

# AIMING FOR ZERO INPATIENT PHARMACY (IP) MEDICATION SUPPLY ERRORS

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## Define Problem, Set Aim

### Problem Statement

Wrong medication supplies from inpatient pharmacy (IP) to wards threaten patient safety, staff morale, productivity, and hospital reputation. Our average error rate increased from 0.05 (January-June 2023) to 0.07 (July-December 2023). While this is still within the current safety target of less than 0.1, this upward trend is concerning.

To enhance patient safety and maintain excellence, we aim to reduce our 6-monthly average error rate to 0.04 or lower—a minimum of 20% reduction from our best recent performance. This will also positively impact International Patient Safety Goal 3 of the Joint Commission International Accreditation Standards for Hospitals.

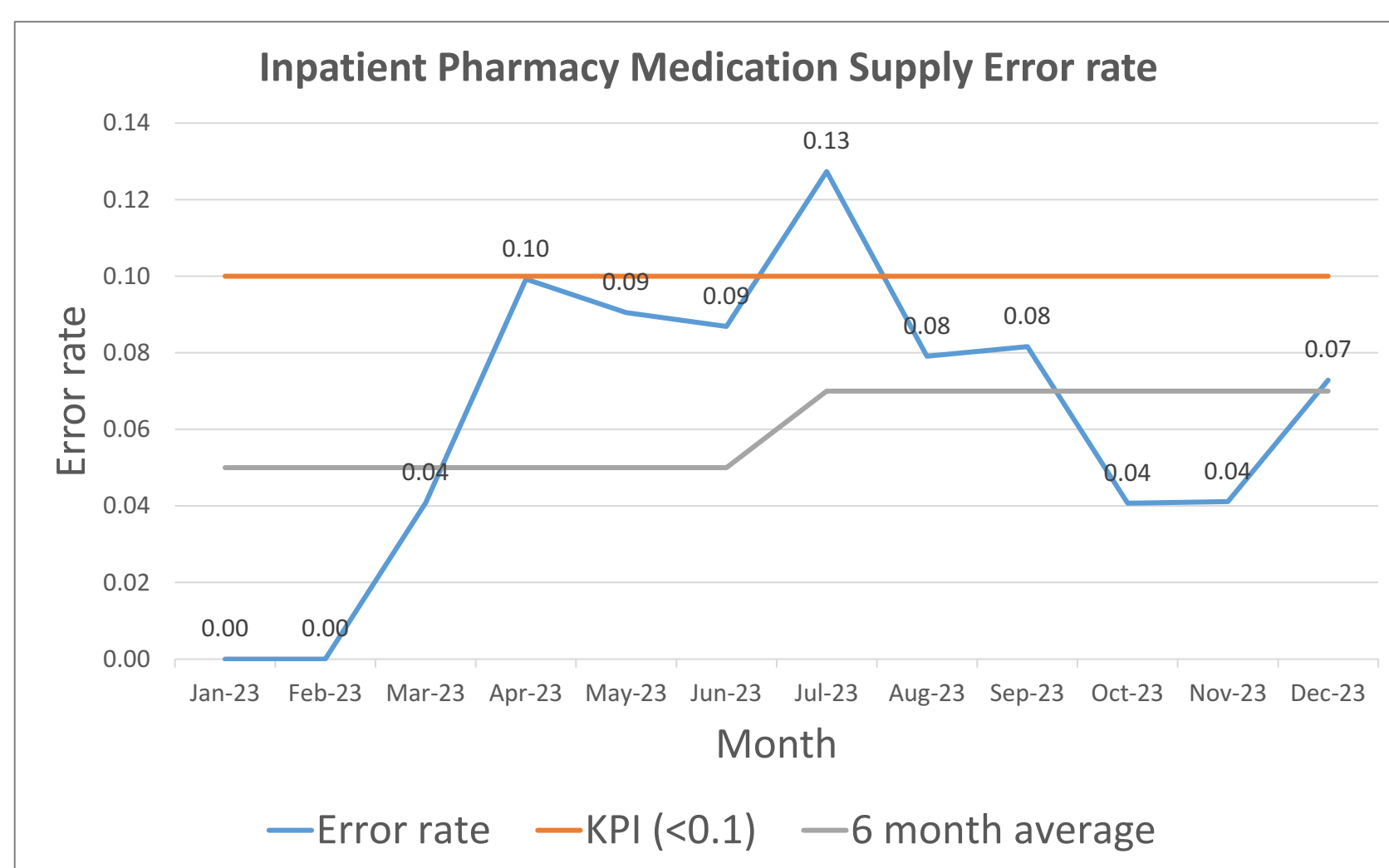
Achieving this stretch target is crucial for positioning our hospital as a leader in medication safety and overall healthcare quality.

