PHA6935: Preventing Medication Errors

3 credit hours

Note: The final syllabus posted in the course Canvas site is the most current and supersedes the syllabus posted on the internet.

Class Meeting Times

Wednesdays, June 28 through August 2, 2023, 7:00-9:00 pm Eastern; first class is mandatory and will be Wednesday June 28.

> *There will be NO live class July 5th.
> *There WILL be a mandatory, prerecorded class and quiz the week of July 4th.
> *The final project will be presented during the last week of class.

Class Meeting Location

Class meetings are held in Zoom, which can be accessed via the course Canvas site. If you are having trouble accessing the course Canvas site, please contact Distance Education Support Services at DESS@ahc.ufl.edu.

Instructors

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Office Hours: By appointment, before, or after class meetings
Office Location: via Zoom or phone

Course Description

This course covers fundamental components and practical considerations for improving medication safety in any practice setting. Students will be exposed to practical tools and tips for medication safety work and quality improvement processes that are adaptable to any workplace. Students will gain an appreciation that healthcare providers are fallible and despite expertise and commitment to quality, errors and other adverse events with medications will occur. This course explores the multifactorial causations when investigating

medication errors. Never can an incident be blamed on one single factor; therefore, this course covers the development and implementation of safety improvements specifically at preventing well known and repetitive categories of prescribing, dispensing, and administration errors.

Course Objectives

Upon successful completion of this course, the student will be able to:

1. Describe the role and responsibilities of the medication safety leader.
2. Recognize why error reporting is a fundamental component of a safety culture.
3. Discuss the impact of Just Culture on medication safety.
4. Develop error reduction strategies to target specific situations or risk groups (e.g. high-alert medications).
5. Discuss the use of technologies to enhance medication safety efforts.
6. Summarize medication safety resources, including websites, books, and organizations.
7. Describe how to use information gathered during a root cause analysis to minimize the occurrence of medication errors.
8. Assess practice environments for factors that can contribute to the occurrence of medication errors.
9. Demonstrate application of error reduction strategies (exercise, assignment).

Relationship to Program-level Student Learning Outcomes

This course pertains to the following program outcomes:

1. Identify, interpret, and utilize core knowledge across the spectrum of Pharmaceutical Sciences.
2. Analyze and apply material from foundation courses in the curriculum, interpret data, and synthesize a response to a complex problem or case.
3. Deliver a presentation on a discipline-specific topic related to Pharmaceutical Sciences for internal academic review. These presentations will be clear in providing information at an appropriate level to the audience, complete in providing the necessary and relevant background from the literature, and will utilize appropriate audiovisual aids that are clearly constructed.

Required Textbooks and/or Software

Larson C, Saine D. *Medication Safety Officer's Handbook.* American Society of Health-System Pharmacists. Bethesda, MD; 2013. ISBN 978-1-58528-210-4

Institute for Healthcare Improvement (www.ihi.org). Under the Education link, you can access Open School and register for free as a UF student.

This textbook is optional: Cohen M, ed. *Medication Errors, 2nd edition*. APhA. Washington DC; ISBN-13:987-1-58212-092-8

Additional reading assignments from current websites, journal articles, and news articles are assigned for each module. These reading assignments are provided in Canvas.

Recommended Materials
None

Course Pre-Requisites
None

Structure and Organization
This course is organized into weekly modules in UF's e-learning system, Canvas. The assigned work (eg, readings, videos, discussion boards, and assignments) for each module is clearly detailed in Canvas. In addition, the faculty and students meet synchronously once per week using Zoom. This course is self-paced to accommodate the time constraints of individual students. However, students are expected to complete the assigned work for each module before each weekly synchronous class meetings and by the posted deadline.

