

2012

Innovative Medication Adherence Educators Challenge

Summary of Submissions

AACP

American Association of
Colleges of Pharmacy

Discover • Learn • Care • Improve Health

NCPA
NATIONAL COMMUNITY
PHARMACISTS ASSOCIATION



Innovative Medication Adherence Educators Challenge

Background

Since its inception in November 2004, the Joint Commission of Pharmacist Practitioners (JCPP) Future Vision for Pharmacy Practice charges pharmacists as “the health care professionals responsible for providing patient care that ensures optimal medication therapy outcomes” by the year 2015. Pharmacists must be able to assist patients in achieving and maintaining adherence to their medication in order to contribute to achieving this vision. In order to ensure this vision is carried forward, student pharmacists need to be prepared to enter into practice with the knowledge, skills, and attitudes to respond to and improve patient medication adherence.

The National Community Pharmacists Association (NCPA) is working to show that by 2015, actions taken by community pharmacists will result in demonstrable improvement in patient medication adherence rates. To accomplish this goal, NCPA launched the Pharmacists Advancing Medication Adherence (PAMA) initiative. An element of PAMA is to collaborate with pharmacy academia by working with the American Association of Colleges of Pharmacy (AACP) to produce graduates that embrace pharmacists’ role as medication adherence counselors.

AACP institutions and members are committed to providing student pharmacists with relevant education, practice, and research information related to medication adherence. AACP has demonstrated its commitment to medication adherence in multiple ways. This includes being a committed partner of the National Consumer League’s *Script Your Future* national campaign, designed to increase awareness of medication adherence as well as being one of the three sponsors of the Script Your Future Advocacy Challenge, which engaged student pharmacists in the Script Your Future campaign and raised public awareness about adherence as a critical health issue.

The Innovative Medication Adherence Educators Challenge

AACP and NCPA issued a challenge to the schools and colleges of pharmacy to submit innovative tools designed to teach student pharmacists about medication adherence. The tools could be those that are currently used in pharmacy academia, those that are in development, and those that are conceptual in nature.

Six representatives from AACP and NCPA served as reviewers for the medication adherence challenge submissions. Assessment criteria for the submissions include:

- Description of the education tool
- Use of the education tool in an inter-professional education environment
- Assessment method(s) used for the education tool
- Outcomes from the education tool
- Scalability of the education tool
- Impact of the education tool
- Innovation of the education tool

Submission Information

There were 37 submissions received from 26 Schools and Colleges of Pharmacy. The submissions ranged from didactic classes focused on adherence strategies to active learning exercises where student pharmacists assumed the role of patient to experiential education experiences where the student pharmacist experienced the role of a patient educator.

Innovative Medication Adherence Educators Challenge Winners

Three submissions to the Innovative Medication Adherence Educators Challenge were selected based upon the aforementioned challenge assessment criteria.



Summary of Submissions

The submission descriptions have been edited to a maximum of 200 words and divided into one of six categories:

- Assessing medication adherence
- Improving adherence through the use of aids
- Empowering patients to improve adherence
- Resolving barriers to adherence
- Developing adherence-related curriculum
- Experiential adherence teaching strategies (IPPE/APPE)

For complete entries, including appendices and related resources, please contact the submitter(s) listed.

Assessing Medication Adherence

Medication Adherence Pillbox Simulation Project

Butler University
College of Pharmacy and Health Sciences
Jessica Wilhoite, jwilhoit@butler.edu

Description: Participants are provided one 7-day multi-dose pillbox, a one-month supply of 15 different “medications” (candies) in labeled prescription bottles, and a medication list. To complete the project, participants are required to initially fill their pillbox and asked to take their “medications” as directed and swallow whole. Additionally, participants are provided “real-life scenarios” and asked to adjust medications based on changing dosing regimens. The accuracy of each participant’s pillbox is assessed weekly and participants are given weekly surveys to self-assess missed doses, late doses, and any dosing changes. Participants are also asked to complete a pre- and post-project survey to identify perceptions of adherence before and after simulation. PDF documents containing pre- and post-project surveys, “medication” (candy) list, and medication-changing scenarios are attached to this document.

This tool was originally piloted in an inter-professional manner, including medical residents and pharmacy students and could easily be replicated in multiple other professional educational settings, including nursing or medical school.

Patient Interviewing

Creighton University
School of Pharmacy and Health Professions
Shana Castillo, shanacastillo@creighton.edu

Description: Our pharmacy students are involved in a MTM activity that focuses on chronic disease management and methods to improve medication adherence. MTM cases were developed for student use in patient interviews. All cases were standardized to contain the same types of information: number of medications, patient allergies, drug-disease interactions, drug-drug interactions, therapeutic duplications, inappropriate dosing, adherence to therapy issues, and medication cost considerations that led to non-compliance.

Groups of 8-10 students interviewed a faculty member “patient” with regard to their medication use and lifestyle. Each student in the group was required to ask a minimum of 3 questions about the patient’s medication history, medication taking behavior, and lifestyle and social history. Each patient case contained specific embedded information that would only be revealed if the student asked the appropriate questions.

After the interview, each student developed a personal medication record for the patient, and developed a medication action plan. Although students were allowed to work in groups for the patient interview, all student recommendations were completed and evaluated individually.



