

UMKC



Kansas City



Columbia



Objectives

- Summarize the evolution of the IPPE that incorporates ACPE Standard Number 14-Curricular Core-Pharmacy Practice Experiences at a multi-campus public institution
- Describe technology employed to advance the knowledge and skills developed during the IPPE
- Describe the multilayered assessment process utilized to evaluate the IPPE
- Apply knowledge gained to attain educational successes with faculty members in diverse, interprofessional settings




Evolution of IPPE

Maqual Graham, PharmD
Associate Professor




ACPE Standard No.11, Guideline 11.5
Effective July 1, 2000

- The IPPE should develop **initial** skills necessary to perform as a pharmacist
 - Offered in various practice settings
 - During early sequencing of the curriculum
 - Support growth in the student's ability to provide pharmaceutical care




The IPPE at UMKC

- Established before 1993 to provide a continuum of patient care activities throughout the third and fourth professional years
 - Clinical Practice I (453P)
 - Clinical Practice II (456P)




Clinical Practice I

- Expectations of the student
 - Determine data pertinent to the patient case
 - Organize information obtained
 - Identify drug-related problems
 - Communicate primarily with peers (senior student) as Clinical Practice I students do not formally present patient cases




Clinical Practice II

- Expectations of the student
 - Obtain and organize pertinent patient information
 - Identify drug-related problems
 - Formulate therapeutic plans for the problems identified
 - Discuss appropriate monitoring parameters to assess therapeutic outcomes and adverse effects
 - Present 2 patient cases per rotation or 6 cases for the entire semester experience




ACPE Standard No.11, Guideline 11.5 *Effective July 1, 2000*

- As of July 2000, UMKC IPPE instructors felt that Clinical Practice I and II sufficiently met Standard No. 11, Guideline 11.5
- However, some IPPE instructors wanted to design an IPPE that met ACPE accreditation standards **while affording students the opportunity to provide limited, but important, pharmacy services**




Early Patient Oriented Care (EPOC)

- Adapted from Albany College of Pharmacy
- Program implemented in the Fall of 2000




EPOC

- Students were expected to
 - Interview assigned patients
 - Obtain pertinent information such as past medical history, social and family history, medication history, allergies, and labs
 - Determine goals of treatment
 - Design therapeutic regimens (lifestyle and drug)
 - Provide medication counseling
 - Document all activities in the medical record




EPOC

- Provided a continuum of patient care activities throughout both semesters of the third and fourth professional years
- Students were afforded the option to choose the traditional track (Clinical Practice I and II) or EPOC
 - Only a finite number of students could participate
 - Resulted in inconsistent student experiences




General Medicine I

- Initially implemented in the Fall of 2004 to offer an equivalent experience for all students
- Blended the strengths of the previous programs
 - 9 large group, classroom experiences
 - Weekly (4-5 hours) practice site activities throughout two semesters




Large Group Discussion Topics

- Orientation to the Course
- Pharmaceutical Care/Drug-Related Problems
- Various Data Sources
- The Patient as the Data Source
- Organization of Patient Data and Development, Implementation and Monitoring of the Care Plan
- Documentation
- Patient Resources
- Professionalism
- Cultural Competency



Practice Site Activities


- Chart reviews
- Case presentations
- Direct patient care activities
- Projects
- **Students were assigned to either a single site (single instructor) or multiple sites (multiple instructors) to complete the experience**



ACPE Standard No. 14


Effective: July 1, 2007

- The School must provide a continuum of required and elective pharmacy practice experiences, from introductory to advanced, of adequate scope, intensity and duration to support the achievement of professional competencies
- Must integrate, apply, reinforce and advance the knowledge, skills, attitudes and values developed throughout the other components of the curriculum




ACPE Standard No. 14

- Must include direct interaction with diverse patient populations in a variety of practice settings
- Must involve collaboration with other healthcare professionals




ACPE Standard No. 14, Guideline 14.4
Effective: July 1, 2007

- Introductory Pharmacy Practice Experience
 - Must involve actual practical experiences in the community and institutional settings
 - Permit students to assume direct patient care responsibilities
 - Begin early in the curriculum
 - Interface with didactic coursework
 - Continue in a progressive manner towards the APPE