Course Schedule

Week	Date	Topic/ homework	Assignments
1	Wednesday, June 28 Introduction to prevention of medication errors	Student/ faculty introductions Introductory material: Health care and safety Describe the role and responsibilities of the medication safety leader	• Syllabus quiz **IHI QI 101: Introduction to health care improvement:** Lesson 1: Health and health care today Lesson 2: The institute of medicine aims for improvement Lesson 3: Changing systems with the science of improvement **IHI PS 101**: **Introduction to Patient Safety** Lesson 1: Understanding adverse events and patient safety Lesson 2: Your role in a culture of safety Lesson 3: Your role in building safer, more reliable systems **IHI PS 105: Responding to Adverse Events**: Lesson 1: Responding to an adverse event: a step by step approach Lesson 2: Communication, apology, and resolution
2	Wednesday, July 3	Error analysis, responding to adverse events	**IHI PS 102: From error to harm:** Lesson 1: The Swiss cheese model Lesson 2: Understanding unsafe acts Lesson 3: A closer look at harm **IHI PS 201: Root Cause Analyses and Actions:**

	Root Cause Analysis Process Improvement ***No class meeting***	Describe how to use information gathered during a root cause analysis to minimize the occurrence of medication errors Recognize elements for successful process improvement Summarize medication safety resources, including websites, books, organizations Homework: Lessons Learned about Human Fallibility, System Design, and Justice in the Aftermath of a Fatal Medication Error https://www.ismp.org/events/lessons-learned-about-human-fallibility-system-design-and-justice-aftermath-fatal-	Lesson 1: Preparing for root cause analyses and actions Lesson 2: Conducting root cause analyses Lesson 3: Actions to build safer systems **IHI QI 102: How to improve with the model for improvement:** Lesson 1: An overview for the model of improvement Lesson 2: Setting aim Lesson 3: Choosing measures Lesson 4: Developing changes **IHI QI 103: Testing and measuring changes with PDSA cycles:** Lesson 1: How to define measures and collect data Lesson 2: How to use data for improvement Lesson 3: How to build your degree of belief over time **Larson/Saine: Ch 6**

		medicationLinks to an external site. Comment on the relationship of a Just Culture and medication safety/medication safety leadership Field trip: Review the ASHP Medication Safety Resource Center https://www.ashp.org/Pharmacy-Practice/Resource-Centers/Patient-Safety/Medication-Use-Safety (membership required for access) *OR* CDC Medication Safety Program https://www.cdc.gov/medicationsafety/index.html What makes this site valuable? Comment on your top 3 features of this site	

| 3 | Wednesday, July 12 Culture of safety

Human factors and safety | Recognize error reporting as a fundamental component of a safety culture

Discuss the impact of Just Culture on medication safety

Assess practice environments for factors that can contribute to the occurrence of medication errors
Homework: Please read one of the following articles and then post your comments on the relationship of a Just Culture and medication safety/medication safety leadership.
Just Culture: A Foundation for Balanced Accountability and Patient Safety
or
Patient Safety and the "Just Culture": | **Larson/Saine**: Ch 1, 9
ASHP statement – Role of Medication Safety Leader

https://www.ashp.org/-/media/assets/policy-guidelines/docs/statements/role-of-medication-safety-leader.ashx

Larson/Saine: Ch 5

World Health Organization (**WHO**), 2009: Human Factors in Patient Safety Review of Topics and Tools: section 8 stress, section 9 fatigue, and section 10 work environment
High Reliability
https://psnet.ahrq.gov/primer/high-reliability
IHI PS 103: Human factors and safety:
Lesson 1: Understanding the science of human factors
Lesson 2: Design principles to reduce human factor
Lesson 3: The risks and rewards of technology
IHI PS 104: Teamwork and Communication:
Lesson 1: Fundamental of teamwork and communication
Lesson 2: Tools and techniques for effective communication
Lesson 3: Safety during transitions across the continuum of care |

		A Primer for Health Care Executives Field trip: Review the ISMP website www.ismp.org What makes this site valuable? Comment on your top 3 features of this site	
4	Wednesday, July 19 High-alert medications Risk reduction strategies Patient Safety in Health Systems and Ambulatory Care	Develop error reduction strategies to target specific situations or risk groups (e.g. high-alert medications) Assess practice environments for factors that can contribute to the occurrence of medication errors Demonstrate application of error reduction strategies (exercise, assignment Homework: Select a BP and post selection by	**Larson/Saine**: Ch 7, 11 ~~**Optional: Cohen**: Ch 14 Pg 317- 328 (replace)~~ https://www.pharmacist.com/Practice/Patient-Care-Services/Medication-Safety-Access/Patient-Safety https://www.ismp.org/assessments/community-ambulatory-pharmacy