Simulated Medication Adherence and Physician Visit Experiences*

Manchester College School of Pharmacy
Trent Towne, tgtowne@manchester.edu

Description: The vision for this tool is for students to understand that adherence is more than the act of taking a medication, but incorporates a change in behavior that may involve multiple processes such as the act of taking a pill, visiting a health care professional for a medical appointment, or even visiting a health care professional to receive a medication on-site. Ultimately, focus on both areas of adherence will allow for a more realistic patient experience that can evolve to include inter-professional elements.

Students will be randomly assigned to begin one of two simulated medication adherence experiences: (1) Directly-observed, in-office therapy or (2) Complex, multi-daily dose therapy. Students will complete the first experience over a three-week period, after which time they will be crossed-over into the opposite experience of the simulated medication adherence experience for an additional three weeks. During the same six-week period, all students will be randomized to four simulated physician office visit experiences. These physician office visits will be scheduled prior to beginning the experience. They are meant to challenge the students to further understand their future patients and the difficulties the patients experience remembering to take medications and office visits, while juggling life's other difficulties.

Structured Interview to Screen for Causes of Non-adherence

Northeast Ohio Medical University
College of Pharmacy
Stacey Schneider, sschneider@neomed.edu

Description: Our medication adherence education tool is a structured interview to screen for causes of non-adherence. Students are taught how to provide resources to improve adherence for each cause.

The tool consists of the following questions:

- How often have you missed a dose in the last week?
- What side effects have you had from your medication?
- How do you get your prescriptions from the pharmacy? (for elderly or disabled patients)
- What system do you use to manage your medications?
- Medications can be very expensive, how do you manage to pay for medications?
- How are your medications helping you?

Students are taught that a question for each cause of non-adherence must be asked, but the specific question may be altered to one that the student is comfortable with, as long as an open-ended format is used. For each cause of non-adherence, a structured method to address the cause is taught.

Pill Count Exercise*

Northeastern University
Bouve College of Health Sciences School of Pharmacy
Nathaniel Rickles, n.rickles@neu.edu

Description: To begin this exercise, we will hand out one pharmacy vial of Tic Tacs with instructions for use to a random population of students. To the remainder group of students, we will hand out 2-3 pharmacy vials of different colored Tic Tacs with instructions for use. On a random and unannounced day, students will be asked to give their vial(s) to someone sitting next to them for a "pill count". Students record the information and are asked to send an e-mail to the TA for a refill and a new 30-day supply of Tic Tacs.

After six weeks of use, a random group of students will be asked to switch to the use of one or two different reminder systems and the other students will continue to use the traditional pharmacy vial. Those students asked to switch to a reminder system will be asked to receive a new 30-day supply of Tic Tacs when picking up the new vial. Students will be randomly asked on a Thursday after the change to do a "pill" count of someone sitting next to them. Course faculty will compile both pill counts and present the results of findings.



Counseling with Standardized Patients

Northeastern University
Bouve College of Health Sciences School of Pharmacy
Nathaniel Rickles, n.rickles@neu.edu

Description: During the first lab of the semester, students are given a scenario for which a patient is waiting to pick up a new prescription for hydrochlorothiazide and a refill for lisinopril. The student is handed a clipboard that has the new prescription written and access to the refill pattern for lisinopril.

Students are given 10 minutes to review the prescription and profile and then escorted into a patient counseling room to meet the standardized patient. The counseling session is videotaped and timed for a maximum of nine minutes. The students are expected to use counseling techniques to elicit issues and provide solutions. Some of the student's solutions suggest collaboration with the physician and other professionals. The standardized patient is randomly assigned one of 3-5 scenarios. The scenarios differ in the reasons for why the patient is non-adherence. We debrief about the session and also discuss how proper adherence assessment may avoid poly-pharmacy and inappropriate prescribing.

Later in the semester, students are given a similar exercise with an antidepressant prescription (fluoxetine) for which the profile indicates non-adherence. The format for counseling is the same as above though during this lab, students are expected to practice basic motivational interviewing skills learned in the classroom. Students self-reflect on their counseling session by viewing the tape and identifying areas for improvement. A third and final lab of the semester involves non-adherence to diabetes medication.

Medication Adherence Assessment Form*

Palm Beach Atlantic University
Lloyd L. Gregory School of Pharmacy
Ashley Johnson

Description: The purpose of the medication adherence assessment form is to help students formulate a systematic approach to not only

evaluating pertinent data in a patient history as well as medication use, but also to assess and make necessary interventions regarding adherence issues. This form will be used in conjunction with established didactic courses that already discuss medication adherence or are planning to integrate teaching methodologies to address issues associated with non-adherence. The form will be specifically used in courses where students are interacting with patient cases or profiles to complement didactic learning.

There will be two versions of the form:

- Version 1 will be utilized during the P1 year (0-4 PharmD Program) and is simplified to allow students to develop skills in obtaining a medication list and identify if an adherence issue exists.
- Version 2 builds upon version one and will be utilized during the p2 and p3 years. This version is specifically designed to assist students in making interventions to improve medication adherence.

Lastly, prior to the start of advanced experiential rotations (APPEs), P3 students will have the opportunity to modify the form based upon their experience with using the form during their didactic training and then the form will be integrated into the PxDx form for tracking student interventions as required by ACPE.

