High Reliability Auditing: Pharmacy Technician Automated Dispensing Cabinet Workflow Compliance

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BACKGROUND

Ninety percent of medication doses (~ 400,000/ month in 2025) at Memorial Regional Hospital are dispensed from pharmacy automated dispensing cabinets (ADC).

Regulations require patients receive timely pharmaceutical services necessary for quality care, including stocking of ADCs.[1]

Accrediting standards mandate the promotion of medication availability while reducing potential dispensing errors from ADCs.[2] Utilizing risk mitigating strategies in a high reliable organization, technicians play a major role.

From October 2024 to March 2025, twenty voluntary incident reports identified opportunities to improve technician compliance with ADC management workflow.

OBJECTIVE

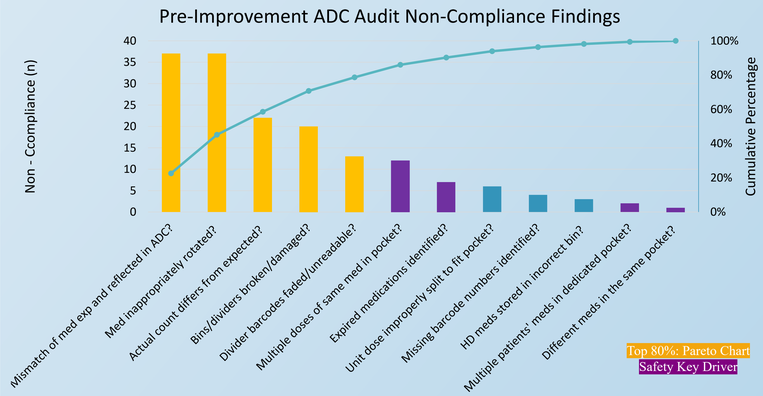
The objective of this process improvement is to establish a standardized and robust auditing tool to validate technician compliance with ADC workflow contributing to accrediting standards and requirements.

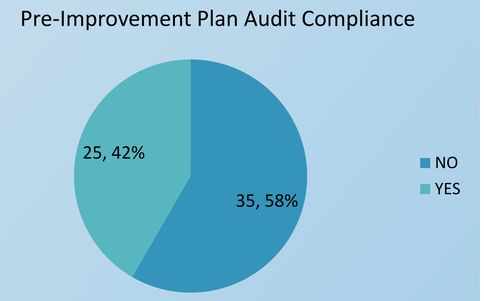
METHODS

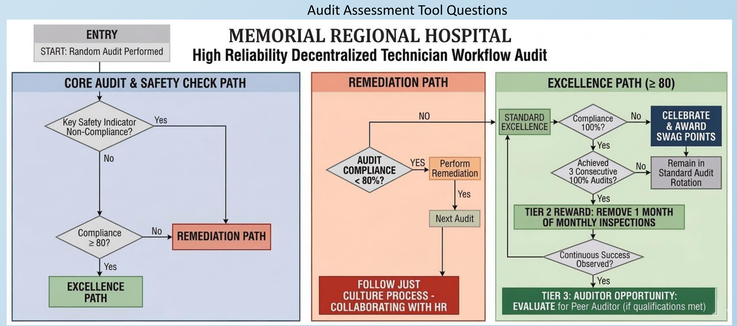
Design Data Collection	Lean Six Sigma Methodology: Kaizen Event 24-question assessment. 16 questions consist of “Yes” or “No” answers denoting “Fail” or “Pass” for compliance Integrated Analytics reports identified ADC activity Compliance = Final score ≥ 80%
Timeline	**Pre – Objective Data:** October 2024 - March 2025
	Pre – Improvement Audits : July – December 2025
	Improvement Period: January 2026
	Post – Improvement Audits: January – April 2026
Improvement Plan	Pareto chart and safety key drivers led optimizations Technician awareness via education Train and implement auditors SOP: Expansion capacity to 10 auditors and quality control checks to validate Develop results algorithm to establish excellence and remediation pathways
Participants	Pharmacy Internal Auditor, Operations’ Manager & Supervisor, Pyxis Administrators, Safety & Quality Coordinator, Director of Pharmacy, Pharmacy Residents
Inclusion	Decentralized pharmacy technician ADC workflow
Exclusion	Centralized pharmacy technician workflow compliance Technician ADC activity followed by subsequent access by other end-users

