

Informatics Pearls

Learning Objectives for Pharmacists and Pharmacy Technicians

1. Describe an automated system that can be used to track drug recalls.
2. Explain the roles available to pharmacy technicians in the informatics space.
3. Identify a method for reporting near-miss errors.
4. Illustrate an automated workflow for restocking a used pharmacy kit.
5. Describe strategies that can be employed to overcome alert fatigue.

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Informatics Pearls - Battling Alert Fatigue

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No Conflict of Interest

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Know Your Alerts

- Drug-Drug
 - Severity
 - Documentation
 - Management Code
- Allergy
 - Inert Ingredients
 - Cross Allergens
- Precautions
 - Pregnancy
 - Lactation

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Know Your Alerts

- Duplicate Medication
 - Route
 - Status (PRN)
- Duplicate Therapy
 - Categories
 - Status
- Dose
 - Minimum/Maximum
 - Dose/Day

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Low Hanging Fruit

- Duplicate Therapy Allowances
- Suppression in Order Sets
 - Pregnancy Alerts in OB order sets
 - 0.4 warnings/100 orders= 2851 alerts
 - 0.2 warnings/100 orders= 1398 alerts
 - Duplicates (Heparin load, bolus, infusion)
 - 823 alerts/month (August 2014)
 - 0 alerts/month (April 2015)

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Know Your Options

- Example: Drug-Drug Interaction

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Know Your Options

- Example: Duplicate Therapy

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Enlist the Experts

- Workgroup
 - Review Optimization Report
 - Drug-Drug Interactions
 - Management Code
 - Duplicate Therapy
 - What meds are included

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Next Steps

- Workgroup
 - Evaluate Changes
 - Review Optimization Report
 - Drug-Drug
 - User Filtered Alerts
 - Drug-Drug
-
- Pregnancy/Lactation (order sets)
 - Others Already Filtered (e.g. Drug-Food)

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Automated Pharmacy Kit Replenishment Solutions

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No actual or potential conflicts of interest

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One Tray Many Drugs



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Polling Question

- Does your institution use an automated pharmacy kit replenishment solution?
 - A. Yes
 - B. No

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Available Solutions

- Kit Check
- MedEx Tray Safe

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Keeping your numbers straight

- Utilizes RFID technology and/or 3D barcoding to ensure accuracy of tray contents
- Monitor usage, expiration, and lot number information for recalls
- Enables advanced reporting
- Potential for reduction of stock

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Operational Considerations

- Tray Turnover
- Number of items in rotation
- Space Considerations
- Technical requirements

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Self-Assessment Question

An automated pharmacy kit replenishment solution has the potential to reduce the time spent checking kits by how much?

- A. > 25%
- B. >40%
- C. >50%
- D. >75%

Informatics Pearls – The Role of the Technician in Informatics

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Speaker has no conflict to disclose.

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Objective

- Explain the roles available to pharmacy technicians in the informatics space

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Questions

- What is a Pharmacy Technician Informaticist (PTI)?
- In what setting(s) are PTIs employed?

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Pharmacy Technician Informaticists

- Manage pharmacy IT processes
 - Automation and technology systems management
 - Project management
 - Training and education
 - Policy and governance
 - Customer service
 - Reporting

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Inpatient Pharmacy Informatics

- Barcode Medication Administration
- Automated Dispensing Systems
- Inventory
- Computerized Physician Order Entry
- Electronic Health Record

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Community Pharmacy Informatics

- Software evaluation and implementation
- Documentation strategies
- Billing and reimbursement
- End user training
- Maintenance and support

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Other Settings

- Long Term Care
- Specialty Pharmacy
- Mail Order
- Software Vendors
- Third Party Payers
- Education

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Review Questions

- What is a Pharmacy Technician Informaticist (PTI)?
- In what setting(s) are PTIs employed?

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References

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Informatics Pearls – Near-Miss Error Reporting

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Disclosure

- The speaker has no actual or potential conflict of interest to disclose in relation to this presentation.

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Outline

- Background
- Good-Catch Medication Error Reporting Program Overview
- Results of the Program
- Conclusion

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Poll the Audience

How many near-miss medication errors occur monthly at your institution?

- a. <10
- b. 10-50
- c. 50-100
- d. >100

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BACKGROUND

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The Good-Catch Program

- Under-reporting identified during a mock Joint Commission Survey at Hospital Sisters Health System (HSHS) St. Elizabeth's Hospital
- Goals of the Program:
 - Increase error reporting
 - Identify clusters of events
 - Identify processes to target for improvement

Cure L, et al. J Biomed Inform. 2011

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Hospital Sisters Health System

- Multi-institutional health care system comprised of 14 hospitals across Illinois and Wisconsin




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HSHS St. Elizabeth's Hospital

- 303 bed community teaching hospital
- Located in Belleville, IL

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Defining Medication Errors

NCC MERP Index for Categorizing Medication Errors



Near-miss errors: an event occurs that does not reach the patient

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GOOD-CATCH MEDICATION ERROR PROGRAM OVERVIEW

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Prior to Implementation

- All medication error events were reported through a third party tool, Peminic®
- Average number of errors reported: 11 per month
- Computerized Provider Order Entry (CPOE): 80.9%/month

