Automated Dispensing Cabinets In Pharmacy:

CONFIGURATION, MAINTENANCE, & OPTIMIZATION

Presented by Cassi Prosper, CPhT
25th Annual NPPA Conference
August 9-11, 2022

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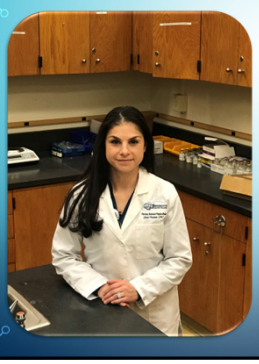

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LEARNING OBJECTIVES

1) Describe common Automated Dispensing Cabinet (ADC) configuration and maintenance procedures for both Pyxis & Omnicell machines
2) Explain the importance of ADC configuration, maintenance, and optimization

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LEARNING OBJECTIVES *(continued)*

3) Describe strategies commonly used to optimize ADC inventory
4) Describe strategies commonly used to implement an effective ADC configuration, maintenance, & optimization program

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AUTOMATED DISPENSING CABINET (ADC) TECHNOLOGY

SOPHISTICATED SOFTWARE

- Patient orders
- Medication dosing documentation
- Inventory management
- Billing transactions

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ADCs In PHARMACY

By a show of hands, how many of you have Automated Dispensing Cabinets at your facilities?

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ADCs in PHARMACY *(continued)*

- Minimize Medication Errors
- Maximize Patient Safety
- Inventory Accountability
- Nursing/Patient Satisfaction
- Reduce Pharmacy Workload

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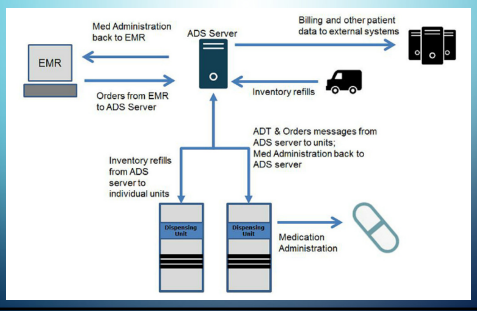
INTEGRATED SYSTEM PROCESS



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IMPLEMENTATION OF ADCs

- Opportunity to extend services beyond working hours
- Increase the accessibility of medications
- Turnaround time for medication delivery from pharmacy to patient care units will be decreased
- Effective computer-based documentation
- Tighter control over medication and operational costs

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IMPLEMENTATION OF ADCs *(continued)*

Automated Dispensing Cabinets should be configured accurately before implementation, and optimized carefully and periodically after implementation

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ADC OPTIMIZATION

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PREVENTATIVE ROUTINE MAINTENANCE KEEPS OUR ADCs OPERATIONAL

- ❑ Dust removal
- ❑ Checking wires
- ❑ Checking auxiliary batteries
- ❑ Checking sensors and other hardware

Review your service contract!

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PREVENTATIVE ROUTINE MAINTENANCE *(continued)*

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INNOVATIVE OPTIMIZATION

Save staff time, resources and save money by reducing medication waste.

Optimize your ADC and tailor the medications for each unit, based off the medications that are actually used at each unit!

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INNOVATIVE OPTIMIZATION *(continued)*

Efficient system management!

Not implementing and utilizing the optimization resources available will most likely lead to wasted time and resources, as well as delay patient care

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OPTIMIZATION OPPORTUNITIES *(continued)*

STRATEGIES FOR SUCCESS

- Data utilization
- Drawer configuration
- Utilization review

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OPTIMIZATION OPPORTUNITIES *(continued)*

STRATEGIES FOR SUCCESS

- Periodic Automatic Replenishment (PAR) levels / refills
- Stockouts
- Meds with active orders

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By a show of hands, how many of you are familiar with or even utilize some of these strategies in your facilities?

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DATA ANALYSIS

Data will be utilized during the initial optimization setup as well as on a continual basis for upkeep.