Simulated Medication Scenario Activity*

Rutgers, The State University of New Jersey
Ernest Mario School of Pharmacy
Lucio Voluni, volinol@pharmacy.rutgers.edu

Description: As part of their Pharmacy Communications II course, each P3 student will be given a prescription vial containing 10 jelly beans which represent a new antibiotic medication called DDV (dasdegvolinase HCl). Students will be randomly assigned into one of two groups. The first group will be designated the patient medication monograph only group (PMMO) and will receive only the labeled medication and a sheet reflecting patient-focused medication information typically found in an accompanying handout provided in pharmacies. The

second group will be designated the patient medication monograph with counseling group (PMMC) and will receive the labeled medication, the patient-focused monograph, and one-on-one counseling regarding a food-drug interaction by a trained post-graduate fellow.

Students will be provided a tracking form to document the dose times and their food/beverage consumption with associated times over five days. Upon completion of their activity, students will evaluate their tracking log and complete a Scantron evaluating their adherence through the number of missed doses and their dosing with respect to foods interacting with DDV. Instructors will provide the class a list of foods that qualify as interacting foods and specific dosing parameters with respect to those foods to define the food-drug interaction.

Challenge Winner:

Interdisciplinary Approach to Teaching Medication Adherence

The Ohio State University College of Pharmacy
Katherine Kelley, Kelley.168@osu.edu

Description: An interdisciplinary activity to promote experiential learning about medication adherence among pharmacy and medicine students was undertaken three years ago at The Ohio State University's Colleges of Pharmacy and Medicine. Each winter, pharmacy students enrolled in the first, second and third years of the PharmD program and second year medical students, in all more than 550 students, participate in the activity.

The core activity involves pharmacy and medicine students adhering to a complex placebo "medication" regimen. To make this possible, first-year student pharmacists work together to fill more than 1,600 "prescriptions." Students then fill paper bags with a set of prescriptions and a patient education handout. The "medications" are dispensed by third-year student pharmacists to second-year pharmacy and medicine students; the medical students are counseled by student pharmacists on their new prescriptions. For a five-day period, second-year pharmacy and medicine students attempt to adhere

to the medication regimen and record their adherence and observations on a medication log and meet in small interdisciplinary groups to discuss ways that pharmacists and physicians can work with patients and work together to improve medication adherence. In 2013, the College of Nursing will join this collaboration.

The DRAW™ Tool

The University of Iowa College of Pharmacy
Jeffrey Reist, jeffrey-reist@uiowa.edu

Description: The DRAW™ tool combines a series of evidence-based adherence questions, delivered in an interview format, to identify potential adherence problems. It focuses on attitudinal, cognitive, and functional barriers to adherence. Once problems are identified, the reverse side of the tool provides a corresponding code letter for managing the issue with an evidence-based strategy. Many of these interventions are best addressed using motivational interviewing techniques.

The DRAW™ tool is used as a component of an adherence unit for P1 students. Students are introduced the DRAW™ tool in lecture and then use the tool in a subsequent laboratory exercise. Prior to this unit, students are introduced to motivational interviewing and taking medication histories. During the exercise, trained faculty and postgraduates portray non-adherence patients. Students use the tool to interview the patient and work to reach an acceptable solution using the techniques corresponding to the type of non-adherence identified in the interaction. After the simulated interaction, the faculty/postgraduate assumes a facilitator role and provides feedback and engages in a discussion about adherence communication based on the encounter. Students also have the opportunity to use the DRAW™ tool on IPPE and APPEs as several preceptors have incorporated it into their rotations.

Pharmacy Quality Report Cards

The University of Mississippi School of Pharmacy
Donna West-Strum, dswest@olemiss.edu



Description: This tool involves a mock community pharmacy report card with medication adherence measures provided. The student is asked to pretend that he/she is a pharmacy manager for ABC pharmacy and is provided a pharmacy quality report card from CMS with medication adherence measures. The student is to interpret the results of the report card, which indicates that his/her pharmacy has many patients who have discontinued their medication or are non-adherent. The student is then asked to engage in the quality improvement process – Plan, Do, Act, Check. Students, as if they are the pharmacy manager, must consider why the medication adherence performance measures may be low and then develop interventions to improve these performance scores in their pharmacy.

Discussion about the various intervention strategies, the importance of tailored interventions in practice, and the various social behavioral issues associated with adherence are provided. Students must also develop a plan to evaluate or check whether the intervention is working. Students may work on the case individually or in groups and share the ideas in a classroom setting.

Patient Care Project

University of Cincinnati
James L. Winkle College of Pharmacy
Karissa Kim, karissa.kim@uc.edu

Description: In the P1 year, students have a one-hour lecture titled *Counseling to Enhance Adherence* in the communications course.

The objectives of this lecture are to:

- Define compliance, adherence, persistence and concordance
- List the potential outcomes of medication non-adherence
- Describe the potential causes of non-adherence
- Describe how to identify and assess for potential non-adherence
- Describe strategies to prevent and resolve medication non-adherence

During this lecture, students are introduced to the Medication Non-adherence Risk Assessment tool, which is available from the American Society on Aging and American Society of Consultant Pharmacists Foundation. The tool assesses knowledge about the medication regimen, label reading, perceived efficacy and safety, demonstrations of proper use of certain formulations like inhalers, screening tools such as the Medication Non-adherence Screening Tool, an assessment of health literacy using REALM-R, and an assessment of memory impairment with the Mini-mental status exam.