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Limitations to Reporting Through Peminic®

- Time consuming
- Number of clicks/screens to navigate
- Limited information collected by system
- Web based application
 - Interrupts pharmacist's workflow

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Implementation of the Good-Catch Routine Entry

- Image removed due to possible proprietary restriction

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RESULTS

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6 Months Post – Implementation

- September 2014-February 2015:
 - Total number of events = 654
 - Average number per month: 109
 - 891% increase in reporting**
 - Total number of events with high-alert medications = 280
 - 42% of total errors
- Flat file utilized to directly send data to be uploaded into Pemicin®

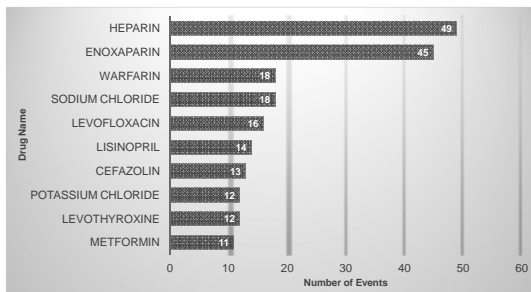
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Scorecard

Good Catch Medication Events Scorecard											
Year	Month	Total Number of Events	High Alert Medication Events	High Alert Medication Events as % of Total	Number of Errors	Number of Errors as % of Total	Number of Errors as % of Total	Number of Errors as % of Total	Number of Errors as % of Total	Number of Errors as % of Total	Number of Errors as % of Total
2014	SEP	109	45	41%	18	16%	14	13%	12	11%	11%
2014	OCT	109	45	41%	18	16%	14	13%	12	11%	11%
2014	NOV	109	45	41%	18	16%	14	13%	12	11%	11%
2014	DEC	109	45	41%	18	16%	14	13%	12	11%	11%
2015	JAN	109	45	41%	18	16%	14	13%	12	11%	11%
2015	FEB	109	45	41%	18	16%	14	13%	12	11%	11%

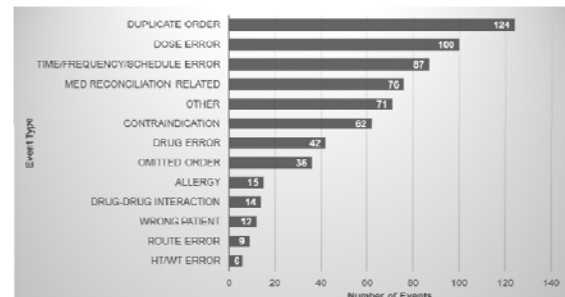
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Number of Events by Medication



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Number of Events by Event Type



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Conclusion

- Strengths
 - Program increased reporting
 - Captured a large enough sample to analyze data
- Limitations
 - Likely not catching all near-miss errors
 - Entry is subjective, based on pharmacist's perception

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Self-Assessment Question

Which factors must be taken into consideration when developing a process or tool to report medication errors?

- A. Sustainability of the process
- B. Ease of use of the reporting tool
- C. Ability to track events reported through the tool
- D. All of the above

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Drug Recall Tracking

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Recall Management

1. Recalls continue to be grow
 - Exponential growth since 2008¹
2. Several challenges to Recall Management²
 - Source of truth
 - Response rate
 - Volume of recalls
 - Storage of information
 - Liability

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NorthShore University HealthSystem

- Integrated healthcare delivery system
- 4 Acute Care Hospitals
- 70+ Medical Group offices

How do we manage recalls for medications, devices, food, and equipment?

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Electronic Management

- Information feeds from FDA and Manufacturers
- Coordinator delegates to buyers
- Buyers are responsible follow up
- Comprehensive location to store follow up information
- Covers scope of all FDA recalls

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	Q3 Closed alerts	Q3 AVG Days to Close	% Closed Alerts Q3	Remaining Open Alerts Q3	Total Closed FY15	Total Open Alerts FY15
Biologics	11	3	100%	0	11	0
Biomedical Devices	741	10.1	87.5%	14	740	77
Blood Products	0	0	100%	0	0	0
Children's Products	16	1	100%	0	72	0
Engineering & Facilities	68	4.7	100%	0	360	0
Food	96	5.1	96%	4	488	4
Information Systems	0	0	100%	0	28	0
Lab Products	412	2.6	96.2%	16	1192	16
Med Supplies	350	1.6	100%	0	1110	0
OR Products	800	3.5	99.9%	1	2113	5
Pharmaceuticals	2672	7.4	97.6%	66	9089	110
Radiology Products	238	16.1	85%	42	771	109
Tissue	0	0	100%	0	0	0
Veterinary Products	1	23	100%	0	11	0
Total Alerts	4895	6.4	96.8%	162	16335	316

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What it doesn't solve

- People doing their job
- Getting 100% of all information
- Confusing updates
- Friday afternoon scramble
- "Track and Trace"

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Self-Assessment Question

Which of the following is a benefit to having an automated or electronic medication recall system

- A. Automatically removes recalled products from the storage areas
- B. Provides a comprehensive electronic location to store follow up information that is easily retrievable
- C. Sends recall information to patients
- D. Fulfills all requirements of "Track and Trace" legislation

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