Implementation of Clinical Services at Various Institutions

Niki Carver, Pharm.D., UAMS Medical Center
Shannon Hays, Pharm.D., White Co Medical
Melanie Claborn, Pharm.D., Veterans Healthcare System of the Ozarks/UAMS NW

OBJECTIVES

• Describe various hospital pharmacy quality improvement initiatives
• List components of the framework necessary for expanding clinical services
• Describe methods of utilizing pharmacist-extenders in providing clinical services
• Discuss the development and implementation of clinical pharmacy services in primary care at a federal facility

Increasing Possibilities for Health-Systems Pharmacists Involvement

Niki Carver, Pharm.D.
Assistant Director for Medication Safety
University of Arkansas for Medical Sciences

Disclosure

This presenter has no conflicts of interest to disclose.

Objectives

• Describe various hospital pharmacy quality improvement initiatives

Definitions

ASHP – American Society of Health-System Pharmacists
CMS – Center of Medicare & Medicaid Services
The 2015 Initiative is a program to help make medication use in health systems more effective, scientific, and safe. There are six key goals and 31 specific objectives to be accomplished by the year 2015.

- **The 2015 Initiative** is a tool to help health-system pharmacy practitioners achieve the ideals identified in the vision statement.
- ASHP dedicates itself to achieving a vision for pharmacy practice in hospitals and health systems in which pharmacists

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**Goal/Objectives**

<table>
<thead>
<tr>
<th>Goal/Objectives</th>
<th>Goal 1 Increase the extent to which pharmacists help individual hospital inpatients achieve the best use of medications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Pharmacists will be involved in managing the acquisition, upon admission, of medication histories for a majority of hospital inpatients with complex and high-risk medication regimens* in 75% of hospitals.</td>
</tr>
<tr>
<td>Objective</td>
<td>The medication therapy of a majority of hospital inpatients with complex and high-risk medication regimens will be monitored* by a pharmacist in 100% of hospitals.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 90% of hospitals, pharmacists will manage medication therapy for inpatients with complex and high-risk medication regimens*, in collaboration with other members of the health-care team.</td>
</tr>
<tr>
<td>Objective</td>
<td>Hospital inpatients discharged with complex and high-risk medication regimens* will receive discharge medication counseling managed by a pharmacist in 75% of hospitals.</td>
</tr>
<tr>
<td>Objective</td>
<td>50% of recently hospitalized patients (or their caregivers*) will recall speaking with a pharmacist while in the hospital.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 90% of hospitals, pharmacists will ensure that effective medication reconciliation* occurs during transitions across the continuum of care.</td>
</tr>
</tbody>
</table>

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**Goal/Objectives**

<table>
<thead>
<tr>
<th>Goal/Objectives</th>
<th>Goal 2 Increase the extent to which health-system pharmacists help individual non-hospitalized patients achieve the best use of medications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>In 70% of health systems providing clinic care, pharmacists will manage medication therapy for clinic patients with complex and high-risk medication regimens*, in collaboration with other members of the health-care team.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 95% of health systems providing clinic care, pharmacists routinely counsel clinic patients with complex and high-risk medication regimens.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 90% of home care services, pharmacists will manage medication therapy for patients with complex and high-risk medication regimens*, in collaboration with other members of the health-care team.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 90% of long term care facilities, pharmacists will manage medication therapy for patients with complex and high-risk medication regimens*, in collaboration with other members of the health-care team.</td>
</tr>
</tbody>
</table>

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**Goal/Objectives**

<table>
<thead>
<tr>
<th>Goal/Objectives</th>
<th>Goal 3 Increase the extent to which health-system pharmacists actively apply evidence-based methods to the improvement of medication therapy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>In 90% of hospitals, pharmacists will be actively involved in providing care to individual patients that is based on evidence, such as the use of quality drug information resources, published clinical studies or guidelines, and expert consensus advice.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 90% of hospitals, pharmacists will be actively involved in the development and implementation of evidence-based drug therapy protocols and/or order sets.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 90% of hospitals, pharmacy departments will actively participate in hospital-wide efforts to ensure that patients receive evidence-based medication therapies required by the CMS hospital quality initiative, Joint Commission Core Measures, and/or state-based quality improvement and public reporting efforts.</td>
</tr>
<tr>
<td>Objective</td>
<td>In 70% of hospitals, pharmacists will actively be involved in medication- and vaccination-related infection control programs.</td>
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</tbody>
</table>

