

Tech Check Tech: Is Your Institution Ready?

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- I have no actual or potential conflict of interest in relation to this presentation.

Tech Check Tech

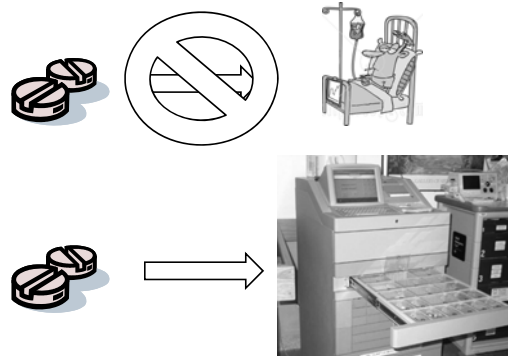
- Definition
 - A program that allows certified and trained pharmacy technicians to check medications filled by another technician
 - Specifically for medications that will be delivered to automated dispensing cabinets (ADCs) on the floors
 - ADC stock
 - Unit of use doses
 - Excludes
 - Pre-made or prepared intravenous medications
 - Narcotics
 - First dose medications

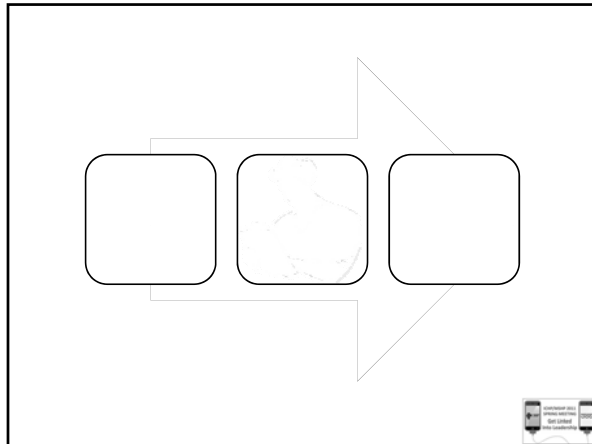
Tech Check Tech

- Purpose and Implications
 - Pharmacists
 - Allows more time for clinical activities
 - Further decentralization
 - Technicians
 - Expands roles and responsibilities
 - Additional incentive

Tech Check Tech

- Program characteristics
 - Applies to acute care inpatient hospital pharmacy settings
 - Applies to hospitals that maintain a clinical pharmacy program
 - Pharmacist in charge is responsible for the operation of the program
 - Pharmacy technician must have specialized and advanced training
 - Quality assurance measures must be in place





Which of the following would be eligible medications for a TCT program?

- A) 5 vancomycin 2 g IVs for the 8th floor north side Omnicell/Pyxis machine
- B) 1 metoprolol tartrate 25 mg tablet for patient Doe, John in room 1330 (first dose)
- C) 10 prednisone 1 mg tablets for the 4th floor south side Omnicell/Pyxis machine
- D) 3 containers of morphine sulfate 20 mg/5 ml oral solution for the 4th floor north side Omnicell/Pyxis machine

Tech Check Tech: Other States

What examples are there for us to follow?

Tech Check Tech: Minnesota

- History
 - TCT program developed by the Minnesota Society of Health-System Pharmacists and approved by the board of pharmacy (revised in 2003)
- Technician eligibility
 - A student pharmacist with 6 months experience in unit dose filling
 - A technician working full or part-time with one year equivalent experience in unit dose filling

Tech Check Tech: Minnesota

- Technician validation
 - Didactic lecture or equivalent
 - One-on-one training with a pharmacist
 - Must obtain 99.8% accuracy rate in 1500 doses of unit of use batches (divided in 5 separate audits)
 - Must obtain 99.8% accuracy rate in 500 items of ADC stock batches (divided in 5 separate audits)
 - QA Pharmacist introduces at least 3 errors in each audit
 - Errors recorded in a log

Tech Check Tech: Minnesota

- Quality assurance
 - Random, unannounced
 - Audit 300 doses for the unit-of-use batch
 - Audit 100 doses for the ADC stock items
 - No more than 1 error can be made
 - Errors recorded in a log
- Schedule of audits
 - First pass 3 consecutive monthly audits
 - Then quarterly for a year
 - Finally, semi-annually

Tech Check Tech: Wisconsin

- History
 - First variance granted to UW Hospital & Clinics in 2004
 - Sara McEnaney, PharmD, MBA from Froedtert Hospital had a recent publication in KeePosted with her study on TCT
- Technician eligibility
 - Pharmacy technician working full-time with ≥ 1 year of experience
 - Must be a certified pharmacy technician
 - Complete specific training
 - Self-learning packet
 - Simulated practice training



Tech Check Tech: Wisconsin

- Technician validation
 - Must obtain 99.8% accuracy rate in checking 3500 consecutive doses (divided in 5 separate audits) for both ADC stock batches and unit of use doses
 - Techs must identify ≥ 7 errors per 3500 doses in order to become validated
 - Pharmacist will introduce errors at minimum rate of 0.2%
 - Errors recorded in a log



Tech Check Tech: Wisconsin

- Quality assurance
 - Daily audits on 10% of the ADC stock batches and unit of use doses prior to delivery to floor
 - If accuracy of a technician is $<99.8\%$ within a 6 month period, must be re-trained and re-validated
 - Re-training and re-validation required if a tech has not performed TCT in >4 months
 - Errors recorded in a log



Tech Check Tech at Northwestern Memorial Hospital?



