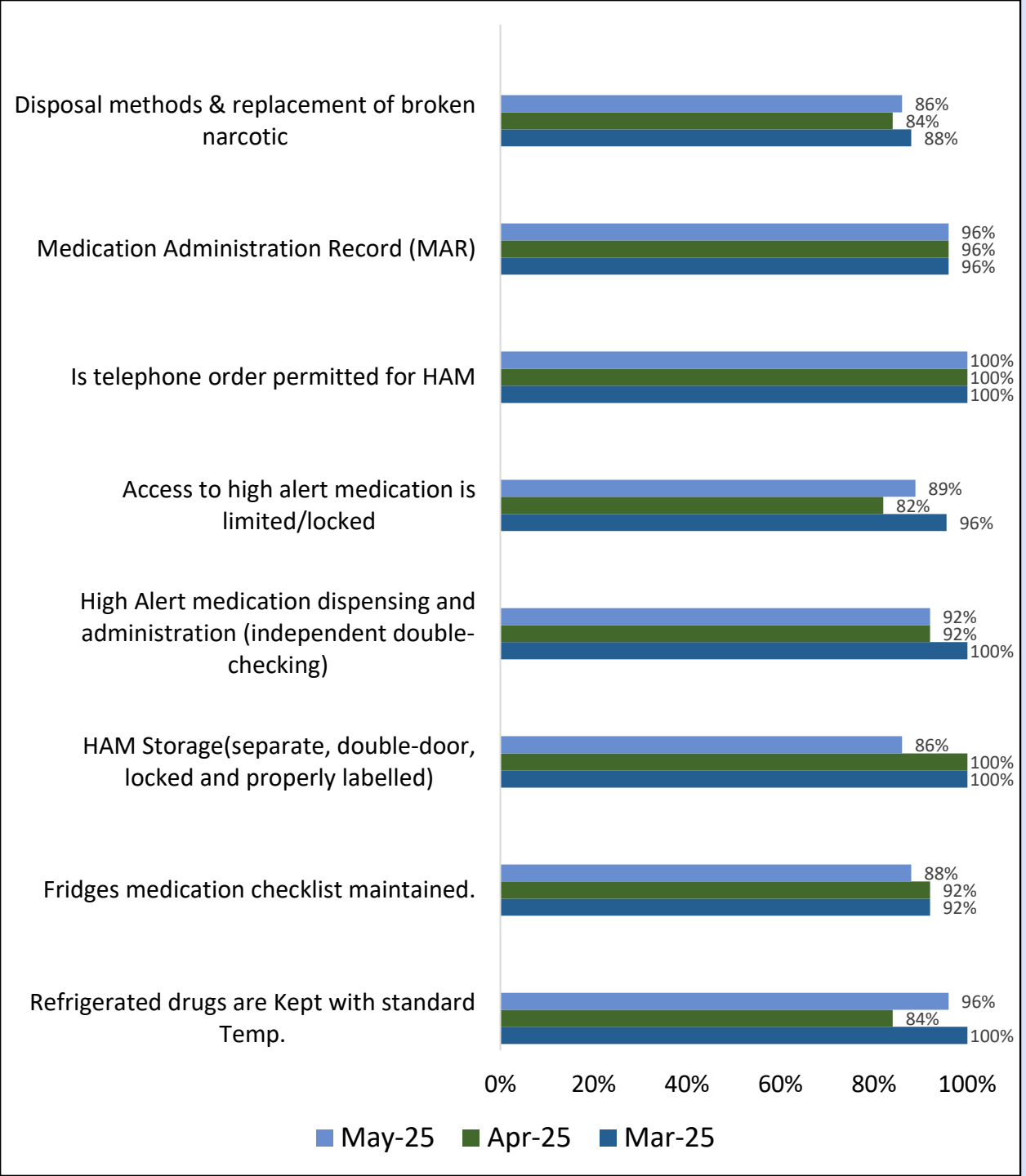
	IPSG 1	IPSG 3	IPSG 5
Mar-25	88.18%	92.56%	99.78%
Apr-25	89.72%	94.37%	99%
May-25	95%	92%	96%

The compiled data shows positive trends across all IPSG goals. **IPSG 1** (patient identification) improved significantly from 88.18% in March to 95% in May, reflecting successful interventions like staff retraining and stricter ID protocols.
IPSG 3 (high-alert medication safety) remained strong, averaging above 92%. Though slightly dipping from 94.37% in April to 92% in May, compliance remains high, emphasizing the need for ongoing monitoring to maintain consistency.
IPSG 5 (infection control) showed outstanding compliance, starting at 99.78% in March and settling at 96% in May. The slight decline still reflects robust infection prevention practices across departments.
Overall, the data confirms substantial progress in patient safety, especially in IPSG 1. Continued focus and regular audits can help achieve full compliance in all areas.