		Saturday to avoid duplication. Choices are limited to BP # 2,3,5,7,9,10,11,13,14,15. For your designated BP – find an example of an error addressed by the BP, be prepared to discuss in class. Optional: Review ISMP Medication Safety Self Assessment for High-Alert Medications https://www.ismp.org/assessments/high-alert-medications Field trip: Post and briefly review a medication safety resource website; What makes this site valuable? Comment on your top 3 features of this site.	
5	Wednesday, July 26	Discuss the use of technologies	**Cohen**: ~~Ch 12, 15~~ replace **Larson/Saine**: Ch 2,3, 8

	Medication-use safety technologies	to enhance medication safety efforts Homework: Choose a medication workflow technology (e.g. Prescribing, Dispensing, Administration); post your selected technology to ensure no duplication of topic. Be prepared to discuss key points in class. Field trip: Review the AHRQ Patient Safety Network https://psnet.ahrq.gov/ What makes this site valuable? Comment on your top 3 features of this site. In addition, comment on a technology-specific resource on this site. Submit your choice case and	http://www.leapfroggroup.org/sites/default/files/Files/Castlight%20Leapfrog%20Medication%20Safety%20Report%202017_Final.pdf https://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/sentinel-event/sea_54_hit_4_26_16.pdf https://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/sentinel-event/sea_42.pdf

		URL for final presentation by July 30, for faculty approval	
6	Wednesday, Aug 2 Student Final Presentations

Process Improvement | Final presentations.

Process improvement – making change happen

Identify opportunities for improving medication safety through interactive discussion of cases presented

Homework: Field trip: Post and briefly review a medication safety resource website; What makes this site valuable? Comment on your top 3 features of this site. | **IHI QI 105: Leading Quality Improvement** Lesson 1: The four phases of a quality improvement project Lesson 2: Change psychology and the human side of quality improvement Lesson 3: Working with interdisciplinary team members |

Evaluation Methods

1. **Class participation (25%)**

    a. Participate in online "live" sessions verbally (preferred) or via chat box

b. **Students are expected to contribute to the class discussion.** The instructor will call on individual students during synchronous class meetings. This strategy is intended elevate and advance the conversation, not to challenge the student with a question that is difficult to answer. Students are encouraged to be prepared for the discussion, but they should be comfortable responding to the question with another question or expressing points of ambiguity about the topic.

2. **Five weekly quizzes to assess knowledge of materials (25%)**

   a. Open for 4 days each week, closes at 12 noon day of class

   b. Ten multiple choice questions over fifteen minutes

3. **Five weekly "homework" or field trip assignments (25%)**

   a. Post comments on readings as directed in homework; respond to at least one classmate's original post.

   b. "Field trip" to websites and discussion board

      i. Original post

      ii. Respond to 1-2 classmates' posts

      iii. **Students are expected to post at least one substantive comment each week.** The post can be an original/new post or a comment on another post. Substantive posts are characterized by the following: demonstrates understanding significant ideas relevant to the issue, elaborates with accurate explanations or evidence, provides accurate information, distinguishes fact from opinion, stimulates inquiry through thoughtful posts, asks clarifying questions, synthesizes points of agreement or disagreement, attempts to motivate the group discussion, presents creative approaches to the topic. Posts should include citations when appropriate. All citations should be in AMA format.

4. **Final presentation due on class date, last week of class (25%)**

   a. Final project: Select a published medication error event with significant adverse outcome. Present the following aspects, in a 10 minute PowerPoint presentation (10 minute presentation, 5 minute Q/A)

      i. Overview of the event

      ii. Discuss the initial response to the event and relate it to a culture of safety/Just Culture.

      iii. Provide an analysis of the event, to include contributing factors and root cause/system analysis

      iv. Assess error reduction strategies applied, if any. What would you do differently, as a medication safety leader? Why?

      v. How can use of technology be leveraged in a similar situation?

      vi. Describe your process for implementing changes recommended in iv) and v) above

   Timeline for instructor feedback:

Grades and feedback from the instructor will be posted within 7 calendar days.