### Aim Statement

Reduce IP supply average error rate to 0.04 or lower for July-December 2024, and sustain this performance through January-June 2025, establishing a new safety level in medication safety and patient care excellence.

## Establish Measures

**Outcome measure:** Inpatient pharmacy medication supply error rate

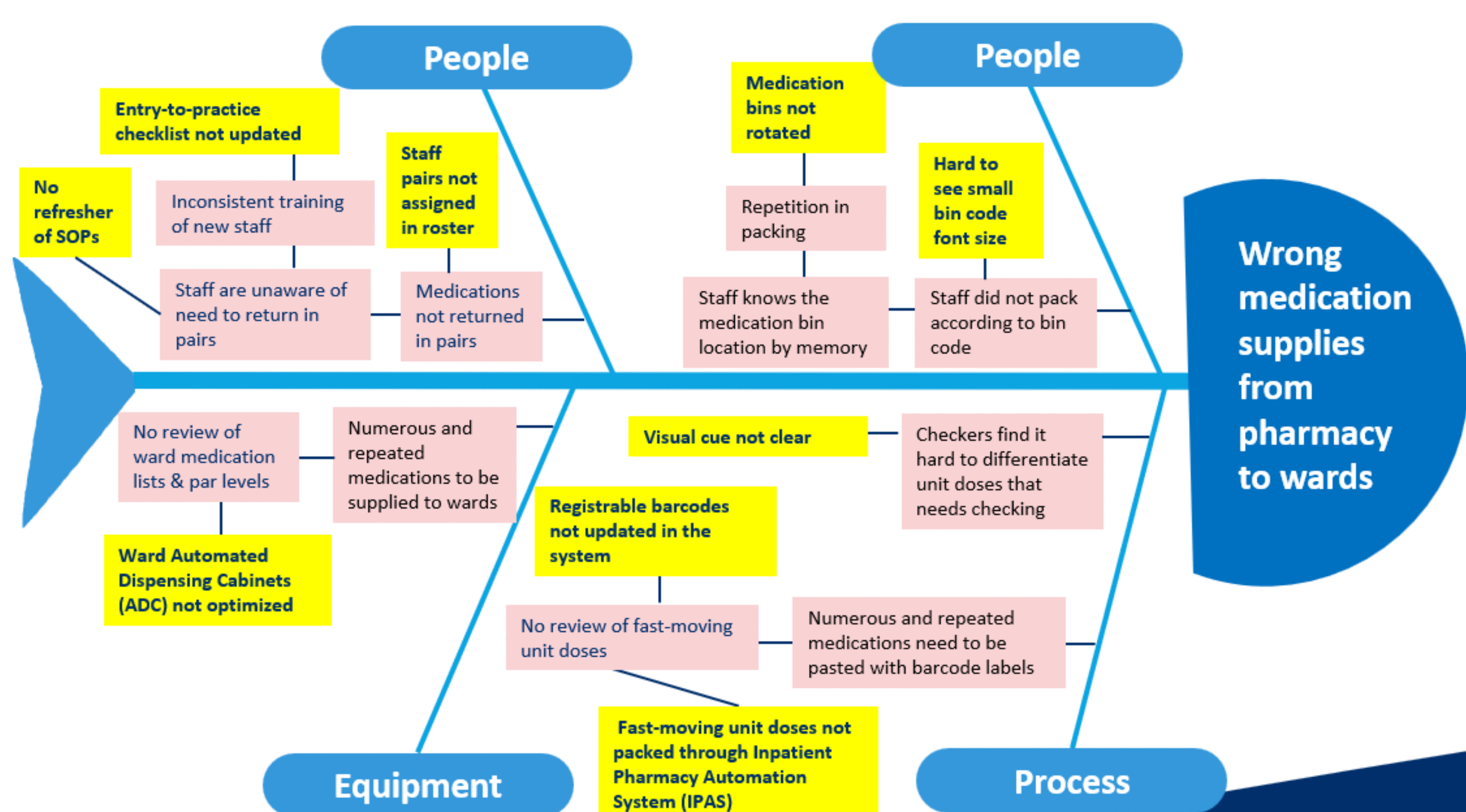


**Process measure:** Number of wrong medications topped up/ returned to Inpatient Pharmacy medication bins.

**Balancing measure:** Monitoring for increased complaints from inpatient nurses regarding delay in medication supplies.

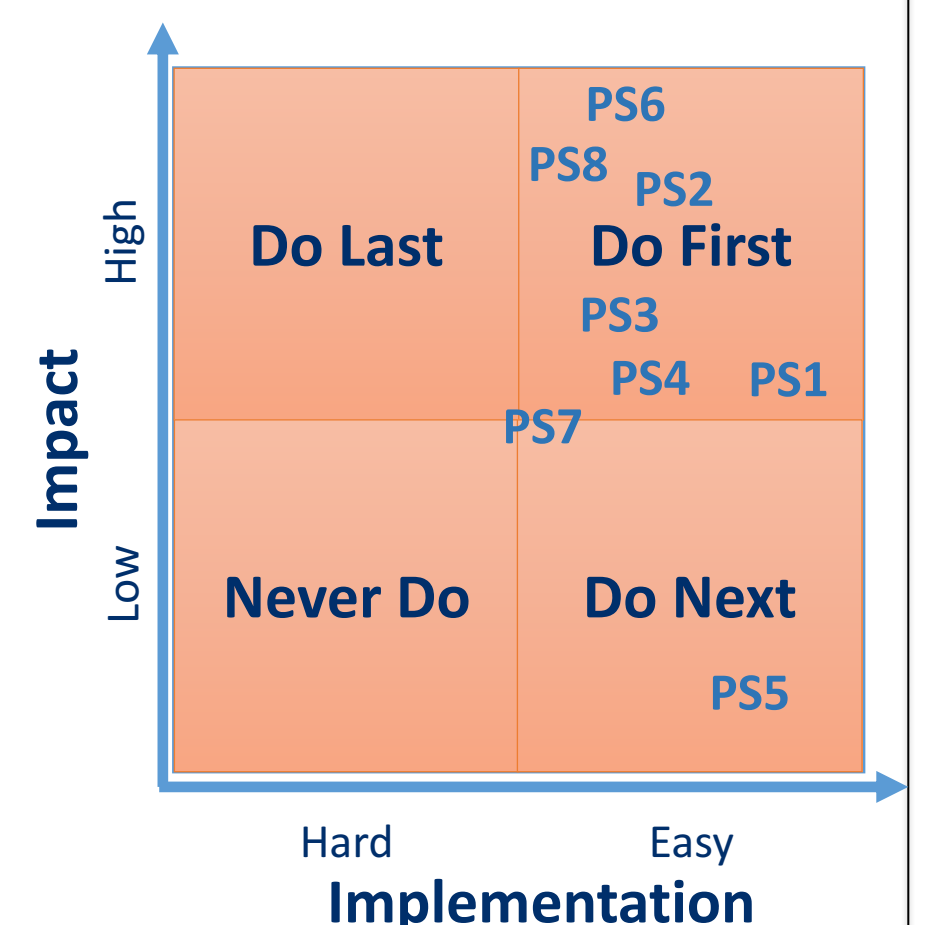
## Analyse Problem

### Analysis of contributing factors & root causes



## Select Changes

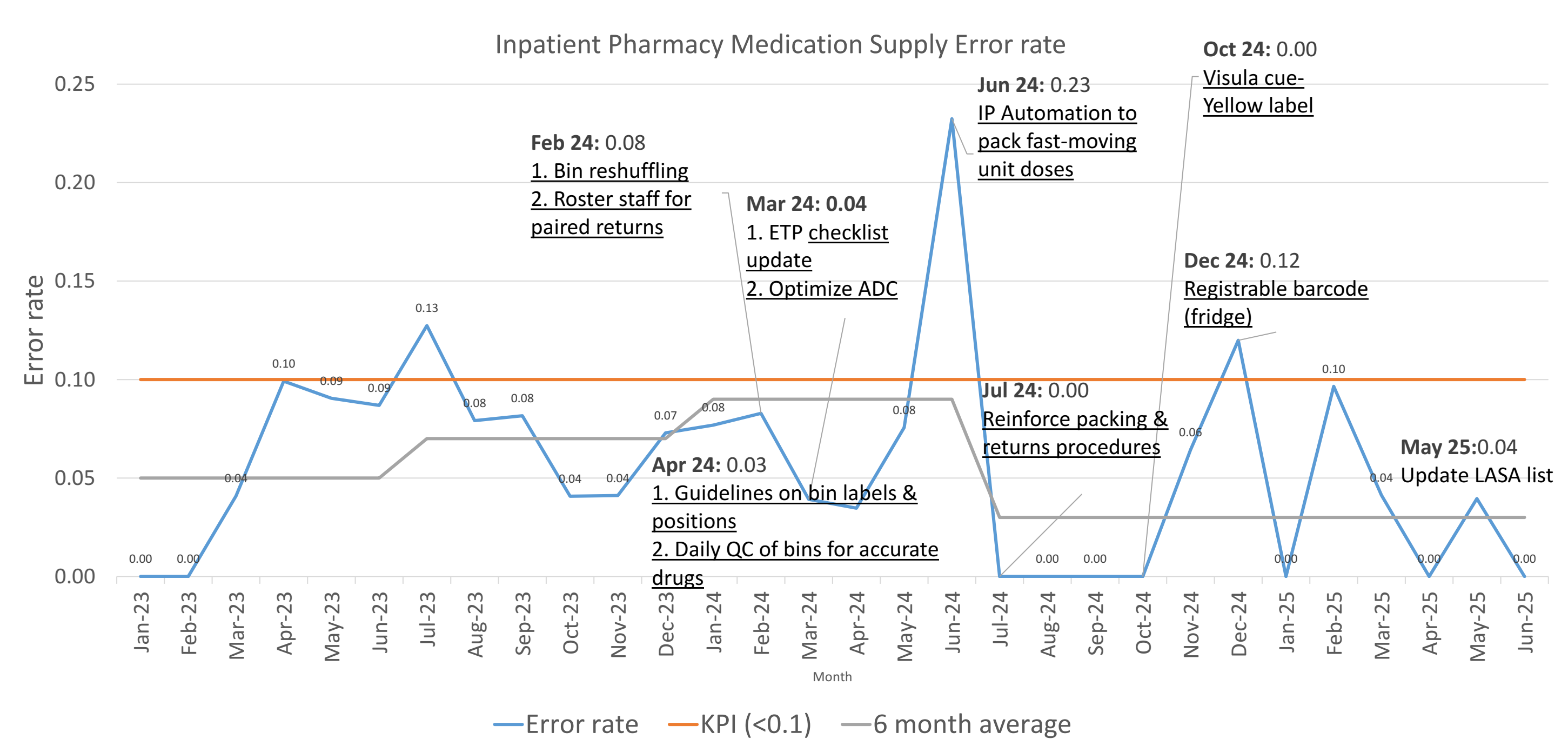
Root Cause	Potential Solutions
Staff not assigned for paired returns	1 Roster master to assign pairs for medication returns
Visual cue not clear to checkers	2 Use coloured labels for IP-packed unit doses
Medication bins not rotated	3 Bin reshuffling
Entry-to-practice (ETP) checklist not updated	4 Update checklist to prevent inconsistencies in new staff training
No refresher on SOPs	5 Periodic refreshers to remind staff & reinforce compliance to SOPs
Registrable barcodes not updated in the system	6 Reduce items that need manual barcode sticking by registering manufacturer barcode in system