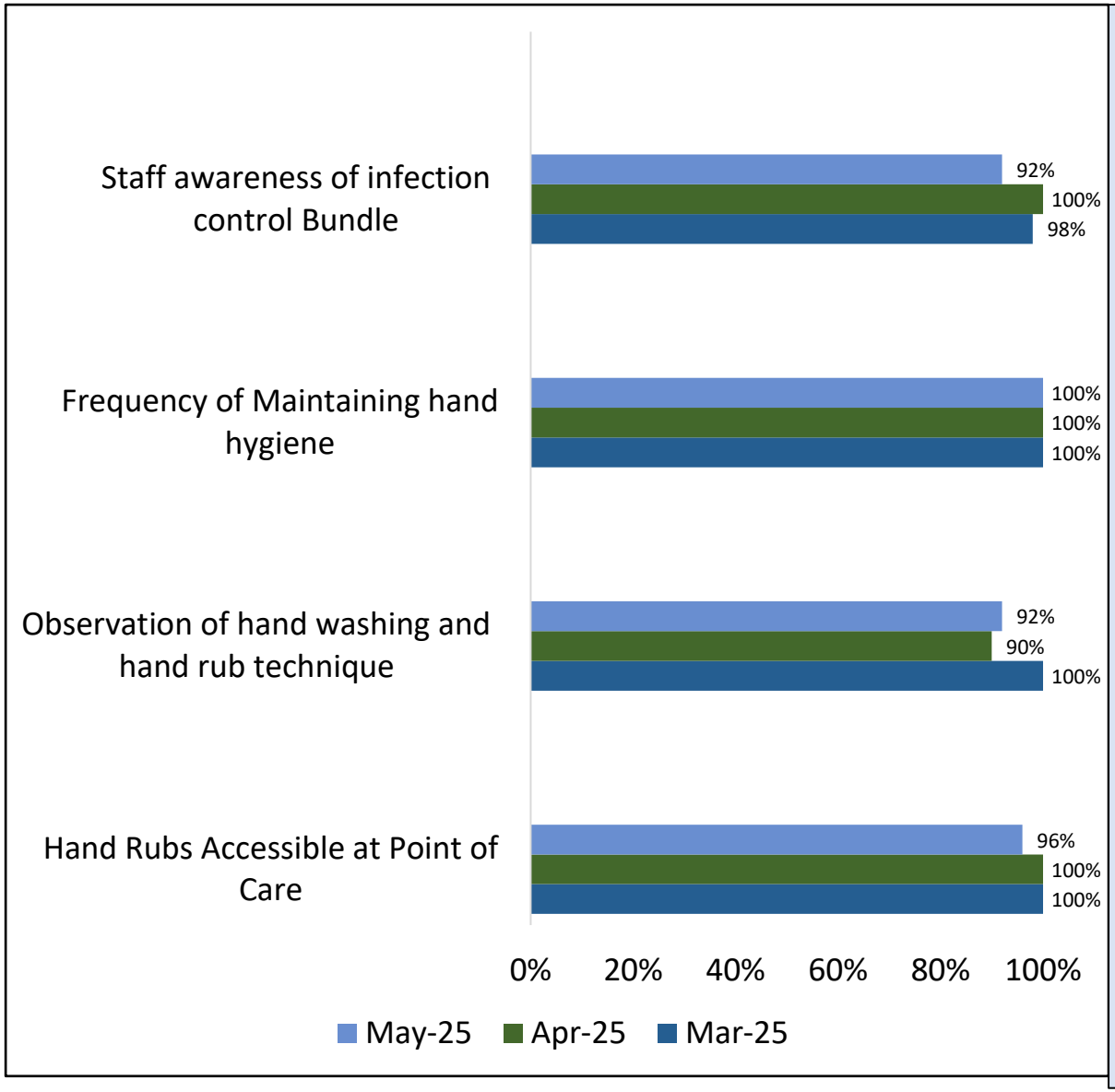
IPSG 1 – Patient Identification Parameters: Key Findings