General Medicine I

- Revised and implemented in the Fall of 2006
 - Required IPPE that provides a continuum of patient care activities throughout the fourth professional year
 - One academic year (Fall and Spring semesters) in a patient care setting
 - 8 hours weekly for 10 weeks each semester
 - 160 contact hours total
 - Emphasis of study on care of patients with commonly seen illnesses
 - Provision of direct patient care and improving rational drug therapy
 - Complete a project having an impact on a broad group of patients




General Medicine I

- Removed large group, classroom discussions from the introductory experience
- Assigned students to a single site (single instructor) and eliminated multiple site, multiple instructor experience
- Designed to interface/compliment the Pharmacotherapy Course series
 - Health Assessment taught in Pharmacotherapy yet the skill evaluated as part of the General Medicine I experience
 - Principles of Laboratory Monitoring taught and assessed in Pharmacotherapy as well as assessed in General Medicine I
 - Identified and assigned patients to General Medicine I students with problems concurrently discussed in Pharmacotherapy




ACPE Standard No. 14, Guideline 14.4 *Effective: July 1, 2007*


- As of May 2008, UMKC IPPE instructors felt that General Medicine I sufficiently met Standard No. 14, Guideline 14.4



UMKC Experiential Programs


Year	Course	Hours
Year 1 (P2)	Academic Service Learning (elective)	
Year 2 (P3)	Academic Service Learning (elective)	
Year 3 (P4)	Introduction to Community Pharmacy Practice (two week summer experience with adjunct faculty)	80 hours
	Introduction to Health Systems Pharmacy Practice (two week summer experience with adjunct faculty)	80 hours
Year 4 (P5)	Introduction to Clinical Pharmacy Practice: General Medicine I & Health Assessment (longitudinal experience during the academic year with primary practice faculty)	160 hours
Year 5 (P6)	Advanced Pharmacy Practice Experiences	1440 hours






Module Creation & Technology Employed

Valerie Ruehter, PharmD, BCPP
Clinical Assistant Professor
Director of Experiential Learning



Continued Course Development

- Course evaluations and student feedback obtained
- Ad Hoc Committee of Pharmacy Practice Faculty
- Module topics determined
 - Reinforcement of previous didactic concepts
 - Orientation to common skills and activities
 - Introduction of new information
 - Support learning objectives




Module Topics

- Health Assessment
- Conducting a Patient Interview
- Documenting Patient Interventions
- Reviewing the Medical Record: Inpatient & Ambulatory Care
- Interpreting Laboratory Values & Performing Calculations
- Drug-Drug Interactions
- Drug-Related Problems
- Conducting a History & Physical
- Patient Case Presentation Skills
- Health Literacy
- Cultural Competency
- Communication Skills
- Health Disparities
- Ethical Decision Making
- Professionalism


Module Assessments

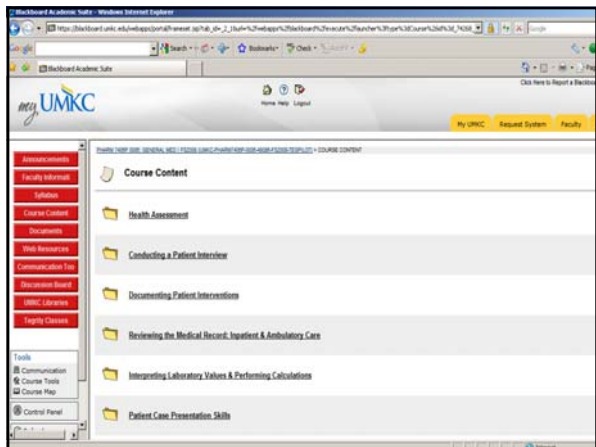
- Each module is associated with a pre- and post-quiz or practice site exercise
 - Quizzes consisted of 5-15 questions
 - Same questions used for both pre- and post-quiz
 - Scores not calculated into overall course grade
 - Application of skills assessed in the practice setting
 - Module completion noted in professionalism section of evaluation tool for appropriate preparation, time management, and self-learning