The student is required to complete the Medication Non-adherence Risk Assessment tool with his/her chosen patient. The student schedules an interview with his/her patient and conducts the assessment. Based on this comprehensive assessment, the student documents his/her findings and suggests strategies to overcome any barriers to adherence. After assessing the patient's medication adherence, the student also creates a personalized pill card.

Medication Access and Adherence Tool (MAAT)*

University of Pittsburgh School of Pharmacy
Kim Coley, coley@pitt.edu

Description: The tool is based on the concept of “self-efficacy.” In terms of medication adherence, patients with high self-efficacy have the motivation, ability, and resources necessary to access their medications and take them as prescribed on a consistent basis. Conversely, patients with low self-efficacy may not have the motivation or mental/physical capability to take their medications as prescribed.

The tool was first utilized as part of an inpatient-to-outpatient transition of care quality improvement initiative. Pharmacists and pharmacy residents had patients complete a MAAT, and the results provided them with an opportunity to identify inpatients at risk for medication access/adherence problems after hospital discharge. These patients then received a more comprehensive intervention by the inpatient pharmacist to resolve identified problems.

A second pilot involved using the MAAT in the emergency department (ED). In this ED pilot, patients

were screened by the nurses on the admission team using the MAAT and those with a score of ≥ 2 received a comprehensive evaluation from the pharmacy team. The pharmacy team worked with all members of the health care team, both inpatient and outpatient, to resolve any medication access and adherence problems. Our next goal is to evaluate the tool in the community pharmacy setting.

“Jelly Bean Assignment”

Wilkes University; Northeast Ohio Medical University; Notre Dame of Maryland University
Eric Wright, Eric.wright@wilkes.edu
Timothy Ulbrich, tulbrich@neomed.edu
Jane Frumin, jfrumin@ndm.edu

Description: Our three schools of pharmacy have developed a variation of a medication adherence educational technique that places the student in the role of the patient. We have affectionately termed our adherence tool, the “jelly bean assignment,” although any number of pill-shaped forms or even placebos could be used in the assignment.

In general, students are given a medication regimen consisting of one or more medications that they are assigned to take for a given period of time. Students are expected to continue the regimen through the full course of therapy and comply with directions for use. In one college, medication adjustments could be made by an e-mail to the student (e.g. patient had a high INR, and therefore should hold the medication for one day, then take half a dose every day afterward). One college assigns students to keep a running diary of their daily medication use with reflections.

All schools debrief with the students at a later time the issues related to medication adherence, providing personal practical examples of their experiences during the activity. Objective endpoints of student adherence rates have been published by one college.

Improving Medication Adherence Through the Use of Aids

Geriatric Population*

Creighton University
School of Pharmacy and Health Professions
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Description: In these particular labs, the students are given a scenario in which their senior patient has purchased a Medi-Set pill organizer and has come to the pharmacy to ask for help setting up his medications.

The patient is currently taking 14 prescription and over-the-counter medications and the student has to place them in the Medi-Set according to directions. The Medi-Set has 28 compartments (Sunday through Saturday designations, and morning, evening, and bedtime designations). The case can be designed from simple to complex, so that first-year to third-year pharmacy students will have the skills to complete. With the complex cases, more drug-drug interactions are included so that the student has to carefully think about the placement of the dose.

The activity may be done as a “hands-on” activity with a pill box organizer and medications; with a pencil and paper with the patient medication list and a table as the Medi-Set; or, we have created an electronic version where the students check boxes and fill the Medi-Set. Additionally, we are incorporating essay questions to make them examine the issue farther.

Evaluation of Adherence Aids

Northeastern University
Bouve College of Health Sciences School of Pharmacy
Nathaniel Rickles, n.rickles@neu.edu

Description: This communication skills lab allows students to evaluate different adherence aids and their respective strengths and weaknesses. Students are asked to break up into groups of 4-5 students and take one box full of adherence aids such as daily, weekly, monthly pill boxes with different features; pill containers for narcotics, syringe holders for prefilled



syringes; and other solutions. Included in the box of adherence aids is a 20-page booklet of other adherence aids that are commercially available. Faculty encourages students to also come to the front of the room for displays of adherence aids not available in their boxes. Students are given a worksheet to be completed by the group.

The worksheet asks students to identify sources of non-adherence for two different patient cases. Then, students are asked to review the adherence aids available to them (either in the box, booklet, in front of the room, etc) and select/justify the most appropriate for two different patient cases. Students are also asked to identify four adherence systems they would ask their preceptor to stock, why they think they would want them to be stocked at the pharmacy, and the populations most suited for the systems. Faculty ask students to return after their one-hour group exercise and lead a brief discussion about their responses.

PILL Card

Southern Illinois University Edwardsville
School of Pharmacy
Lakesha Butler, lwiley@siue.edu

Description: The PILL Card was developed by the Pharmacy Intervention for Limited Literacy (PILL) Study Research Team for the Agency for Healthcare Research and Quality (AHRQ). It is used during a required course entitled, "Health Literacy and Promotion," that addresses topics such as health disparities, cultural competency, and health literacy while incorporating team-based learning.

Students are assigned to groups comprised of 4-5 members and complete various assignments and conduct discussions as a group throughout the entire course. During the health literacy cluster, the instructor provides the students with an electronic file of how to create a pill card and also discusses the steps provided in the document during class. The instructor explains the benefits of the resources for patients who have poor medication adherence or patients who they suspect may be illiterate or have low health literacy.