- **Patient Identification Method**
  March: 82% → April: 84% → May: 94%
  Indicates improved adherence to standardized ID methods, aligning better with NABH protocols.
- **2 Identifiers Use Cases**
  Maintained 100% in March & April, dipped slightly to 94% in May
  Still a strong area, but a slight drop in May suggests the need to reinforce consistency.
- **ID Band Checked before Drug Administration**
  Maintained 100% in March & April, dipped slightly to 94% in May
  Continued high performance, though the slight decline in May calls for regular audits.
- **Allergy ID**
  March: 76% → April: 80% → May: 96%
  Demonstrates increased vigilance in identifying allergy risks and better clinical safety compliance.
- **Vulnerable Patient ID**
  March: 84% → April: 88% → May: 100%
  Achieved full compliance by May, highlighting successful efforts in safeguarding at-risk patients.
- **ID Check Before Procedures**
  March: 82% → April: 90% → May: 92%
  Reflects steady growth in staff accountability and compliance with safety protocols.
- **ID Band Visible & Clear**
  March: 62% → April: 56% → May: 88%
  Marked improvement in May after an initial dip, indicating stronger monitoring and compliance.



IPSG 3 – High-Alert Medication Safety: Key Findings

- **Disposal Methods & Replacement of Broken Narcotic**
  March: 92% → April: 94% → May: 96% ; Shows progressive improvement in handling and replacing narcotics, indicating better compliance and oversight.
- **Medication Administration Record (MAR)**
  Maintained 100% in March, April, and May ; Consistently high compliance reflects strong documentation and adherence to medication administration protocols.
- **Is Telephone Order Permitted for HAM**
  Maintained 100% in March, April, and May ; Demonstrates consistent policy clarity and compliance regarding verbal orders for High Alert Medications (HAM).
- **Access to High Alert Medication is Limited/Locked**
  March: 80% → April: 82% → May: 94% ; Significant improvement in May, indicating reinforced controls to prevent unauthorized access to high-alert medications.
- **High Alert Medication Dispensing and Administration (Independent Double-Checking)**
  March: 94% → April: 96% → May: 98% ; Continuous improvement shows increased reliability in independent verification of high-risk drug administration.
- **HAM Storage (Separate, Double-Door, Locked and Properly Labelled)**
  March: 88% → April: 90% → May: 92% ; Steady enhancement in safe storage practices for high-alert medications.
- **Fridges Medication Checklist Maintained**
  March: 92% → April: 94% → May: 94% ; Stable performance in maintaining temperature monitoring and checklist protocols for medication storage.
- **Refrigerated Drugs are Kept with Standard Temp.**
  March: 76% → April: 78% → May: 100% ; Achieved full compliance by May, reflecting strong cold chain maintenance and monitoring efforts.



IPSG 5 – Infection Prevention: Key Findings

- **Staff Awareness about Infection Control Bundle**
  March: 94% → April: 96% → May: 92%
  Slight dip in May suggests a need to reinforce continuous education and engagement on infection control practices.
- **When Do You Do Hand Hygiene?**
  Maintained 100% in March, April, and May
  Excellent and consistent awareness reflects strong training and habitual practice of hand hygiene moments.
- **Observe Hand Washing and Hand Rub Technique**
  March: 96% → April: 92% → May: 98%
  Rebounded in May after a minor decline in April, showing renewed focus on proper technique compliance.
- **Hand Rubs Accessible at Point of Care**
  March: 96% → April: 98% → May: 100%
  Steady improvement reaching full compliance in May, demonstrating effective infection prevention infrastructure.