Data provides insight to all ADC transactions and tracks medication inventory

- Appropriately trained staff for running reports
- Pharmacy dashboards
- Canned reports
- Accurate & reproducible
- Analysts to perform data analysis
- Tackle optimization in a phased approach

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DRAWER CONFIGURATION

PYXIS DRAWER OPTIONS

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DRAWER CONFIGURATION

OMNICELL DRAWER OPTIONS




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DRAWER CONFIGURATION

Locations Determined With The End User In Mind

- Top and bottom drawers should hold slow movers
- Fast movers & larger meds in waist-height drawers
- Controlled substances near eye-level
- Organize layout to maximize space

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MEDICATION REMOVAL

Determine the best interval for each unit

- 30 days
- 60 days
- 90 days
- 120 days

Considerations for standard stock items

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PAR LEVELS & REFILLS

Day Supply Emphasis

- 1-3 Day minimum
- 6-9 Day maximum

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PAR LEVELS & REFILLS
(continued)

Major Considerations

- Average daily dispenses
- Delivery turnaround time
- Size and shape of medications
- High Vend: Fill ratio
- Weekly refills for low-cost drugs

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RESTOCKING WORKFLOW

- Monitor technician workload to ensure efficiency
- Reports to show time taken to complete a restock
- Consistent delivery schedules
- Even distribution of workload-based restock volume

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STOCKOUTS

Canned Stockout Reports

- Reports specific to each drug at each machine
- Increase PAR levels for items that often stock out

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MEDICATIONS WITH ACTIVE ORDERS

- Filter reports for ease of manipulation by patient care area
- Exclude meds that cannot be loaded into ADC

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CREATING OPTIMIZATION EFFICIENCY

- Plan; do; check; act (Lean Methodology)
- Identify significant end-goals
- Initiate a phased approach
- Measure the impact of implemented changes
- Share your success stories!

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CHALLENGES & BENEFITS

- Human resources
- Financial resources

- Efficient distribution
- Less waste

It is important to remind ***key stakeholders*** of the benefits of delivering excellent care and managing resources for efficient distribution to reduce medication waste costs.

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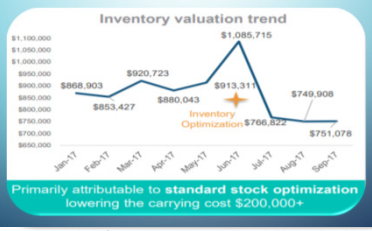
REAL WORLD RESULTS

2017 CASE STUDY OF A LEVEL 1 TRAUMA
839-BED HOSPITAL IN ROCHESTER, NEW YORK



Source: URMC Medication Dispensing Data: Jan 2017 – Sep 2017

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REAL WORLD RESULTS *(continued)*

- 70% reduction in waste
- Stock out rates decreased by more than 50%

Optimization of ADCs through par level optimization, review of common stock, and removal of infrequently used medications reduced pharmacy technician labor, decreased stockout percentages (which decrease omitted medication errors), generate opportunities for cost avoidance, and improved medication turnaround times.

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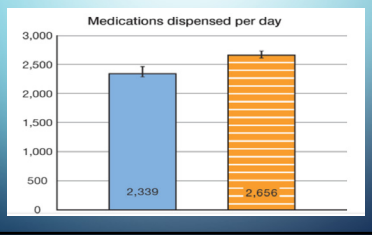
JOURNAL OF CONTEMPORARY PHARMACY PRACTICE "AUTOMATED DISPENSING CABINET OPTIMIZATION IN A LEVEL 2 TRAUMA CENTER"



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EVALUATION OF A CLINICAL PHARMACIST-LED ADC STEWARDSHIP PROGRAM AT A TERTIARY ACADEMIC MEDICAL CENTER

65 Automated Dispensing Cabinets

Through management of ADC par levels, the authors saw a reduction in the amount of medications dispensed manually from the central pharmacy, a decrease in the frequency of medication stockouts on the patient care units, and were able to increase overall cabinet inventory while decreasing cost.

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ASSESS FOR CONTINUED SUCCESS

- Continual monitoring of outcomes
- End user satisfaction
- Pharmacy workflow
- Wait times for cabinet access

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WHAT STRATEGIES DO YOU SEE MIGHT BE BENEFICIAL TO IMPLEMENT AT YOUR FACILITY?

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WHICH ONE IS A COMMON ADC CONFIGURATION STRATEGY?

a) Top & bottom drawers should hold slow-moving medications

b) Top & bottom drawers should hold fast-moving medications

c) Refilling medications that are stocked out

d) Annual dust removal of hardware within all machines

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WHICH ONE IS A COMMON ADC PREVENTATIVE MAINTENANCE PROCEDURE?

a) Top & bottom drawers should hold slow-moving medications

b) Allowing overrides on critical medications

c) Refilling medications that are stocked out

d) Annual dust removal of hardware within all machines

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TRUE OR FALSE

It's a waste of time & resources to implement an ADC configuration, maintenance and optimization workflow

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WHICH OF THESE IS *NOT* A COMMON STRATEGY USED TO OPTIMIZE ADC INVENTORY?

a) Ergonomic drawer-configuration

b) Removing unused medications

c) Loading medication with active orders

d) Setting very low PAR levels to reduce cost

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