PGY1 Pharmacy Residents

- Collaborative research project conducted by
 - Colleen Czerniak, PharmD
 - Lara Ellinger, PharmD
 - Stacy Gianakakos, PharmD Candidate
 - Juhi Jain, PharmD
- Presented at UHC Pharmacy Council and ASHP Midyear meetings in Anaheim, CA in December, 2010
- Presented to the Illinois Board of Pharmacy in January, 2010



Study Objectives

- To determine if there is a difference in the quality of checking ADC stock medications between pharmacists and technicians
- To determine if a TCT system can be implemented at Northwestern Memorial Hospital for medications used to fill automated dispensing cabinets



Methods

- Performed bi-weekly over the course of 1 month
- 5 technicians and 5 pharmacists participated in the pilot study
- Certified technicians were trained to perform medication checking responsibilities for ADC stock batches
- Understanding of procedures and training were verified through verbal feedback and direct observation
- Intentional errors were introduced to assess the accuracy of the checkers



Methods

- A “Quality Pharmacist” performed an audit of all doses and documented any additional intentional or spontaneous errors that were not identified by the checkers
- Differences in the ability to detect errors between the groups were analyzed utilizing Chi square or Fisher’s exact test where appropriate

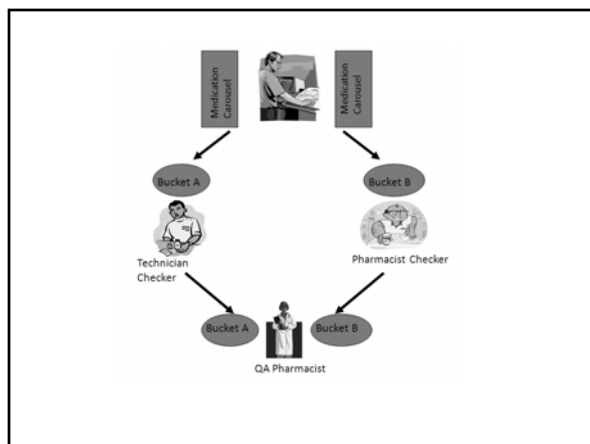


Technician Training

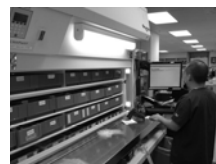
- A PowerPoint session was held for interested certified technicians
 - Background and purpose
 - Protocol
 - Product characteristics for checking
 - ISMP’s high alert medications
- Technicians were then shown how to check items for the ADC stock batches



High Alert Medications



NMH Medication Carousel





Error Introduction Sheet

Name of batched medication _____ Dose _____ Dosage form _____
 Qty _____ Identifying number _____
 Mistitled with: _____ Dose _____ Dosage form _____
 → Error identified by checker Error **NOT** identified by checker Initials for error removal _____

Name of batched medication _____ Dose _____ Dosage form _____
 Qty _____ Identifying number _____
 Mistitled with: _____ Dose _____ Dosage form _____
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Name of batched medication _____ Dose _____ Dosage form _____
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 → Error identified by checker Error **NOT** identified by checker Initials for error removal _____

Tech-Check-Tech Error Sheet

Name of Checker: _____ Date: _____
 ☐ Technician Checker ☐ Pharmacist Checker

Instructions: Please make a tally for each error that is found. **Remove** the error. Once the error has been corrected place it into the bucket labeled "error." Once all items have been checked, take all pink buckets (including the error bucket) along with this form to the quality pharmacist.

Type of Error	Amount of errors
Wrong drug	
Wrong dose	
Expired med	
Wrong quantity	
Wrong dosage form	
Other (please specify)	

Total number of errors identified: _____
 Total number of doses checked: _____

For Quality Pharmacist Use Only

Name: _____

Please make a tally for each error that was not discovered by the checker.

Type of Error	Amount of errors
Wrong drug	
Wrong dose	
Wrong quantity	
Wrong dosage form	
Other (please specify)	

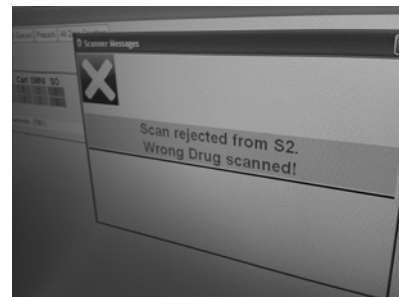
Total number of errors **NOT** identified by checker: _____

All reconciled errors must be documented below before the fill can leave the pharmacy!!!!