Fast-moving unit doses not packed by IP automation	7 Review prescribing trends for fast-moving unit doses, and pack these using IPAS machines
Ward Automated Dispensing Cabinets (ADC) not optimized	8 Review ward medication list and par levels to optimize ADC to reduce quantity of IP supplies



## Test & Implement Changes

How do we pilot the changes? What are the initial results?

CYCLE	PLAN	DO	STUDY	ACT
1	Prevent packing by memory	• Choose drug bins to relocate based on near misses • Relocate & update in system	(+) Supply errors reduced following month (+) Staff finds acceptable	• Adopt periodic bin reshuffling
2	Prevent wrong return of drugs to medication bins	• Roster staff to return in pairs	(+) Independent double checks reduced return errors	• Adopt specifying in roster the staff pairs for drug returns
3	All packers to be trained & coached in a uniform manner	• Update ETP checklist & reinforce use of green pen • Retrain trainers	(+) Better clarity for trainers on expectations (+) Low supply errors maintained	• Adopt new training checklist
4	Work with Nursing to optimize ADC by incorporating fast-moving drugs inside	• Review drug movement • Add fast-moving drugs into ADC	(+) Less packing needed, more time saved (+) Low supply errors maintained	• Adopt periodic reviews of drug movements to allow for ADC optimization
5	Work with IPAS to reduce quantity of IP medication supplies	• Review fast-moving items • Fast-moving items to be packed by IPAS	(+) Supply errors went to zero the following months	• Adopt periodic review of drug movements to optimize work
6	Improve visual cue on barcode labels for checkers	• Use yellow instead of white labels	(+) Checkers find this easier to see	• Adopt use of yellow labels as a clearer visual cue
7	Reduce need to print barcode labels	• Review drugs that have registrable barcodes & update in system	(+) Less drugs that need additional step of printing barcode	• Adopt – registered barcodes removes the need for printing



## Spread Changes, Learning Points

**What are/were the strategies to spread change after implementation?**

The average error rate reduced to 0.03 for Jul-Dec 2024 and this low rate is sustained through Jan-Jun 2025. Regular reviews of medication trends, collaborations with nursing, constant support and refreshers for staff and monthly communication on performance contributed to sustained changes.

**What are the key learnings from this project?**

- Regular engagement of ground staff through workgroup and sectional meetings help timely identification and resolution of issues.
- Providing multiple feedback channels allow for ease of near miss reporting.