Teaching Interdisciplinary Medication Safety: Engaging Learners From the Classroom to the Clinic

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The authors of this presentation have nothing to disclose.

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Objectives

- Identify current challenges in teaching medication safety
- Describe the case based approach to teaching medication safety and other interactive approaches for teaching medication safety in the classroom
- Compare high and low fidelity simulation models and their roles in teaching medication safety
- Describe methods for engaging medical residents, pharmacy residents, and pharmacy students in medication safety activities

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The Challenge

- Paper charts or EMRs?[1]
- Insulin vials and syringes vs. insulin pens?
- Standard concentration of a bag of norepinephrine?
- Batch dispense medications or one dose at a time?

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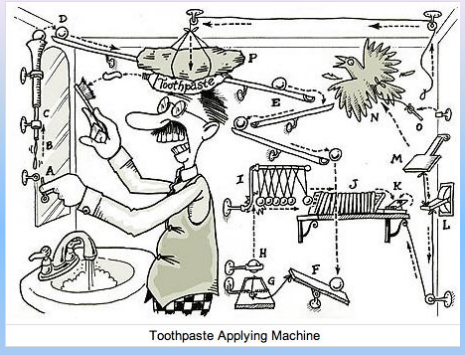
1. Downing NL, Bates DW, Longhurst CA. Physician Burnout in the Electronic Health Record Era: Are We Ignoring the Real Cause?. Ann Intern Med. [Epub ahead of print 8 May 2018]



Toothpaste Applying Machine

Train Scientists, not Machines

- Ask "Why" it is not performing as expected
- The goal is to train students to learn how to assess a medication use process or system
- Measure its current level of performance
- What are strategies that we can use to decrease error in various processes

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Simulating Safety

Creating memories

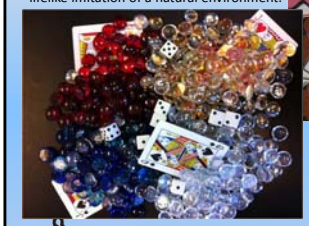
- Why do we remember some things in great detail and others with less clarity?
- We love our jobs! But can we remember every patient on every day, every year?
- Key: need to create a trigger or a story to correlate lessons learned

Safety Simulation – High Fidelity

Often large, expensive, but very intensive training facilities meant to mimic as near a lifelike situation as possible with immediate feedback on the same systems providing feedback in the native environment.

Safety Simulation – Low Fidelity

Often smaller, inexpensive tabletop situations that require minimal equipment that is most often representative in nature rather than a lifelike imitation of a natural environment.



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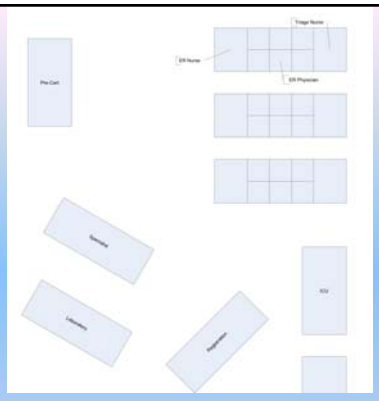

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Course Model

1) Didactic course work in class
   - Identifying adverse events
   - Classifying these events
   - Background and assessment of environment and all contributing factors to the event
   - Root cause analysis (RCA)

- Goal: cover a host of topics that broaden the student's understanding of the medication use process and where challenges exist

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Week	Day	Date	Topic
1	T	8/30	Introduction to Med Safety
	R	9/1	National Safety Organizations
2	T	9/6	Safety Practices and Med Errors
	R	9/8	Errors Associated with Different Processes
3	T	9/13	Med Error Reporting and Regulatory Agencies
			FMEA and RCA
	R	9/15	Measurement and Dashboards
4	T	9/20	PDSA and Implementation + OFFICE HOUR
	R	9/22	Pharmacists' Role in Med Safety and the Culture and Impact on Med Safety
5	T	9/27	Impact of Med Safety and Practice Standards
	R	9/29	**Presentations**
6	T	10/4	**Presentations**

Course Model

2) Group Case Analysis
- Assign groups of 5 team members
- Provide a detailed patient case
- Groups must identify the adverse events, all associated factors, and describe what happened
- Provide a root cause for the event
- Identify how to eliminate or mitigate the chance for this error in the future
- Measurement: demonstrate improvement
- Overall presentation skills in a timely manner