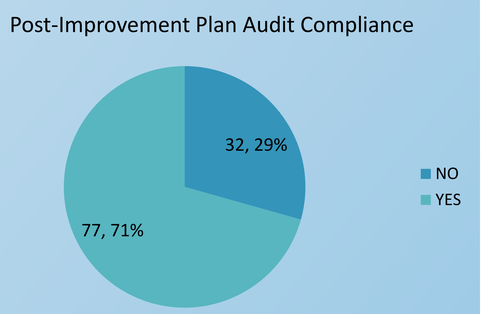
RESULTS

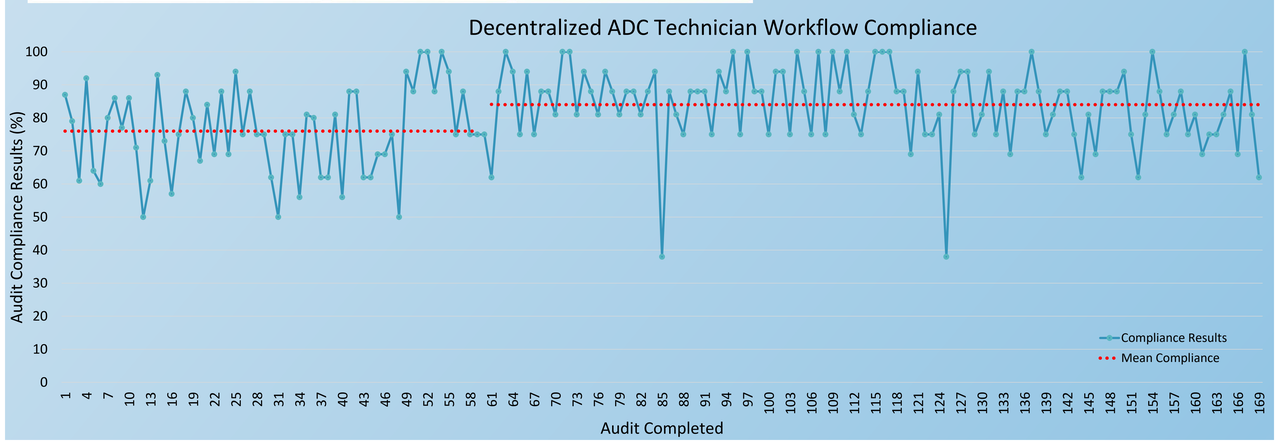
- A collaborative kaizen-based, lean approach enabled implementation of a continuous compliance auditing tool.
- **29% (42% to 71%) increase in technician decentralized ADC management compliance.**
- A total of 169 audits were performed
  - 60 pre-improvement: primarily one auditor
  - 109 post- improvement: expansion to 10 auditor across all 3 working shifts
    - 12 audits resulted in 100% compliance
    - Four competency rechecks performed
- **Mean time of 25 minutes to perform one audit**; run report, conduct audit and submit findings.
- Results shared monthly, emphasizing 77 moments of recognition through technician and staff meetings.
- Common non-compliance post-improvement was mismatch of earliest expiration date reflected in ADC.











CONCLUSIONS

Highly reliable, robust auditing process established with a standardized assessment tool and defined performance indicators.

Expansion to 10 auditors facilitated workflow compliance audits across all three shifts.

Results incorporated in 2026 technician performance evaluations.

DISCUSSIONS

Sustainability: Audits will expand to central pharmacy operations. Support from the Internal Auditor and Pyxis Administrators will continue. Scheduled Supervisor addition will support pharmacy leadership performing audits on all shift.

Limitation: Quality control audits of auditors exposed error prone change in ADC when entering earliest expiration. Ticket opened with manufacturer to evaluate and all technicians notified to prevent documentation errors.

This initiative supports continued advancement with a dedicated pharmacy technician auditor achieving Regulatory Compliance Certification.

Access Supplemental Material

REFERENCES

1. Florida Board of Pharmacy. (n.d.) Automated distribution and packaging for Class II and Class III institutional pharmacies (Fla. Admin. Code Ann. R. 64B16-28.605). Retrieved from https://floridaspharmacy.gov/Forms/laws-and-rules-booklet.pdf

2. The Joint Commission Medication Management MM.03.01.01. January 1, 2025.

3. Underwriters Laboratories, Inc. IISE Lean Six Sigma - Kaizen. Unpublished internal document.

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