



PHARMACY INVENTORY MANAGEMENT & PERPETUAL INVENTORY SYSTEMS

JENNIFER HOFF, CPHT
GUNDERSEN HEALTH SYSTEM

1



LEARNING OBJECTIVES

- Evaluate different systems for storing pharmacy inventory.
- Describe the benefits of a perpetual inventory system.
- Discuss the hurdles when technology downtimes occur and ways to mitigate service interruption.

2

GUNDERSEN HEALTH SYSTEM

- Physician led, not-for-profit healthcare system
- Teaching hospital with 325 beds and Level II Trauma Center
- 30-bed Inpatient Behavior Health Center and 5 renal dialysis sites
- Regional referral center with 6 affiliate hospitals in 3 states
- 22-county service area with 30+ regional clinics

3

GUNDERSEN LUTHERAN MEDICAL CENTER

- Built new hospital and new inpatient pharmacy in 2013
- New pharmacy transitioned to a perpetual inventory system and use of carousels
- Transitioned from ADM use to nurse servers
- Centralized purchasing for the flagship hospital and 2 infusion pharmacies (staff of 3)
- 2019 began decommissioning nurse servers and now have 100+ ADMs

4

GUNDERSEN LUTHERAN MEDICAL CENTER LA CROSSE, WISCONSIN



5

DISPENSING CAROUSELS (PATIENT SPECIFIC & ADMIN USE)



6

INVENTORY CAROUSEL (REQUISITIONS, CARTS, KITS)



7

REMOTE STOCK (FILLS BOTH LOCATIONS)



8

REMOTE STOCK (FILLS BOTH LOCATIONS)



9

REMOTE STOCK (FILLS BOTH LOCATIONS)



10

HIGH VELOCITY PACKAGER



11

PROS OF PERPETUAL INVENTORY

- All inventory at a click of your fingertip
- Annual or semi-annual inventory is relatively fast and easy
- Unlimited tracking of purchasing, receiving, picking, checking, etc.
- Patient safety factor—everything is scanned

12

PROS OF PERPETUAL INVENTORY (CONTINUED)

- Short term backorder—can pull overstock quickly
- Recall—can locate remote stock quickly
- Expired meds—all done via reports
- Purchasing can be done remotely in the short term (multiple COVID illnesses)

13

ADM STOCK SHOWN IN PERPETUAL INVENTORY SYSTEM

Search/Filter | Products | Inventory | GL Values | Misc | Product List

Product Description: metoclopramide 5 mg/ml vial 2ml

Category: Color Codes: - Inventory - Non-Inventory

	Location ID	Location Name	Vendor ID	Vendor Product ID	Min	Max	QOH
	3N	3N	34417	194407	5	10	6.00
	3S	3S	34417	194407	4	8	6.00
	5LD	5LD	34417	194407	3	5	5.00
	5N	5N	34417	194407	5	10	9.00
	5S	5S	34417	194407	3	6	6.00
	1EMS3	1EMS3	34417	194407	5	10	10.00
	1EMS4	1EMS4	34417	194407	3	6	4.00
	2PPA	2PPA	34417	194407	4	8	7.00
	2PPB	2PPB	34417	194407	4	8	7.00

14

ADM STOCK SHOWN IN PERPETUAL INVENTORY SYSTEM

Product Description:

Category: Color Codes: - Inventory - Non-Inventory

Location ID	Location Name	Vendor ID	Vendor Product ID	Min	Max	QOH
3N	3N	34417	746233	20	30	29.00
3S	3S	34417	746233	4	10	8.00
5S	5S	34417	746233	1	2	2.00
1EMS3	1EMS3	34417	746233	1	3	2.00
LAB2CATH2	LAB2CATH2	34417	746233	1	2	2.00
LAB2CATH1	LAB2CATH1	34417	746233	0	1	1.00
OR205	OR205	34417	746233	3	4	3.00
1EMS2	1EMS2	34417	746233	2	3	3.00

15

CONS OF PERPETUAL INVENTORY

- Human error (remote stock areas don't get picked correctly, fat fingers, sudden high use not communicated)
- Human error (easy to botch your inventory if picking/checking steps aren't done correctly)
- Staff often don't log off the system (difficult to determine which individuals are making errors)
- Extremely time consuming to manage (update pars, change defaults)
- Difficult to move drugs when sizes of boxes change significantly between NDCs (ondansetron, metoprolol, glycopyrrolate)

16

CONS OF PERPETUAL INVENTORY (CONTINUED)

- Monthly cycle counts is a must and very time consuming
- Verify inventory is more than just glancing at the shelf
- Controlled substances do not interface with the perpetual inventory system
- Designated receiving time, however, daily order can be late and shipments are received all day
- Equipment (scanners and bio ID) wear and tear and have a high replacement rate

17

CONS OF PERPETUAL INVENTORY (CONTINUED)

- Unexpected downtimes in software
- Unexpected downtimes in hardware
- Relying on third party support, which is variable and not always helpful
- Hardware and software are serviced by different third-party vendors which makes coordinating more difficult
- Regular maintenance is a must, but results in scheduled downtimes

18

MAJOR UNPLANNED DOWNTIME

- Lasted 5 days (Jan 2017).
- Planned downtime due to moving a major server from one city to another.
- Server never came back up and resulted in no interface communication between EHR, ADMs, and Perpetual Inventory System.
- Took most of the medication out of the carousels and in bins on rolling shelving system.

19

MAJOR UNPLANNED DOWNTIME (CONTINUED)

- Each carousel has a binder with medications listed in alpha order. This shows the location in the carousel and was used to tally all use and try to place daily purchasing orders.
- Needed to revert to manual ordering and manual inventory monitoring.
- Needed to do a cycle count on every single product once resolved.

20

REPLACEMENT OF HARDWARE

- Carousel life expectancy is 10-20 years.
- Our carousels are used 24-7, 365 days a year.
- Would like to replace them before a major issue occurs.
- What is the expected downtime?
- If all goes well, how do we replace our current carousels? During overnights and/or weekends? How to function off-line for an extended period?

21

REPLACEMENT OF SOFTWARE

- What are our options?
- How do we test all interfaces and plan for the transition?
- What is the expected downtime?

22



➤ HAS ANYONE REPLACED CAROUSELS?

➤ HAS ANYONE SWITCHED VENDORS FOR PERPETUAL INVENTORY SYSTEM?

23



QUESTIONS?

24