Safety Measures

- Bar coding to remove drugs from medication carousel
- QA pharmacist
 - Reconciles list of errors
 - Serves as 2nd check
- Errors separated
- Bar coding to stock drugs into ADCs
- Bar coding to remove drugs from ADCs
- Nurse performs final check prior to dispensing to patient

Safety Measure



Safety Quiz

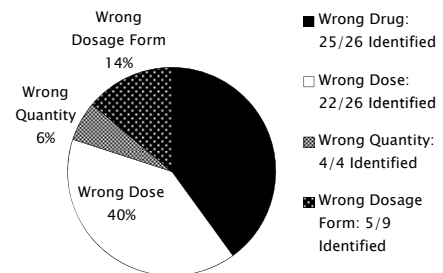
- Which of the following is not a safety measures in our TCT study?
 - A) Barcoding at the medication carousel
 - B) Barcoding at patient's bedside
 - C) Barcoding at the ADCs
 - D) QA pharmacist performing a double check
 - E) RN performing a triple check prior to dispensing medication to patient

And now, for our results...

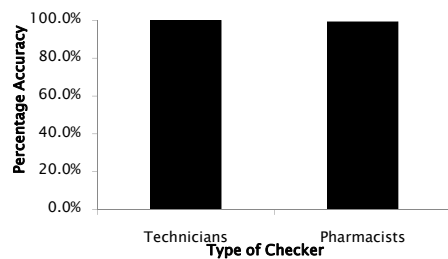
Results

	Technician	Pharmacist
Total Errors	31	33
Errors Unidentified	0	8
Errors Identified	31	25
Doses Checked	1176	1176
Error Identification Rate	100%	76%
Overall Accuracy Rate [†]	100%	99.3%

Types of Errors



Accuracy of Checkers



Limitations

- o Technician incentive for expanded role
- o Technician inexperience
- o Formal training for technicians but not pharmacists
- o Limited sample size required error introduction
- o Concurrent pharmacist responsibility
- o Lack of variability in checkers
- o Hawthorne Effect

Discussion

- Technicians are not inferior to pharmacists in accuracy of checking ADC stock batches
- Provides opportunities for technicians
- Pharmacists can focus on optimal patient care
- Based on these results, it may be ideal for technicians to check ADC stock medications at NMH

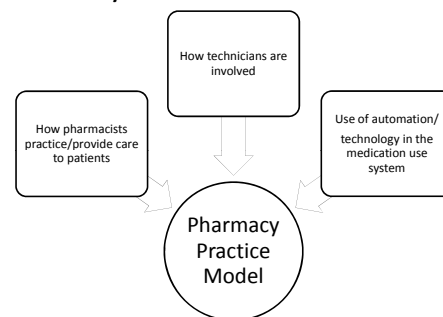
What's Next?

- Continue collecting data
- Expand the study to cartfill (unit of use batches) for the ADCs
- A representative from the IL BOP will be visiting to see the process firsthand
- ICHP to work with IL BOP for a change in the pharmacy practice act to allow for TCT in institutional pharmacies
- Start training and validating technicians and implement TCT!

ASHP 2015 Initiative

- Goals 1 and 2
 - Increase the extent to which health-system pharmacists help individual patients achieve the best use of medications
- Goal 4
 - Increase the extent to which pharmacy departments in health systems have a significant role in improving the safety of medication use

Pharmacy Practice Model Initiative



Audience Poll

- Do you think that changing the role of pharmacy technicians can help advance the role of pharmacists in medication therapy management?
- A) Yes, make a major change
 B) Yes, make some minor changes
 C) No
 D) I don't have an opinion

Current Poll

Do you think that changing the role of pharmacy technicians can help advance the role of pharmacists in medication therapy management?



205 Votes Total

Your Institution

- Resources:
 - Certified technicians
 - Medication distribution insight
 - Pharmacy residents
 - Introduction to pharmacy operations and medication distribution
 - Medication safety teams
 - P&T committees



Audience Assessment

- Do you think a Tech Check Tech program is feasible at your institution?
 - A) Yes
 - B) No



References

1. Woller TW, Stuart J, Vrabel R, Senst B. Checking of unit dose cassettes by pharmacy technicians at three Minnesota hospitals. *Am J Hosp Pharm.* 1991;48(9):1952-6.
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3. Ambrose PJ, Saya FG, Lovett LT, Tan S, Adams DW, Shane R. Evaluating the accuracy of technicians and pharmacists in checking unit dose medication cassettes. *Am J Health-Syst pharm.* 2002;59:1183-8.
4. http://www.ashp.org/images/ppmi_poll3.gif. Accessed March 14, 2011.
5. www.ashp.org/2015. Accessed March 10, 2011.



Questions?



ICHP/MSHP 2011 Spring Meeting
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Post Test Questions:

- 1) What is the purpose of Tech Check Tech for pharmacy technicians?
 - a. Increased pay
 - b. Decreasing the demand for pharmacists
 - c. Expanded roles and responsibilities
 - d. Reduce medication errors

- 2) Which of the following are characteristics of a Tech Check Tech Program?
 - a. Technicians must be validated and also be audited periodically for quality assurance
 - b. Intravenous medications are not eligible for the program
 - c. Has been implemented in both inpatient and community pharmacy setting
 - d. Both a and b