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**Goal/Objectives**

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<th>Goal/Objectives</th>
<th>Goal 4 Increase the extent to which pharmacists help individual hospital inpatients achieve the best use of medications.</th>
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</thead>
<tbody>
<tr>
<td>Objective</td>
<td>95% of hospital pharmacies will have an organizational program, with appropriate pharmacy involvement, to achieve significant annual, documented improvement in the safety of all steps in medication use.</td>
</tr>
<tr>
<td>Objective</td>
<td>95% of pharmacies in health systems will conduct an annual assessment of the processes used throughout the health system for compounding sterile medications, consistent with established standards and best practices.</td>
</tr>
<tr>
<td>Objective</td>
<td>95% of hospitals have at least 95% of routine medication orders reviewed for appropriateness by a pharmacist before administration of the first dose. (*Not including doses required in the context of emergencies or immediate procedures such as surgeries, labor and delivery, cardiac catheterization, etc.)</td>
</tr>
<tr>
<td>Objective</td>
<td>95% of hospital pharmacies will participate in ensuring that patients receiving antibiotics as prophylaxis for surgical infections will have their prophylactic antibiotic therapy discontinued within 24 hours after the surgery end time.</td>
</tr>
<tr>
<td>Objective</td>
<td>95% of pharmacy technicians in health systems will be certified by the Pharmacy Technician Certification Board.</td>
</tr>
<tr>
<td>Objective</td>
<td>95% of new pharmacy technicians entering hospital and health system practice will have completed an ASHP-accredited pharmacy technician training program*.</td>
</tr>
<tr>
<td>Objective</td>
<td>95% of new pharmacists entering hospital and health-system practice will have completed an ASHP-accredited residency.</td>
</tr>
</tbody>
</table>
Goal/Objectives

Goal 5  Increase the extent to which health systems apply technology effectively to improve the safety of medication use.

Objective 5.1  75% of hospitals will use machine-readable coding to verify medications before dispensing.

Objective 5.2  75% of hospitals will use machine-readable coding to verify all medications before administration to a patient.

Objective 5.3  For routine medication prescribing for inpatients, 70% of hospitals will use computerized prescriber order entry systems that include clinical decision support.

Objective 5.4  In 65% of health systems, pharmacists will use medication-relevant portions of patients’ electronic medical records for managing patients’ medication therapy.*

Objective 5.5  In 70% of health systems, pharmacists will be able to access pertinent patient information and communicate across settings of care to ensure continuity of pharmaceutical care for patients with complex and high-risk medication regimens.

Goal 6  Increase the extent to which pharmacy departments in health systems engage in public health initiatives on behalf of their communities.

Objective 6.1  60% of pharmacies in health systems will have specific ongoing initiatives that target community health.

Objective 6.2  50% of pharmacy departments in health systems will be directly involved in ongoing immunization initiatives in their communities.

Objective 6.3  85% of hospital pharmacies will participate in ensuring that eligible patients in health systems receive vaccinations for influenza and pneumococcus.

Objective 6.4  80% of hospital pharmacies will participate in ensuring that hospitalized patients who smoke receive smoking-cessation counseling.

Objective 6.5  90% of pharmacy departments in health systems will have formal, up-to-date emergency preparedness programs integrated with their health systems’ and their communities’ preparedness and response programs.

CMS Core Measures

- Acute Myocardial Infarction (AMI)
- Heart Failure (HF)
- Pneumonia (PNE)
- Stroke

** Many measures are medication-related**

AMI

- Order set development and maintenance
- Identify patients
- Interventions
  - Timely administration of ASA on arrival
  - ACE/ARB at discharge for decreased LVF
  - ASA/Beta-blocker at discharge
  - Counsel patients about ASA at discharge
  - Statin (or HMG CoA reductase inhibitors) prescribed at discharge
  - Insures nurse is contacted/appropriate documentation occurs

Heart Failure

- Order set development and maintenance
- Concurrent inpatient review
- Interventions
  - Discharge instruction
  - ACE/ARB at discharge if decreased LVF
  - Smoking cessation advice/counseling
  - Insures appropriate documentation occurs

PNEUMOCOCCAL/INFLUENZA

- Patients Assessed and Given Pneumococcal Vaccination
  - Pharmacist screening/ordering
  - Standing orders approved by Medical Staff
  - Nurse vaccinates within 24 hours of admission
- Pneumonia Patients Whose Initial Emergency Room Blood Culture Was Performed Prior To The Administration Of The First Hospital Dose Of Antibiotics
- Pneumonia Patients Given Smoking Cessation Advice/Counseling
PNEUMOCOCCAL/INFLUENZA

• Pneumonia Patients Given Initial Antibiotic(s) within 6 Hours After Arrival
• Pneumonia Patients Given the Most Appropriate Initial Antibiotic(s)
  • Order set development and maintenance
• Pneumonia Patients Assessed and Given Influenza Vaccination
  • Seasonal
  • Standing orders approved by Medical Staff

STROKE

• Order set development
• Interventions
  • Stroke Patients with Deep Vein Thrombosis (DVT) Prophylaxis
  • Discharged on Antithrombotic Therapy
  • Anticoagulation Therapy for Atrial Fibrillation/Flutter
  • Thrombolytic Therapy
  • Antithrombotic Therapy by End of Hospital Day Two
  • Discharged on Statin Medication
  • Stroke Education

JGHT COMMISSION STANDARDS

National Patient Safety Goals (NPSGs)

• NPSG 03.06.01
  • Medication Reconciliation
• NPSG 03.05.01
  • Anticoagulation Management