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Sample Case

- Cases are typically 10-15 pages of data
- Describe the facility
  - Students will present one community pharmacy case and one health system pharmacy case
- Environment/technology
- Narrative of the event
- Additional data
- Goal is to mimic as much data as possible

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Course Model

3) Evaluation
   - Provide a rubric to all students well in advance of the presentation so that they will know exactly how they will be evaluated on their presentation
   - Stress individual areas and the importance of connecting issues

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Point Value	9	7	5	3	1	0	Comments
Introduction	Introduction contains an effective hook, captures the audience's attention, contains a strong statement of purpose, and sets a professional tone for the presentation	Introduction captures the audience's attention and contains a statement of purpose for the presentation	Introduction contains sufficient information, but does not capture the audience's attention	Introduction is missing significant information	Introduction is missing significant information, and distracts the audience	Not included	
Background/ Current Operations	Contains relevant background information for your pharmacy and its operations that contributes to the audience's understanding of why your proposal is necessary	Contains relevant background information for your pharmacy and its operations but does not contribute to audience's understanding	Contains relevant background information for your pharmacy and its operations but missing relevance to your proposal	Contains relevant background information for your pharmacy or its operations but missing relevance to your proposal	Information does not contribute to an understanding of why your proposal is necessary	Not included	
Case	Description provides a comprehensive overview and provides audience with a good understanding of the situation and result, and is presented in a clear, logical manner	Provides an adequate overview and understanding and presented in a clear, logical manner	Provides an adequate overview and understanding but not presented in a clear, logical manner	Missing some relevant details. Audience is left with minor questions	Significant detail missing. Audience is left with major questions	Not included	
Root Cause Analysis	All causes are identified and explained in thorough detail	All causes are identified and explained in some detail	Most elements identified and explained in sufficient detail	Missing some relevant causes or details	Missing all main causes	Not included	
Proposed Changes	Addresses all of the causes and are explained in thorough detail	Addresses most of the causes and are explained in sufficient detail	Addresses some major causes or not explained in sufficient detail	Addresses some major causes and not explained in sufficient detail	Does not address any major causes	Not included	
Action Plan	Action plan accounts for all steps and deadlines are realistic	Action plan accounts for all steps but deadlines are unrealistic	Action plan does not account for all steps or deadlines are unrealistic	Not all relevant steps are accounted for and deadlines are unrealistic	Missing significant detail and unable to provide utility	Not included	

Point Value	9	7	5	3	1	0	Comments
Measuring Outcome	Method for measuring outcome and a plan for follow up and explained in thorough detail	Method for measuring outcome and a plan for follow up and explained in sufficient detail	Lacks a method for measuring outcome, a plan for follow up, or explained insufficiently	Lacks a method for measuring outcome or a plan for follow up. Explained insufficiently	Method for measuring outcome and a plan for follow up are irrelevant	Not included	
Conclusion	Presenter is able to review relevant information and "close the sale." Audience is intrigued and invested in the proposal	Presenter is able to review relevant information with a strong sales pitch, but audience not fully invested in the proposal	Summary of presentation, but no strong sales pitch. Audience understands program, but is not invested in its success	Conclusion is ineffective in summarizing the presentation or no attempt at "closing the sale" is made	Conclusion is ineffective in summarizing the presentation and no attempt at "closing the sale" is made	Not included	
Logistics	Presentation does not exceed 20 min, all group members contribute significantly, power point slides are effective and compliment the presentation well	Time is used effectively. Involvement of group members is somewhat unbalanced or power point slides contain minor errors	Time is used ineffectively, involvement of group members is unbalanced, or power point slides contain minor errors or are distracting	Time is used ineffectively AND involvement of group members is unbalanced, or power point slides contain minor errors or are distracting	Time is used ineffectively, involvement of group members is unbalanced, and power point slides contain significant errors or are distracting	Not all group members participated, or power point presentation is not utilized	
Innovation/ Appropriate Idea	Idea is completely unique and/or appropriate med safety solution	Idea is moderately creative/unique and appropriate	Idea is appropriate	Idea is moderately appropriate	Idea did not demonstrate full understanding of safety principles	No thought put into proposal	

Goal

- Train students to be effective safety professionals by training them to look at systems and offer improvements
- Avoid the absolute or definitive answer
- Prepare students to present cases effectively and offer up improvements in difficult times

Questions

Cases and transformation

- Transformative Learning = change in perspective?
- Confronting healthcare challenges without patient harm
- Application of learning to diverse situations
- Reinforcing previously learned lessons