After discussing how to create a pill card, the instructor displays a Word document containing two different medications (including dose, route, directions, etc.) assigned to each group. Students are given the last 15 minutes of each class to create a pill card in their pre-assigned groups for their two medications assigned, using clipart, and e-mail the completed card to the instructor.

Insulin Pumps and Medication Adherence

The University of Mississippi School of Pharmacy
Matthew Strum, mwstrum@olemiss.edu

Description: As part of the diabetes portion of skills lab, students are instructed on appropriate use and assigned an insulin pump to wear for 24 hours and asked to monitor blood glucose, adjust doses, and keep a nutrition diary, as a diabetes patient could be counseled to do. At approximate meal times, blood glucose levels are texted/e-mailed to the student to input the data into the insulin pump along with the appropriate carbohydrate count from their meal in order to ensure an appropriate dose of insulin. Students are also instructed to keep a nutrition log for verification of carbohydrate counting. Students wear the insulin pump but are not required to actually insert the fusion set.

The goal of this activity is to demonstrate the potential difficulties with being adherent to an insulin regimen and to foster empathy. Students were exposed to the everyday barriers to following recommendations about proper diet, checking blood glucose, and adjusting insulin dosing.

Portions of this lab activity have been utilized with the School of Nursing students as well. Medical, nursing, nutrition, and other allied health students could benefit from wearing an insulin pump, having to adjust insulin doses, following a proper diet, and being adherent to the regimen and dosing schedule.

Empowering Patients to Improve Adherence

SMART Goal Model

Southern Illinois University Edwardsville
School of Pharmacy
Lakesha Butler, lwiley@siue.edu

Description: An effective goal-setting model that has been used for a number of years by corporations and business is the SMART (Specific, Measurable, Action Plan, Realistic, Time Frames) Goal Model. There is no literature on the use of this model in healthcare; however, it can be utilized in healthcare to aid in increasing medication adherence. It can be used not only by pharmacists but other healthcare professionals and therefore may warrant use as a tool for inter-professional education, specifically with nursing and medical students during clinical rotations.

The proposed educational tool is currently a concept in development to be incorporated in an Ambulatory Care Advanced Pharmacy Practice Experiential (APPE) rotation at a free health clinic serving uninsured and underserved patients. Patients in this population have a high incidence of poor medication adherence due to multiple factors. The ambulatory care setting allows practitioners to take time and set SMART goals specific goals for themselves as practice. Examples of how SMART goals can be utilized for medication adherence will also be provided to the students. The original tool template is readily available online and can be utilized with appropriate referencing. Each patient and provider can collaborate and create different medication adherence goals using the template.

Adherence Toolkit*

University of Arkansas for Medical Sciences
College of Pharmacy
Schwanda Flowers
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Description: This adherence toolkit is currently in development and will be incorporated into the curriculum to supplement didactic instruction for

pharmacy students to provide adherence coaching. The instruction will include active learning in the laboratory setting and the Center for Clinical Skills Education in the second and third year. The toolkit will include medication adherence strategies, cultural competency training, motivational interviewing, patient self-management in chronic diseases and development of skills in coaching. The toolkit will be instrumental in training students to provide coaching in an interdisciplinary center currently in development. The 12th Street Health and Wellness Center will be directed by the College of Pharmacy and will provide a team-based approach to patient care in an underserved community.

Adherence Pocket Toolkit*

University of Wisconsin School of Pharmacy
Beth Martin, bamartin@pharmacy.wisc.edu

Description: This project involved the collaboration of several partners, including our state pharmacy association, a UW-Madison School of Pharmacy PGY2 resident, graphic design team, several retail pharmacists around the state, and a faculty member at the UW-Madison School of Pharmacy.

The adherence toolkit was designed, revised, printed and piloted to facilitate pharmacist communication with patients to assess and address adherence barriers. A supplemental, patient-oriented "My Medication Plan" tear-off form was also designed as a reminder and motivational tool for patients to take home. The form lists a patient-centered action plan designed, in concert with their pharmacist, to address the patient's specific barriers to adherence. Based upon feedback and expert input, updated version of these tools were created, which included an expanded section on how to communicate with patients about adherence and a brief, three-question patient survey that can help pharmacists determine a patient's barriers.

The kit itself contains three primary areas: tips for patient visit, general communication strategies using motivation interviewing techniques, and five domains of adherence barriers (knowledge, recall, motivation, financial, and system) organized with patient assessment questions and potential solutions for each barrier.



Patient Case Scenarios Involving Medication Adherence

Western New England University College of Pharmacy
Izabela Collier, icollier@wne.edu

Description: The healthcare communications course incorporates two components, a didactic portion and a practicum section. The didactic lecture includes all 75 learners. The practicum sections have a total of 18-20 learners.

Pairs are formed within a group of 8-10 learners and they role-play that of a pharmacist and/or patient. The learners are given a different patient case scenario at each session. There are a total of three one-on-one practicums. Each practicum is designed to build on the previous one and the level of difficulty increases over the course of the semester. The patient cases include a variety of medication and dosage forms.

The learner who plays the role of the pharmacist is responsible for obtaining history from the patient, counseling on the pertinent medication, and addressing medication adherence. Pharmacy learners are provided with several medication adherence tools such as: pill boxes, medication cards, and medication organizers. Learners select the most appropriate tool based on patient's needs.