Use of Technology


- Blackboard course site with Tegrity capability
- Adaptive release tool utilized to control information
 - Unable to use this with Tegrity recordings
- Modules produced through various programs
 - Microsoft PowerPoint
 - Tegrity recordings
 - Adobe Flash Player
 - Camtasia Studio
 - Jing





Successes

- Uniform content delivery
- Common location with easy access
- Encourages self-learning and preparation
- Decreases orientation time to general topics
- Creates bridge from classroom to practice
 - Topics easily incorporated into discussion
 - Enhances learning
- Viewed as beneficial by students




Multilayered Assessment

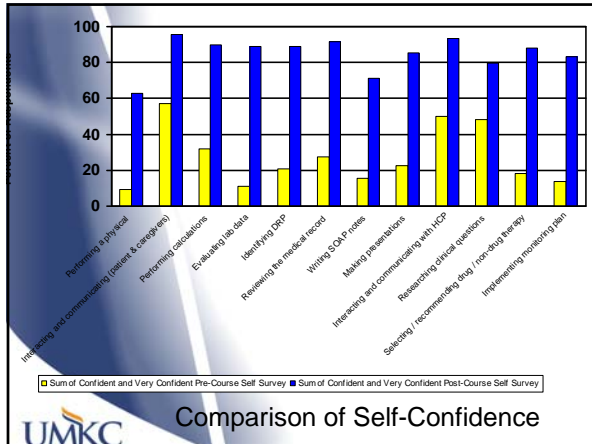
Cameron C. Lindsey, PharmD, BC-ADM
Associate Professor

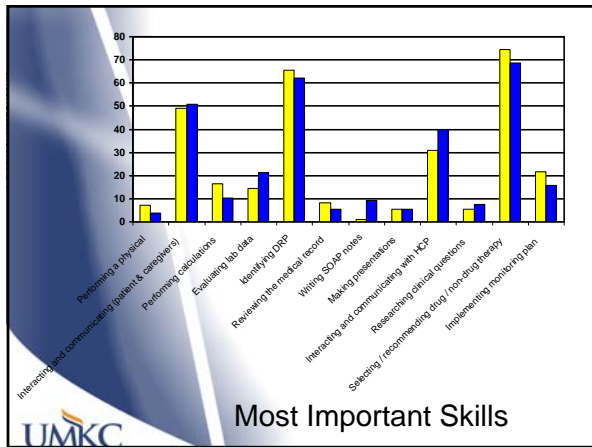


Overview of Various Assessments

- Pre- and post-course self-assessment surveys
 - Self-confidence
 - 3 most important skills
 - 3 least important skills
- Pre- and post-module quizzes
- Practice-site module exercises
 - Health assessment demonstration on-site
 - Written assignment for H & P
- Midpoint and final preceptor evaluations

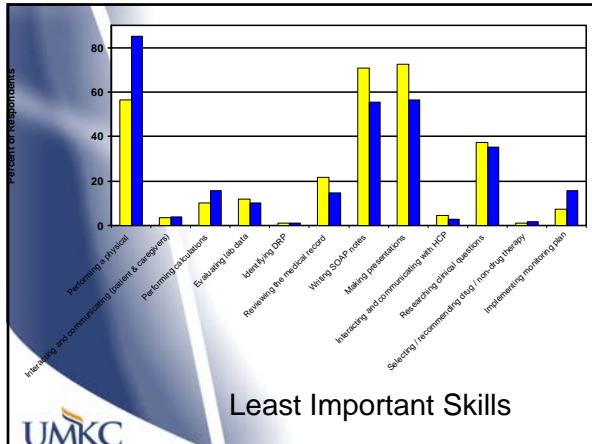






Self-Assessment Survey 3 Most Important Skills

- Remained consistent from pre- and post-course self-assessment survey
 - Selecting and recommending drug / non-drug therapy
 - Identifying drug-related problems
 - Interacting & communicating with patients and caregivers

