



## The Development and Implementation of an Admitting Pharmacist in the Community Hospital Setting

Estela Trimino, Pharm.D.  
 Janelle Berg, Pharm.D., BCPS  
 Fernando J. Zaldivar, B.S. Pharm.  
 Claudia DiStrito, R.N., B.S.N., M.S.H.

**Mercy Hospital**  
 Miami, Florida

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

The authors have nothing to disclose.

### Setting

Mercy Hospital is a 483-bed acute care hospital, in Miami, Florida, staffed by over 900 physicians representing 28 medical specialties.

- Approximately 23,000 admissions through the Emergency Department (ED) annually
- 60% of all admissions are first seen and evaluated in the ED
- Centers of Excellence include:
  - The Heart Center at Mercy Hospital
  - The Miami Cancer Center at Mercy Hospital
  - The Orthopaedic Institute at Mercy Hospital
  - The Minimally Invasive Surgical Institute at Mercy Hospital
- Pharmacy clinical specialists provide medication therapy management in the critical care areas, oncology unit, and HIV/medicine service
- ASHP accredited PGY1 residency program
- Informatics (Pyxis® Systems, barcode technology, Clini-Doc, EMR)

### Introduction and Purpose

ED healthcare providers have noted a shift towards treating chronic conditions, in part due to the over-utilization of the ED as a site for primary care visits. This has increased demands on system resources and holding times for admitted patients.

Primary focus of this endeavor was to establish and measure the impact of providing pharmaceutical services to patients upon admission.

#### Specific goals:

- prevent adverse drug events (ADEs)
- obtain accurate medication histories
- communicate information to the next provider
- select timely and appropriate antibiotics
- assist with performance improvement and/or JCAHO® Core Measures
- manage the formulary
- improve patient and nursing satisfaction

### Description of the Program

#### Timeline

##### March, 2002

- Resident assigned the project to cost justify an additional position
- Literature search conducted; focus on pharmacy services in the admission process
- Research showed that obtaining accurate medication histories was the single most important factor in preventing ADEs

##### April, 2002

- Information collected and analyzed
- Position proposal for admitting pharmacist submitted to the hospital's senior administration
- Position approved, recruitment began, and hiring finalized in July, 2002

##### August, 2002

- Implementation phase began with observing the admission process
- Evaluation period concluded that the majority of hospital admissions occur through the ED
- Admitting pharmacist incorporated into the ED workflow
- Goal was to assess and intervene once the physician gave admitting orders
- Obstacles encountered:
  - Identification of admitted patients
  - Communication with and assessment by the pharmacist for direct admissions and transfers
  - Physician buy-in and support of the admitting pharmacist's role in patient care
  - Nursing understanding that the role is NOT a distribution function
  - Pharmacy staff acceptance
- Numerous quality improvement cycles performed, obstacles resolved

##### October, 2002

- Patient interviews conducted to ascertain accurate medication histories
- Herbal medication teaching and smoking cessation counseling provided as needed
- Home medication lists compiled, treatment regimens reviewed, admitting orders evaluated, and discrepancies reconciled with physicians
- Pharmacist processed initial orders to improve nursing and patient satisfaction
- Pharmacist became the "medication specialist" in the ED

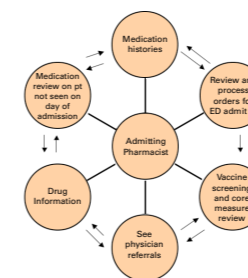
##### November, 2002

- System implemented to identify direct admissions along all service lines, including ED
- Average interview time per patient was 25 minutes
- Approximately 20% of all admissions were seen
- Acceptance to interventions grew

##### January, 2003

- Physicians began "ordering" admitting pharmacist consultations
- Admitting pharmacist is an integral and necessary part of the admission process

### Experience with the Program



Typical Day

Data was collected throughout the implementation phase on a PDA utilizing Pendragon™ forms, and later on Clini-Doc software.

- 6,639 patients were interviewed
- 7,815 interventions were performed
- 92% acceptance rate

#### Types of Interventions

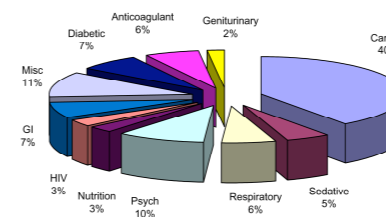
Intervention Type	Number of Interventions
Medication Histories Obtained	6,639
Medications Omitted	3,839
Discontinue Therapy	1,052
Dosing Issues	1,045
Add/Enhance Medications	796
Non-formulary Medications	683
Allergy Avoidance	154
IV to PO	130
Wrong Medication Ordered	116
<b>Total Interventions*</b>	<b>7,815</b>

\*Excluding Medication Histories

#### Cost Avoidance Modeling

Potential ADE	Model (\$2,162/Event)
Medication Omitted	8,299,918
Discontinue Therapy	2,274,424
Add/Enhance Medications	1,720,952
Wrong Medication	250,792
Dosing Issues	2,259,290
Allergy Avoidance	332,948
<b>Total Cost Avoidance</b>	<b>\$ 15,138,324</b>

Reference: Senst B et al. Am J Health-Syst Pharm. 2001; 58:1126-32.



Medications Omitted by Class

### Quality / JCAHO® Initiatives

- **Congestive heart failure (CHF)**
  - Tagged charts and created guidelines
- **Acute myocardial infarction (AMI)**
  - ED ACS protocol
    - beta-blocker use increased from 85% to 95%
    - aspirin use increased from 92% to 100%
    - documentation of reason(s) medication was not given included
- **Community acquired pneumonia (CAP)**
  - impact time to first dose administration
  - ED CAP electronic order set was revised
  - antibiotic(s) pre-formatted in a drop-down menu, pre-determined by
    - antibiotic formulary, IV access, allergy profile, patient acuity, and risk of *Pseudomonas* infection
- **Medication reconciliation**

### Conclusion

- A total of 6,639 patients were interviewed
- 7,815 interventions were performed
- There was a 92% acceptance rate
- Estimated cost avoidance from prevented ADEs was \$15,138,324
- Accurate medication histories were performed with increased communication across the continuum of care
- Formulary management and timely and appropriate antibiotic selection have improved
- Quality outcomes related to the ED services have been significantly impacted

Development of admitting pharmacist positions in other hospitals would allow pharmacists to become leaders in providing full compliance with JCAHO® continuum of care and ASHP 2015 initiatives to improve patient care while preventing adverse drug events. This unique and innovative role has become an indispensable component of the admission process at our institution.

"JCAHO" is a trademark of the Joint Commission on Accreditation of Healthcare Organizations. ASHP Advantage has no relationship or affiliation with the Joint Commission. The Joint Commission does not endorse or sponsor these programs. Statements or presentations in connection therewith by individuals in some way connected with the Joint Commission represent only their personal views and are not binding upon the Joint Commission.