Resolving Barriers to Adherence

Patient Cases*

Creighton University
School of Pharmacy and Health Professions
Shana Castillo, shanacastillo@creighton.edu

Description: In a Pharmacy Skills Lab IV session, students will be divided into groups of 6 or 7. Each group will be given 1 of 9 written patient cases. Each patient case will be a scenario of a difficult to manage patient for various reasons. Examples of patient obstacles in the cases will include language barriers, religious beliefs, difficult medication regimens, lack of understanding, etc.

Each group will be given 40 minutes to prepare a patient specific therapeutic plan and to provide details as to how to manage the patient and increase the patient's medication adherence. Each group will then have 10 minutes to present its plan to the entire class. The presentation will be given in a PowerPoint format. To assist in developing the plan, each group will be given a patient adherence "toolkit." The toolkit will provide the students with factors they should take into consideration when developing the plan. It will include components of adherence, patient barriers to adherence and solutions, and chronic disease specific adherence barriers/factors.

Enhancing Medication Adherence through Script Writing and Video Counseling Technique

Presbyterian College School of Pharmacy
Tiffany Threatt, tbthreatt@presby.edu

Description: This educational tool, in the form of a multistep active learning exercise, was used in the second Pharmacy Integrated Laboratory Sequences (PILS) course of the P1 year. The first segment focused on creating awareness of the essential communication skills necessary for providing patient-centered care. The second course segment introduced the critical components of patient interviewing.

The educational tool consisted of two parts and was provided in the final segment of the course. Students were asked to review an assigned patient case and identify potential reasons for a history of non-adherence. The student was then expected to create an original script dialogue between a pharmacist and a patient based on the assigned profile. The techniques of motivational interviewing and other essential communication skills demonstrated in the course were incorporated into the script. The second portion of the assignment consisted of counseling their assigned patient in a videotaped counseling scenario. A standardized patient was used for the counseling session. However, students were instructed that the counseling session may not follow the script created by the student. This required the student to demonstrate a mastery of the skills taught in this course.

Chronic Medication Refill Synchronization Skills Laboratory*

The University of Mississippi School of Pharmacy
Erin Holmes, erholmes@olemiss.edu

Description: This pharmacy practice skills lab is offered to second-year professional students and provides continuous development of pharmacy practice skills and behaviors, emphasizing hands-on active learning for integration and application of curricular content and incremental development of professional and general abilities. One of the sessions of this course will be devoted to teaching students how to synchronize chronic medication refills and subsequently improving medication adherence for the patient. RxSync ServiceSM, a refill synchronization program developed by Dr. Erin Holmes and Dr. Ben Banahan will be used as the basis of this session.

The three core components of RxSync ServiceSM include:

- The synchronization and scheduling of refills;
- Monthly patient monitoring for adherence; and
- Providing pharmacist consultations to patients or professional recommendations to prescribers when needed.

Prior to the lab session, students will be tasked with visiting an assisted living facility or nursing home, participating in a brown bag, or interviewing an older person about their medication taking behaviors. Students then will attend a one-hour pre-lab lecture to review medication adherence interventions and introduce the RxSync ServiceSM program. The three-hour lab session will involve students working through patient cases in which the student will tailor an adherence intervention to improve adherence.

Challenge Winner:

Patient Physical Limitations Affecting Medication Adherence

University of Maryland School of Pharmacy
Amy Ives, aives@rx.umaryland.edu

Description: Abilities Lab 4 is a course that focuses on various aspects of community pharmacy, including education, counseling, and dispensing activities. During a 50-minute lab activity, students are provided with cases that address different barriers to adherence including: complex medication regimen with arthritis, limited vision (cataracts or macular degeneration), and dyslexia.

- Complex medication regimen with arthritis: Students have to wear work gloves while filling their pill box.
- Limited vision (cataracts or macular degeneration): Students wear lab goggles that have been “obstructed” with stickers that limit their field of vision and make it difficult for them to see.
- Dyslexia: The prescription labels were designed with various font sizes, letters that were put backwards, and some letters that were put out of order to simulate a patient with dyslexia who has to read a prescription label.

The second-year students are broken into small groups, assigned a particular case, and experience the “limitations” that could prevent a patient from being adherent to their medication regimen. The students review the case, fill a pill box, and simulate the impairment. At the end of the activity, teaching assistants engage the students in a discussion about their experience and share their personal experiences while on APPE rotations encountering patients with adherence barriers.



Developing Adherence-Related Curriculum

Didactic Proposal*

Roseman University of Health Sciences
College of Pharmacy
Renee Holder, rholder@roseman.edu

Description: Currently, proposals for two open days in the second professional year (P2) are being considered by the Roseman University of Health Sciences' Curriculum Committee as part of the required Integrated Patient Care (IPC) course.

- Mock Medication Adherence Exercise**
Students will participate in a mock medication adherence exercise in which they are told they have a condition that requires medication adherence to provide maximal efficacy (for example, epilepsy). Students will be randomly assigned to one of three groups: no counseling provided, counseling provided with reminder card delivered to student during second week of therapy, and counseling provided with discussion on techniques to optimize adherence and follow-up counseling session during second week of therapy. All students will be asked to bring their medication container to class on week four to perform a pill count and record medication adherence in a log.
- Medication Adherence Instruction**
After completing the mock medication adherence exercise, students will participate in a variety of activities to improve knowledge and skills in medication adherence optimization. Students will form groups of three (one from each of the assigned groups during the mock medication adherence exercise) and discuss barriers to adherence, and techniques that were and were not successful. Students will then receive brief instructional periods on medication adherence rates, attitudes, barriers, educational techniques, and methods to assess and improve adherence.