J Nurs Care 2014, 4:1
PAACE Journal of Lifelong Learning, Vol. 19, 2010, 39-54

Levels of Learners

Experiential students	PGY1s/Interns	PGY2s and beyond
Limited and/or classroom-based training	Limited and/or classroom-based training	PGY1-level training and patient care experience
Present concepts	Present concepts in an event-based format	Review concepts with prospective review
Teach non-linear problem solving	Teach and/or model non-linear problem solving	Model, coach, and facilitate non-linear problem solving
Discuss culture and appropriate types of event follow-up	Discuss and review culture and describe specific event follow-up from historical events	Develop specific follow-up based on patient-centric events
Supplement with case-based topic reviews and medication safety updates		

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Teaching Concepts

- Thinking outside the box vs. “what is the box?”
- Move foundational information into practice
- Present usual facts from a different perspective
- Relate new information to accepted norms

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Teaching concepts

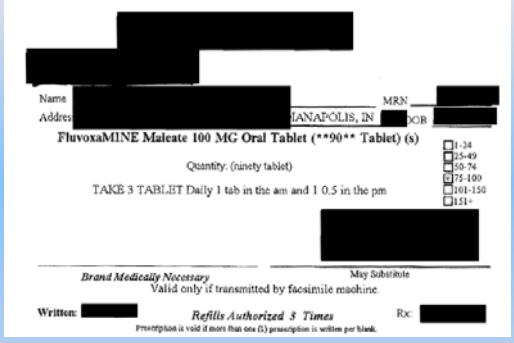
Use the first emphasis letter

1. Paired with amLODIPine
2. Paired with diphenhydrAMINE
3. Paired with clomiPHENE
4. Paired with traZODone

PGY1s and Interns

PGY1 Residents
Review and discuss a selection of previously reported medication safety events
Discuss specific types of errors or risk situations (high-alert, look-alike/sound-alike, EHR-related: faulty defaults, deleted medications)
Review components of the outpatient medication use process that may contribute to medication safety events or near-misses by reviewing 8 to 10 relevant cases from the PCC.
Discuss the impact of patient health literacy on medication safety and complete a health literacy self-assessment. (Newest Vital Sign)
Complete a medication safety-focused chart review to practice focusing on safety instead of just therapeutics
Review the process of reporting an error within the ambulatory care setting at the PCC.
Review, discuss, analyze and follow-up, and enter a reported event into the electronic ERS system.

PGY1s and Interns


[redacted]
Name [redacted] MRN [redacted]
Addres [redacted] IANAPOLIS, IN [redacted] DOB [redacted]
FluvoxaMINE Maleate 100 MG Oral Tablet (**90** Tablet) (s)
Quantity: (ninety tablet)
TAKE 3 TABLET Daily 1 tab in the am and 1 0.5 in the pm
1-24
25-49
50-74
75-100
101-150
151+
[redacted]
Brand Medically Necessary
May Substitute
Valid only if transmitted by facsimile machine.
Written: [redacted]
Refills Authorized 3 Times
Rx: [redacted]
Prescription is void if more than one (1) prescription is written per blank.

PGY2s and Beyond

PGY2
Review, discuss, analyze and follow-up, and enter a reported event into the electronic ERS system.
Conduct a safety review of pre-selected patient charts (1-3 as determined by the resident prior to the meeting with pharmacy)
Review resident-specific medication orders utilizing EHR queries. Reviews may include: • Renal dosing of medications • Appropriate use of high-alert medications • Identification of high risk drug interactions • Review of previously deleted medications • Evaluation for the presence of "faulty defaults" • Assessment of the use of Beer's list medications in the elderly
Provision of evidence-based background to support appropriate medication adjustments based on the above criteria.
Development of a personal plan to implement safety-related process improvements to address any concerns identified in the above queries.

Teaching versus Marketing

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Fact or Fiction?

Your expertise with solving look-alike/sound-alike (LASA) mysteries has become known far and wide, and you are called to testify as an expert witness in a robbery case. The pair of thieves broke into a clinic in search of some "Oxy's" and are being prosecuted for the theft. They are countering by suing the clinic because they feel like they were victims of a LASA event. They would like the clinic to be fined for poor signage regarding at-risk LASA medications. In addition, they are seeking damages because after use of the "oxy" that they stole, they developed feelings of empathy and bonding towards their neighbors and stronger-than-normal feelings of affection for each other.

You are asked to determine if they were, indeed, victims of a LASA event, and if so, what drug? What do you tell the jury?

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Questions

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