Attendance Policy for this Course

Students are expected to attend the synchronous class meetings. Students who miss 30 minutes or more of the synchronous class meeting are considered absent.

Unexcused absences from a class carry a 5-point (1/2 letter grade) penalty taken off the final grade.

Excused absences require a make-up reflection paper on the module topic to be submitted within 2 weeks of the missed class (unless the class is near the end of the semester and a shorter timeline will be required). Absences are considered excused when the student (not a peer) has emailed the instructor before the synchronous class meeting begins and conveys why the student will miss class, such as illness, job conflict, and other emergencies. Two or more excused absences will be addressed by the instructor and may result in an incomplete final grade for the course.

Attendance Policy for Online POP

Students are expected to formally drop or withdraw from the course if they no longer wish to participate. See the program's Academic Calendar for applicable deadlines. In some cases, the University may automatically drop students for inactivity and/or for failure to pay tuition. It is crucial for students to communicate with the DESS (DESS@ahc.ufl.edu) about their status in the course, and about any tuition deferments or other special conditions related to their tuition payment. Any student who remains enrolled in the course after the drop/add deadline is considered tuition-liable, unless exempted by University petition. The official UF Attendance Policy can be found here.

Make-up Policy:

Each assignment is posted with a clear due date. **Assignments that are not submitted by the due date will be given a zero.** The instructor will consider extenuating circumstances on a case-by-case basis – if she is contacted by the student in advance of the due date. No other makeup assignments are offered. Contact the instructor for any concerns.

Grading Policy

The only passing grades for graduate students are A, A-, B+, B, B-, C+, C, and S. Grades of B-, C+ or C count toward a graduate degree if an equal number of credits in courses numbered 5000 or higher have been earned with grades of B+, A- and A, respectively. Grade points are not given for S and U grades; S and U grades are not used to calculate grade point averages. All letter-graded courses eligible to count toward the graduate degree, except 1000- and 2000-level courses, are used to calculate the cumulative grade-point average. Letter

grades of C-, D+, D, D- or E are not considered passing at the graduate level, although the grade points associated with these letter grades are included in grade point average calculations. See the UF graduate academic regulations for more information.

A	>92.500%
A-	89.500–92.499%
B+	86.500–89.499%
B	82.500–86.499%
B-	79.500–82.499%
C+	76.500–79.499%
C	72.500–76.499%
C-	69.500–72.499%
D+	66.500–69.499%
D	62.500–66.499%
D-	59.500–62.499%
E	<59.499%

Course Technology Support

Your instructor is not able to handle technological issues or answer questions related to computer issues.

- **Assistance accessing course Canvas page:** Contact Distance Education Support Services at DESS@ahc.ufl.edu
- **IT Support:** Contact UF Computing Help Desk at 352-392-HELP (4357) or helpdesk@ufl.edu or submit an online request form. If a technical problem causes you to miss an assignment, you must report the problem to the Help Desk and then email your instructor your Help Desk ticket number to the instructor in order to receive an extension.

Students Requiring Academic Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course technologies meet online learning accessibility standards for sight and hearing-impaired learners. Likewise, course materials are developed in accordance with accessibility standards. Course documents and webpages are formatted for screen-reader accessibility with the use of headings, styles, or alternative text tagging for images. Accessibility design tools in Microsoft Office products and in Canvas are used to evaluate and update accessibility issues detected in the instructional materials. Synchronous class sessions in Zoom are recorded. These recordings are posted to the course site to accommodate students unable to attend.

- Canvas Accessibility
- Zoom Accessibility

Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Click here for guidance on how to give feedback in a professional and respectful manner. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/.

University Honesty Policy and Academic Integrity

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Regarding academic integrity, students in the program are strongly encouraged to be mindful of what constitutes plagiarism. Written assignments that contain the research or other original published work of someone else must be properly quoted, cited, paraphrased, or referenced appropriately. A software (TurnItIn) that is integrated with Canvas Assignments may be utilized to help students determine if a written submission meets the criteria for a properly referenced research paper. Please ask for help, utilize resource materials and

take advantage of opportunities like creating a draft of your paper to test, ensuring you have addressed any errors prior to the final submission.