Challenge Winner:

Basic Principles of Medication Adherence Course

University of Arizona College of Pharmacy
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Description: *PhPr 818 Basic Principles of Medication Adherence* is a one-unit required course in the PharmD curriculum taught in the first semester of the second professional year. The course is 20% lecture and 80% practice and forces students to use skills learned in the first year and apply them to patient-oriented adherence issues.

Lecture topics include: theoretical foundations of medication adherence, assessment of potential adherence problems, behavioral techniques to enhance medication adherence, adherence issues in special populations, use of medication adherence aids, and conducting patient visits.

The bulk of class time is spent practicing skills and principles learned to conduct patient visits. Triads are used to role play conducting initial and follow-up visits, where students are given case-based, scripted scenarios, and one student plays the patient, another student the pharmacist, and the third student the evaluator.

Before adherence practice, each disease is covered with a mini-therapeutics lecture of 10-15 minutes. A limited number of drugs are included in the scenarios due to students' limited training at this point. For each disease, students are given a disease and drug-specific checklist that outlines questions, laboratory tests, and physical exams to use to assess disease control, adherence to treatment regimens, and complications.

After completing the role play, the "pharmacist" makes an assessment and, in collaboration with the patient, develops a plan. Next, the student evaluator leads a discussion regarding the case. Many times this is followed by a class-wide discussion.

Course: Concepts on Adherence Risk Assessment and Interventions in Community Pharmacy Practice*

University of North Carolina at Chapel Hill
Eshelman School of Pharmacy
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Description: This course is designed to train pharmacy students and practicing community pharmacists in pertinent skills and strategies for conducting medication therapy adherence support services in community pharmacies. It has two core components that target two related outcomes.

The first component will help students better appreciate the importance of providing medication therapy adherence interventions and understand the need for pharmacists to be trained in competencies. The major strategy of this component is to demonstrate that achieving therapeutic outcomes (pharmaceutical care) cannot be truly practiced in community pharmacy settings if elements that promote adherence are not strategically integrated into practice protocols. This component will seek to bring awareness and raise sensitivity to therapeutic consequences and other implications of non-adherence.

The second component provides training in skills and strategies for conducting adherence support services (adherence risk assessments and interventions) in community pharmacies. Foundational concepts are constructed from adherence research with major reinforcements by practical field experiences and ideas from community pharmacists with relevant experiences. The course will focus on strategies and concepts that are practicable, effective, and able to fit into current community pharmacy practice models and resources without adding excessively to demands in time and effort of the pharmacist.

Experiential Adherence Teaching Strategies (IPPE/APPE)

APPE Rotation at the MCPHS Pharmacy Outreach Program

Massachusetts College of Pharmacy and Health Sciences SOP-W/M
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Description: The Massachusetts College of Pharmacy and Health Sciences (MCPHS) Pharmacy Outreach Program is an information and referral call center. During a six-week Advanced Pharmacy Practice Experiential (APPE) Rotation, students learn and provide MTM at community outreach programs, most often held at senior centers.

Through conversations with the seniors, students understand the number of times per day patients are actively taking medicine and try to improve adherence by simplifying the daily medication regimen, often decreasing the number of times per day patients are actively taking medications. This counseling also helps patients appropriately space certain medications from other medications and from meals or certain foods when necessary. Patients are provided appropriate pill boxes for the number of times per day, to aid in the organization of multiple medication regimens.

In addition to providing this valuable information, students survey the patients before and after the MTM and again during a one-month telephone follow-up call. Patients are asked about number of medications, number of times per day they are actively taking medications, ease of medication regimen, and general health and wellbeing. APPE rotation students also review the patient's ability to afford medications. Students assist patients in choosing Medicare Part D Plans, and provide information on the state pharmacy assistance program, patient assistance programs, copayment foundations, Extra Help through Social Security, Medicaid, and current insurance plans. Students may also recommend lower cost alternatives for the patient to consider and review these alternatives with the healthcare provider.



IPPE Based on Person-Dependent Medication Adherence Interventions

Philadelphia College of Osteopathic Medicine
School of Pharmacy – Georgia Campus
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Description: This pilot program was instituted at an IPPE rotation site that incorporates both a safety-net clinic site and stand-alone drug store with the second-year students rotating between both, giving students a chance to be part of an interdisciplinary team.

At the clinic site, students conduct the patient intake, performing a medication reconciliation and adherence questioning before joining the medical team in the exam room. After the clinic visit, the student conducts a follow-up call to the patient using a script. The patient is called and asked several questions concerning their clinic visit, their medications, their home blood sugar readings, blood pressure readings, and diet. The tool was developed to target patients with hypertension, diabetes, and/or hyperlipidemia.

The second-year student then rotates to the drug store, which maintains the clinic's donated medications and dispenses them to the clinic patients at a cost of \$2.00 each. The student spends two weeks in the clinic, rotates one week to the drug store, and then rotates back to the clinic with this cycle repeating itself through the semester.

Upon the patient's return visit to the clinic, the patient's intake is by the student that had spoken to them on the telephone for maximum impact, if at all possible.

