



UNIVERSITY OF PITTSBURGH
School of Pharmacy

Role of P4 students in an Inpatient Medication Education Program: An Advanced Pharmacy Practice Experience

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Objectives

- To describe the development of a unique APPE where pharmacy students provide medication education to high-risk patients in the hospital setting
- To recall the impact of first 8 students completing the APPE on the Medication Education Program at the University of Pittsburgh Medical Center
- To list the benefits of the Medication Education APPE to the student, the hospital and the school of pharmacy



Medication Education Program at UPMC

- Goal: Provide all patients with information about their medications throughout their hospitalization
- Nurses and respiratory therapists: provide medication information each time they administered a medication
- Pharmacists: provide education to patients at high risk for medication nonadherence or poor outcome



Pharmacist Component of the Medication Education Program at UPMC

- Patient Identification
 - Daily electronic list of patients meeting criteria
 - Manual triage and prioritization of patients
- Preparation for Medication Education
 - Chart review
- Patient Interaction
 - Health behavior change model
 - Patient-specific medication education



Pharmacist Component of the Medication Education Program at UPMC

- Medication Review/Problem Identification
- Documentation within Permanent Medical Record
 - Description of the education session
 - Assessment of patient's medication knowledge and compliance
 - Recommendations to improve the patient's medication regimen, if appropriate



Identification of Student Role

- Known barriers to a successful Medication Education Program:
 - Lack of pharmacist time to conduct a thorough chart review
 - Inadequate pharmacy staffing and inability to immediately hire additional pharmacists

Griffith NL ET AL. *Am J Health-Syst Pharm.* 1998;55:1127-1133.

- Options for maintaining the Medication Education Program were contemplated, including offering an experience to pharmacy students



Inpatient Medication Education Advanced Pharmacy Practice Experience

- Offered to one student for each of the twelve 4-week rotation blocks during the 2007-2008 academic year
- Effectively increasing the personnel devoted to the Medication Education Program by one over 48 weeks per year
- Hospital's education-trained pharmacists train and oversee the students



APPE Design

- Week 1
 - Orientation to hospital and to Medication Education Program procedures
 - Brief course on Health Behavior Change model
 - By the 4th day, the majority of students are competent to independently triage and work up the patients who require pharmacist education
 - By the sixth day, the majority of students are confident enough to lead the patient education session



APPE Design

- Weeks 2-4
 - Student independently obtains patient list, triages the patients, and begins patient assessment
 - Student presents patients to pharmacist and highlights specific points to be discussed
 - Pharmacist accompanies student into each patient's room for the education session
 - Student prepares a handwritten progress note that is co-signed by pharmacist
 - Pharmacist provides informal verbal feedback to the student following each patient encounter

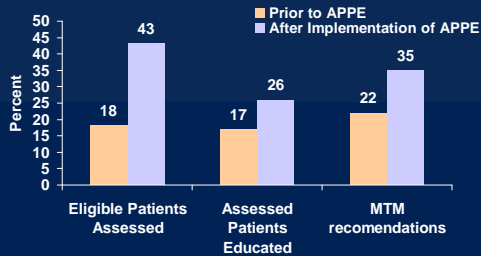


APPE Design

- Weeks 2-4 (continued)
 - Students are required to prepare two formal presentations
 - Students meet with one of the pharmacists each week to review a medication or disease topic



Assessment of the Impact of the Students on the Medication Education Program



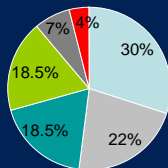
Students typically triaged 6 to 10 patients and counseled 2 to 5 patients per day

Donihi et al. Am J Pharm Educ 2009;73 (1): Article 11



Medication management recommendations made by students

- Add a medication (medication reconciliation)
- Optimize the dose of a current medication
- Add a medication (untreated indication)
- Change a current medication to a more appropriate medication
- Discontinue a medication without an indication
- Change the route of a current medication



74% of these recommendations were accepted by the healthcare team.

Donihi et al. Am J Pharm Educ 2009;73 (1): Article 11



Student Evaluation of the Inpatient Medication Education APPE

Median Likert Score

I was a contributing member of the patient care team.	4.5
The educational experience was stimulating and valuable.	5
Overall practice site experience.	5
As a result of this rotation, I can more effectively:	
Develop and use an effective patient database.	5
Communicate verbally and persuasively to positively impact a patient's care.	4.5
Communicate via writing to positively impact a patient's care.	5
Critique my own learning and skills to improve problem solving and self-directed learning.	4.5



Benefits of the Inpatient Medication Education APPE

- Opportunity for **Students**
 - Provide and improve patient care
 - Feel a sense of responsibility and accountability for the provision of direct patient care
- Additional manpower for **Hospital Pharmacy** to provide medication education
- APPE site for the **School of Pharmacy**
 - Sees value of its students
 - Is available across all rotation blocks
 - Provides a quality, direct patient care experience



Summary: Inpatient Medication Education APPE

- Model for other schools of pharmacy designing rotations that meet ACPE standards
 - Students refine clinical judgment through the patient triage process and prioritization of education points
 - Students assume significant personal responsibility for the content and quality of the patient education provided
 - Students demonstrate professional behavior, attitudes, and values in interactions with patients, caregivers, and other health care providers, and enhance professional confidence



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