Please watch these short videos about this topic:
- Understanding and Avoiding Plagiarism: Types of Plagiarism
- Avoiding Plagiarism

Software Use and Course Technology

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Educational technology in the program is primarily the Canvas Learning Management System (LMS) and Zoom web conferencing software. These tools firmly support learning objectives and course goals. Writing with communication tools, reading articles from digital collections, and viewing video presentations in high-quality, accessible formats are essential to facilitate meaningful learning experiences. These experiences expand knowledge and influence professional work habits and skills such as information-gathering techniques and evidence-based practice. Synchronous class sessions in Zoom provide learners with opportunities to gain confidence and practice how they interact and collaborate in online meetings.
- Canvas Student Guide
- Zoom Resources

A minimum number of other technical skills are required for success in the online courses. These include accessing course webpages to read text and listen to recorded videos, using word processing tools (MS Word, PowerPoint), downloading/uploading content, submitting online assignments and using a variety of communication tools (Canvas Inbox, Discussions, Zoom Conferences).

Course Communication

Canvas (Inbox tool) will be used as the primary communication tool between the instructor and students. Check daily for new announcements or notifications about course updates. UF email will also be used occasionally for mass communication to the class, so please check your email at least once a day as well. All emails sent out to the entire class will also be posted as an Announcement on Canvas. The instructor will generally respond to student messages within 48 hours.

General questions about course content (e.g., assignments or lectures) or policies should be posted to the course discussion board. We expect students to help each other track down answers as best as possible. Read through all the other posts in the discussion board first before posting to make sure your question has not

been addressed/answered already. Please include a clear subject title for your topics to make it clear what your post pertains to. The instructor will generally respond to questions posted on the course discussion board within 48 hours.

Emotions can easily be misinterpreted on a discussion board/emails, so make sure your message is clear before sending it since there are no physical gestures or voice inflections that accompany posts/emails. Any posts/emails deemed inappropriate by the faculty will be dealt with on a case-by-case basis with either the faculty directly or they will be sent on to the Associate Dean for Professional Affairs.

For personal issues/questions, please email your instructor. Be sure to include in your subject line the course listing and then a quick subject (e.g., PHAXXXX – Your Name -). This will allow instructors to quickly identify emails related to the course amongst the many emails that are received each day. Emails not correctly addressed may get lost in the shuffle and unintentionally deleted or ignored so be sure to follow the guidelines exactly.

Student Privacy

There are federal laws protecting your privacy in terms of grades earned in courses and on individual assignments. For more information, please see the Notification to Students of FERPA Rights.

Recordings of weekly class sessions in Zoom are created for the purpose of course teaching and learning, as well as for use as a resource for students who miss a class session.

The use of video (or web camera) feature in Zoom is not a requirement, but rather is voluntary for meeting participants. For both the audio and video features in Zoom, you will have the option to Start or Stop these functions.

Students who participate with their camera engaged or who utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

- Zoom Software Privacy Statement
- Canvas (by Instructure) Privacy Policies

Security

Online activity in Canvas requires an active UF GatorLink account to log in, as well as enrollment in courses. The Zoom Conference meetings for weekly classes are accessed within Canvas. These meetings have a pass

code applied as an additional security setting. Students in the class do not need to enter the passcode, however anyone not enrolled in the course cannot join the meeting without it.

Library Resources

For remote access to UF library resources such as e-journals or other digital collections, use the UF VPN or proxy server to connect.

Additional University Resources

- **U Matter, We Care:** If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.
- **Counseling and Wellness Center**
- **Sexual Assault Recovery Services (SARS):** Student Health Care Center, 392-1161.
- **University Police Department** at 392-1111 (or 9-1-1 for emergencies), or police.ufl.edu
- **E-learning technical support**: 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
- **Teaching Center**: Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
- **Writing Studio**: 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
- **Student Complaints**