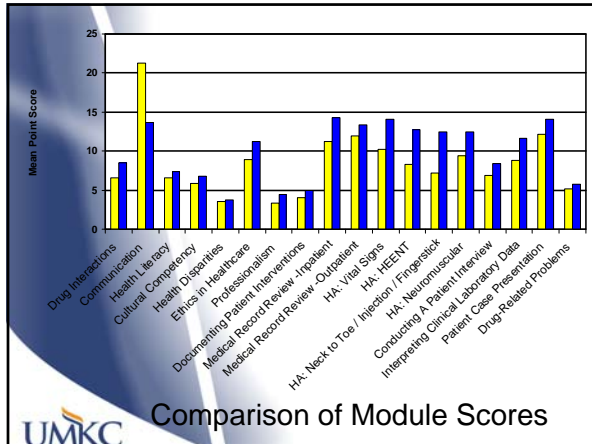


Self-Assessment Survey 3 Least Important Skills

- Remained consistent from pre- and post-course self-assessment survey
 - Performing a physical exam
 - Making presentations
 - Writing SOAP notes

Module Topics

- Health Assessment
- Conducting a Patient Interview
- Documenting Patient Interventions
- Reviewing the Medical Record: Inpatient & Ambulatory Care
- Interpreting Laboratory Values & Performing Calculations
- Drug-Drug Interactions
- Drug-Related Problems
- Conducting a History & Physical
- Patient Case Presentation Skills
- Health Literacy
- Cultural Competency
- Communication Skills
- Health Disparities
- Ethical Decision Making
- Professionalism



Health Assessment Performance

Vital Signs and HEENT

- Vital Signs**
 - Palpate radial pulse
 - Obtain pulse rate
 - Palpate brachial pulse
 - Obtain blood pressure
 - Obtain respiratory rate
 - Assess pain
 - Obtain height
 - Obtain weight
 - Obtain waist circumference
- HEENT**
 - Visual fields (II, IV, VI)
 - Six point gaze (III, IV, VI)
 - Pupil size, shape, response to light (III, IV, VI)
 - Assess nasal cavity
 - Palpate sinuses
 - Assess head and neck lymph nodes


Health Assessment Performance

Neck to Toe / Fingersick / Injection

- Cardiac assessment**
 - Palpate carotid arteries
 - Auscultate carotid arteries
 - Auscultate heart sounds
- Pulmonary assessment**
 - Auscultate breath sounds
- Gastrointestinal assessment**
 - Auscultate bowel sounds
- Extremity Assessment**
 - Assess for peripheral edema
 - Assess skin turgor
- Diabetes Foot Exam/Peripheral Vascular**
 - Perform visual inspection
 - Perform monofilament test
 - Palpate dorsalis pedis
 - Palpate posterior tibial
- Perform finger stick test**
- Demonstrate IM Injection (arm)**
- Demonstrate SC Injection (arm)**
- Demonstrate SC Injection (abdomen)**


Health Assessment Performance *Neuromuscular*

- **Range of Motion / Strength**
 - Tempromandibular Joint (ROM)
 - Cervical Spine/Neck (ROM)
 - Shoulders (ROM)
 - Elbow (ROM)
 - Wrist/Hands/Fingers (ROM)
 - Back (ROM)
 - Hip (ROM)
 - Knee (ROM)
 - Ankle (ROM)
 - Shoulders (strength)
 - Elbow (strength)
 - Hands/ Fingers (strength)
 - Knee (strength)
 - Hip (strength)
 - Ankle (strength)
- **Gait / Balance**
 - Natural Stride
 - Tandem Walking
 - Walk on Heels
 - Walk on Toes
 - Romberg Test
 - Pull Back Test
- **Coordination**
 - Slap hand on thighs
 - Rock – Knife – Paper
 - Thumb to each finger and reverse
 - Finger to nose
 - Heal down shin
- **Reflexes**
 - Patellar
 - Ankle
 - Plantar




History and Physical Written Assignment

- Students viewed a recorded patient interview conducted by a faculty member
- Documented the interview in an H & P format
- Provided to General Medicine I preceptor for evaluation and comments




Midpoint and Final Preceptor Evaluations

- **Four core areas for evaluation**
 - Pharmaceutical Care
 - Communication
 - Practice Management
 - Professionalism



Pharmaceutical Care

- Gather and organize accurate and comprehensive patient-specific information
- Interpret and evaluate patient and drug-related data
- Develop complete medical and drug therapy problem list
- Select and recommend appropriate drug and non-drug therapy
- Devise and implement a patient-specific monitoring plan
- Document pharmaceutical care activity