KEY GAP AREAS : IPSG 1

Unclear/Dirty ID Bands: Staff failed to replace blood-stained or unreadable bands post-OT.	• *Root Cause:* Lack of clear ownership, time constraints
Two Identifiers Not Always Used: Staff forgot or skipped this step.	• *Root Cause:* Poor awareness among new joiners, lack of regular audits and reminders.
ID Check Skipped Before Medication/Procedure: Deemed time-consuming.	• *Root Cause:* Time pressure, unclear accountability, absence of regular monitoring.
Joining of Many New Staff:	• *Root Cause:* Influx of new staff led to inconsistent adherence due to gaps in training and orientation.

Recommended Interventions

1. **Non-Compliance Tracking Board**
   - Establish a "Patient ID Miss Log" at each nurse station.
   - Supervisors will record the following after each missed compliance: Nurse name, Nature of lapse (e.g., ID band missing, use of only one identifier, wrong band color), Date and time of the incident
   - Escalation Protocol:
     - After 2 mistakes: Nurse receives a Quick training and Brief 1-on-1 coaching.
     - After 3+ mistakes: Nurse undergoes a short knowledge check and review with Nursing Supervisor or Quality Team.
2. **Gamify Compliance – Patient Safety Champion**
   - Implement a weekly recognition program called "Patient Safety Champion of the Week."
   - Criteria: Zero ID-related errors, Peer recognition for good identification practices
3. **Mini-Refresher in Nurse Handover**
   - Incorporate a one-line prompt into all shift handover sheets:
     - "ID Band checked? ___ (Y/N)"
4. **New Joiner Buddy Program**
   - Assign each newly joined nurse a "Safety Buddy" for the first 7 days.
   - The buddy nurse guides them through: Correct usage of ID bands, Color-coding systems, Situations requiring strict patient identification, Use of two identifiers during care delivery

KEY GAP AREAS: IPSG 3

Fridge Temp & Checklist: Staff unaware of required temperature or neglected documentation.

- *Root Cause:* No responsibility assignment, lack of training, checklist fatigue.

Improper HAM Storage (Labeling/Locks): Gaps in compliance.

- *Root Cause:* Lack of Regular Monitoring.

Dispensing Without Double-Check: Procedure skipped.

- *Root Cause:* Time pressure, unclear accountability, absence of regular monitoring.

Recommended Interventions

1. **Biweekly "Mystery HAM Check"**
   - The Quality or Pharmacy Team will conduct surprise audits in one ward/unit in 2 weeks.
   - Parameters to be Checked: Locked storage of HAMs (double-door, restricted access),Clear and correct labeling of high-alert drugs, Refrigerator temperature log completion and adherence to standard range

2. **Unlabeled Bedside Medication Reporting**
   - During surprise rounds or regular audits, any bedside high-risk medication or pre-loaded syringe found without a label should be immediately reported.
   - The concerned staff will be: Noted in a non-compliance log, Given immediate verbal feedback and a brief training on labeling protocol
   - Repeated non-compliance will lead to a formal warning and retraining.

KEY GAP AREAS: IPSG 5

Hand Rub Inaccessibility: Empty or missing dispensers.

- *Root Cause:* No assigned responsibility for restocking; lack of inventory tracking.

Incorrect Hand Hygiene Technique: Technique not followed precisely.

- *Root Cause:* Gaps in training, no live demonstrations to the new staff for reminder.

Bundle Awareness Drops: Staff not clear on protocols.

- *Root Cause:* New joiners missed orientation; no routine huddles or visual reminders.

Recommended Practical Interventions

1. **Daily Hand Rub Refill Tracker**
   - Install a sticker chart or laminated checklist outside each patient room or ward entrance.
   - Housekeeping or nursing staff will tick off after checking/refilling hand rub dispensers twice daily (morning and evening).
   - The ward in-charge will review the sheet weekly for gaps and escalate missed checks.
2. **Infection Control Snaps Program**
   - Create a WhatsApp/email Group (managed by QI/Infection Control team) for staff to anonymously share:
     - **Photos of good practices** (e.g., proper hand hygiene before touching a patient)
     - **Photos of poor practices** (e.g., missing hand rubs, ungloved hands, dirty dressings)
   - Photos are reviewed weekly in the QI meeting for:
     - **Acknowledging good practice**
     - **Addressing unsafe practices with feedback or re-training**
3. **Random Hand Hygiene Audits**
   - The Quality or Infection Control Team will conduct weekly surprise audits in different departments.

THANK YOU