Medication Adherence Training throughout the Curricula/APPE in Behavioral Health

Southern Illinois University Edwardsville
School of Pharmacy
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Description: Medication adherence and the complications associated with treatment non-adherence are addressed throughout the pharmacy curriculum. In their fourth year, 8-10 students have the opportunity to take an elective five-week advanced pharmacy practice experience (APPE) in

behavioral health. This rotation is offered at a not-for-profit community mental health center.

When students begin this rotation, they become part of an Assertive Community Treatment (ACT) team. An ACT team is an interdisciplinary team consisting of a psychiatrist, clinical pharmacist, vocational specialists, nurses, and social workers. The role of the ACT team is to provide psychiatric and social services to patients in the community in an effort to prevent hospitalization, improve treatment adherence, and increase patient independence in their healthcare. Medication management, housing services, vocational services, and substance abuse treatment services are all provided routinely. The clinical pharmacist on the ACT team is a Board Certified Psychiatric Pharmacist and has received extensive training in motivational interviewing.

The students are given daily opportunities to interact with patients in the community and at their places of residence. As part of the interdisciplinary treatment team, pharmacy students also help educate staff on methods to improve treatment adherence, including changes in patient pharmacotherapy regimens, the use of long-acting injections, pill counts, pill boxes, and daily medication management.

Medication Adherence Evaluation Tool (Modified Morisky Scale)

Texas Southern University
College of Pharmacy and Health Sciences
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Description: The evaluation tool utilized contains a six-item Modified Morisky Scale (MMS) with yes and no questions, along with patient demographics, health status, and medical history. The survey is a standardized Teleform available in English and Spanish and is evaluated by health care professionals using Microsoft Access. The MMS is utilized to place patients into quadrants based on their level of knowledge and motivation related to their medication taking behaviors.



As a component of the Introductory Pharmacy Practice Experience (IPPE) program, first-year pharmacy students conduct these surveys while completing their IPPE hours at various community settings in the Greater Houston area. The survey is completely voluntary and anonymous. Each student is required to administer 30 surveys to patients 18 years and older while on site and under the supervision of an assigned pharmacist or preceptor. Although this activity does not count toward their required 300 hours of practice experiences in IPPE, students do receive credit for their work in the didactic portion of the IPPE course.

Implementing Medication Adherence Intervention APPE

The University of Mississippi School of Pharmacy
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Description: PHAD 541: *Suboptimal Drug Consumption* is an advanced pharmacy practice rotation focused on medication adherence. During the PHAD 541 rotation, students are exposed to a variety of literature in order to deepen their understanding of medication adherence and how to develop tailored interventions to improve medication adherence.

Students in the rotation partner with the community pharmacy in Oxford or its surrounding area in order to evaluate the practice regarding the impact of suboptimal medical consumption. As part of this interaction, the student is expected to prepare a report outlining potential areas of improvement or potential strategies for improving medication adherence among the patients patronizing the community pharmacy. Working with one of the pharmacists in that location, the student designs and implements an intervention that maximizes consumption opportunities while minimizing the impact on the practice itself. The intervention can be focused on a specific population, on a single cause of medication non-adherence, or on a more tailored approach. Because the student is assigned to this site for the next rotation, he or she can continue to implement and evaluate intervention therapy closing the loop in their learning.

Pharmacy Patient Medication Education Group

University of Arizona College of Pharmacy
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Description: The pharmacy patient medication education group was designed to address issues that have been identified as contributing factors to psychiatric medication non-adherence.

This weekly group covers the following topics:

- Side effects and how to handle them appropriately
- Techniques to aid in remembering to take medication
- The importance of adherence
- Effective communication with healthcare providers.

The group is designed to be interactive. The patients are encouraged to ask questions, and the group facilitator also asks open-ended questions of the group members as needed to ensure that all relevant topics are covered. The preceptor, a clinical specialty pharmacist in psychiatry, is present during all groups.

The pharmacy student observes the medication education group for the first week and gradually becomes more interactive with the patients in the group setting. The pharmacy student is expected to lead the group, with support from the preceptor, by the final week of the rotation. The pharmacy student is also responsible for following up with patients on an individual basis as it relates to factors that may interfere with the patient's ability to be adherent to his/her medication regimen following discharge. Students receive immediate feedback on their interactions with patients and are encouraged to incorporate these suggestions into their future interactions with patients.

MedCheck Program

West Virginia University School of Pharmacy
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Description: The MedCheck Program is an Introductory Pharmacy Practice Experience (IPPE)



focused on the provision of MTM services by third-year students in a free clinic.

Two class periods are used to orient the students to the clinic and objectives and structure of the MTM activity. Each student pair then signs up for two patient visits. The students receive de-identified patient information the week prior to each visit. The students are responsible for performing a comprehensive medication review, developing recommendations to improve medication therapy, and noting any additional clarifying information that should be gathered during the patient visit. The student pair does a formal patient presentation to the preceptor prior to the patient encounter.

Patients are asked to bring all their medications to their visit, and discrepancies are documented.

Patients are asked about adherence with the prescribed medication regimen. Strategies to improve adherence are discussed with the patient, if needed. Documents filled out with the patient during the visit include a Medication List and Patient Action Plan.

The student pair writes a SOAP note encompassing pertinent information from the comprehensive medication review and patient encounter including the patient action plan and other recommendations. The preceptor reviews the SOAP note and, once finalized, it is entered in the patient's electronic medical record.

* *Submission is currently in development or concept phase.*