Communication

- Demonstrate effective communication skills at appropriate levels for patients, caregivers, and the public
- Demonstrate effective communication skills at appropriate levels for health care professionals and providers




Practice Management

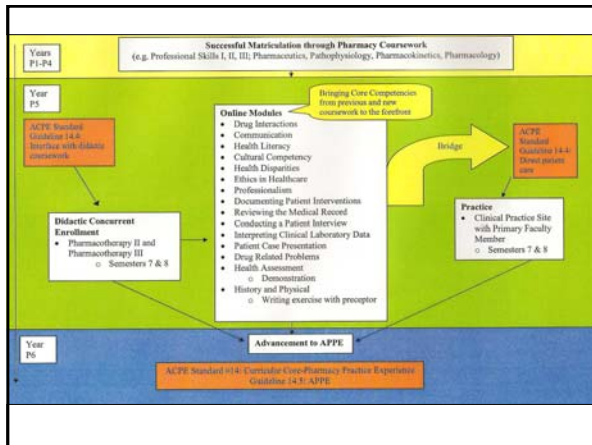
- Complete a project that will have an impact on a broad group of patients
 - Examples:
 - Monograph to impact drug choice in a health system
 - Educational pamphlet for a patient group
 - Newsletter for health professionals
 - Educational class
 - Research project to answer a clinical question



Professionalism

- Demonstrate an appropriate degree of professional behavior
 - Promotes patient care in a confidential manner
 - Respects the autonomy of patients
 - Respects the abilities and values of health care professionals, support staff, and peers
 - Demonstrates motivation
 - Displays independent self-directed learning
 - Displays an appropriate level of preparation, organization, and time management
 - Assesses own knowledge and abilities
 - Accepts feedback and implements suggestions for improvement






Practice Sites


Best Practices of Knowledge Application

Brooke Patterson, PharmD, BCPS, AAHIVE
Deepti Vyas, PharmD, BCPS
Steve Stoner, PharmD, BCPP





Application at an Ambulatory Site

Brooke Patterson, PharmD, BCPS, AAHIVE
Clinical Assistant Professor




Kansas City Free Health Clinic

- Formed in 1971
- “Net” under the “safety net”
 - Kansas vs. Missouri
- Located in urban core
- Health care services free-of-charge
 - General Medicine
 - HIV Primary Care
 - Dentistry
 - Mental Health




IPPE Activities

- Roles & operations of public health clinic
- EXPRESS Clinic
 - Pharmaceutical Care
 - Writing SOAP notes
- Clinic management
 - Clinic Manager-of-the-Day
- Advocacy
- Research
- Discussion groups
- Written assignments
- **All activities use online modules to provide foundation of understanding for activity**




Health Literacy Activity

- Identify currently utilized patient education materials that do not meet principles of health literacy
- Recreate material using health literacy concepts
- Written analysis of limitations of the original material and justification for changes
- Students review "Health Literacy" module prior to the assignment and followed by a discussion with the students




Medication Adherence Activity

- Students are given a fictitious scenario of someone living with a chronic disease
- Students receive medications (jelly beans) that they are instructed to take according to the scenario for 4 weeks
 - Weekly refills
 - Language barriers
 - Partial fills
 - Transportation issues
 - Pharmacy hours of operation
- "Cultural Competency" and "Health Literacy" modules are reviewed prior to the assignment




EXPRESS Clinic

- Student-run pharmaceutical care clinic
- Clinic roles and responsibilities
 - Clinic Manager-of-the-Day
 - Clinicians
 - Patient Assistants
- Multiple modules reviewed prior to students' initiation into this activity




Online Modules

- Facilitate deeper, more rewarding programs and projects with the students
 - Utilize in-clinic time for patient interaction
- Demonstrate knowledge-in-action



Application at an Inpatient Site

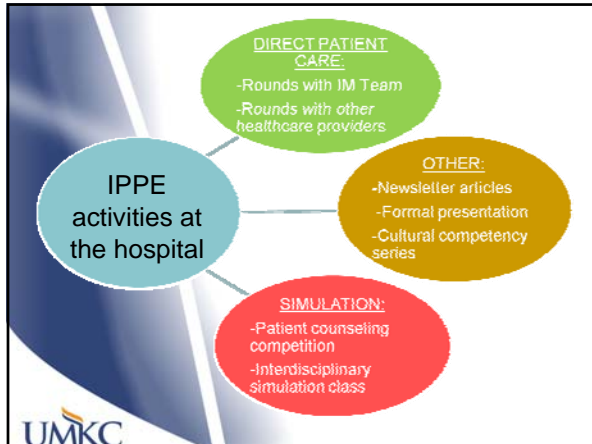
Deepti Vyas, PharmD, BCPS
Clinical Assistant Professor



The University of Missouri Hospital and Clinics

- The only Level I trauma center and helicopter service in mid-Missouri
- 274-bed academic institution servicing the mid-Missouri region
- Internal Medicine (IM) Teaching Service averaging 10-12 patients per team





Rounding with the IM Team

- Introduction to the Internal Medicine team →
- Students review the module on "Reviewing the Inpatient Record" prior to their rounding experience

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graph TD
    A[Attending physician] --> B[Chief Medical Resident]
    A --> C[Clinical Pharmacist]
    B --> D[Intern physician]
    C --> E[Pharm.D. Student]
    D --> F[Medical Student]
    E --> F
  
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Rounding with other Health Care Providers

- Students spend one 4-hour session with a
 - Dietician
 - Respiratory Therapist
 - Medication Assistance Manager
- Students review module on "Communication Skills" prior to rounds


Written Communication Activities

- Conducting a patient interview
- Writing a SOAP note
- Documenting patient interventions
- Two newsletter articles for state organizations
- Students review modules on "Conducting a Patient Interview", "Communication Skills" and "Documenting Patient Interventions"



Interdisciplinary Simulation Class

- 2 week 2-hour class focusing on medication errors
 - Students from the various health professions perform a root-cause analysis on a simulated medical error
- 1 week 2-hour simulation
 - 5 patient cases are simulated through the use of high fidelity simulators
- Students review module on "Professionalism" prior to the experience




Cultural Competency Series

- 10 week 2-hour sessions for concepts related to inpatient care
- Specific topics include
 - Religion and healthcare
 - Socioeconomic status and impact on health disparities
 - Ethnicity and impact on health disparities
 - Patient care simulation
 - Appropriate use of a medical interpreter
- Students review modules on "Health Literacy" and "Cultural Competency"



Application at a Specialty Site

Steve Stoner, PharmD, BCPP
Clinical Professor
*Chair, Division of Pharmacy Practice
 and Administration*




Northwest Missouri Psychiatric Rehabilitation Center

- Original psychiatric facility opened in 1874
- 1950's population over 3,000 patients
- Current facility opened in 1997
- Current census of 108 beds





IPPE Activities

- Organized and emphasized order of modular completion
 - Patient case presentations and intervention documentation
 - Medical record review
 - Multiple SOAP note writing scenarios based with written and verbal feedback
 - Conducting a patient interview
 - Introduced interview and assessment video of mental health patient
 - Multiple opportunities to assess and communicate interventions
 - Health Assessment
 - Participated in clinics with focus on psychiatric stability, movement disorders, hypertension, hyperlipidemia, and diabetes
 - Cultural competency and health disparities
 - Focused on communication and comprehensive care of the mentally ill
- Role of the clinical pharmacist in a psychiatric setting
 - Rounding and interprofessional communication
- Thought papers on attitudes towards mental illness
 - “Out of the Shadows”
 - Community practice examples





Extended Application of IPPE Activities and Modules

- Case discussion groups
- Extension of modules to special projects
 - Research
 - Scholarly writing
 - Pharmacy Administration



Scholarly Writing Opportunities

Annals of Pharmacotherapy Journal of Pharmacy Practice



Formal Thought Process Barriers: A Visual Representation



*Photos from exhibits at the [Glore Psychiatric Museum](#), St. Joseph, Missouri.



Summary

- General Medicine I continues to meet ACPE Standard No. 14, Guideline 14.4 for Introductory Pharmacy Practice Experience
- Utilization of technology enhances the learning experience
- Multiple assessments measure student performance
- Modules are viewed as a complementary learning tool, providing consistent delivery of fundamental concepts applicable to all practice settings