MEDICATION RECONCILIATION

• Obtain information on the medications the patient is currently taking when he or she is admitted to the hospital or is seen in an outpatient setting.
  • Medication history upon admission
• Compare the medication information the patient brought to the hospital with the medications ordered for the patient by the hospital to identify & resolve discrepancies.
  • Admission orders match home meds
  • Medication therapy appropriateness throughout hospital stay

ANTICOAGULATION MANAGEMENT

• Written approved protocols for initiation and maintenance of therapy
• Evaluate anticoagulation safety practices and take action, and measure effectiveness
• Assess baseline INR for all patient’s receiving warfarin
• Written policy addresses baseline and ongoing lab tests for anticoagulants
Readmission Rates

- Targets
  - AMI, heart failure, pneumonia, hip and knee arthroplasty, and stroke
  - Many places target Heart Failure
- Medication counseling
- Medication accessibility
- Medication compliance
- Follow-up phone calls

Evolving Opportunities

- NPSG, Core Measures
- Pharmacokinetic Dosing, Therapeutic Drug Monitoring, IV to PO, Therapeutic Substitution

Contact Information
Niki Carver, Pharm.D.
UAMS Medical Center
Phone: 501-686-6694
4301 West Markham Street, Slot 571
Little Rock, AR  72205
Email: nlcarver@uams.edu

Expanding Clinical Services in a Community Hospital
Shannon Hays, Pharm.D.
Clinical Coordinator
White County Medical Center
Searcy, AR

Disclosures
- This presenter has nothing to disclose.

Objectives
- List components of the framework necessary for expanding clinical services.
- Describe methods of utilizing pharmacist-extenders in providing clinical services.
Goal:
Develop and disseminate a futuristic practice model that supports the effective use of pharmacists as direct patient care providers

www.ashp.org/PPMI

Objectives for the Pharmacy Practice Model Initiative

• Describe optimal pharmacy practice models that ensure safe, effective, efficient, and accountable medication-related care for patients.
• Identify patient-care-related services
• Foster understanding of and support for optimal pharmacy practice models by key groups

Objectives for the Pharmacy Practice Model Initiative

• Identify existing and future technologies required to support optimal pharmacy practice models in health-systems
• Identify specific actions that pharmacists should take to implement optimal practice models
• Determine the tools and resources need to implement optimal practice models

White County Medical Center

• 438 bed community hospital serving White, Jackson, Woodruff, Lonoke, Independence, and Prairie Counties
• Pharmacy staff:
  • 20 pharmacists, 13 technicians
• Central Pharmacy
• Technology
  • CPSI, Pyxis Connect
  • Pyxis Medstation 4000, PHACTS Vertical Carousel
  • PharmoPack Hi-Speed Medication Packager
  • Pyxis CII Safe
  • CareFusion MedMined with Patient Event Advisor and NurseLink

WCMC Pharmacy

• Drug-distribution-centered model
• Clinical-pharmacist-centered model
  • Clinical Coordinator added who handled all clinical activities
• Now a comprehensive model
  • Distributive, generalists, and specialist pharmacists
  • Provide practice sites for 6 COP faculty (providing specialist services)

Getting Started

• Establishing relationships
• Building the framework
• Create demand, select projects
Getting Started

- Establishing Relationships
  - Physicians (rounding, interdisciplinary committees)
  - Nurses (core measure teams, inservice education)
  - Case Managers (core measure teams, protocol development)
  - Colleges of Pharmacy (IPPE, APPE, service learning, committees) – taking students from 3 Colleges
  - Staff pharmacists (streamlining clinical consults, CE, pharmacy policies)

Getting Started

- Building framework
  - Ordering authority for routine interventions (CSF auto-stop, renal dosing, laboratory monitoring)
  - Providing education/building competency of pharmacy staff (parenteral nutrition, kinetics, renal dosing)

Getting Started

- Documentation in patient chart
  - Documenting notes in response to consults already in place
  - Physicians not accepting of documentation in permanent record for interventions
  - Developed “Pharmacy Care Note” to place non-urgent interventions in chart that are not part of the permanent record
    - Used for IV to PO, antimicrobial de-escalations, etc.
    - Once patient is discharged, note is removed from chart and returned to pharmacy. Provides some mechanism for feedback.

Getting Started

- Ordering authority for routine interventions
  - Lab monitoring:
    - serum creatinine for renal dosing of antibiotics (Levaquin) and LMWH
    - INR for Warfarin
    - CBC for LMWH, heparin to monitor platelets
    - Peak and/or trough for AMG, Vanc
  - CSF Auto-Stop:
    - Automatically discontinue CSFs when ANC reaches a certain level
  - Renal dosing:
    - Automatically change dose of Levaquin for renal function
  - IV to PO conversion:
    - Automatically change IV to PO route for certain medications when specific criteria are met

Getting Started

- Education and skill-building for pharmacy staff
  - Parenteral nutrition consults (CEs, case studies)
  - Kinetics consults (protocol development, CEs)
  - Renal dosing (protocol development)
  - CSF Auto-Stop (protocol development)
Getting Started

- Create demand/select project(s)
  - Be involved in hospital initiatives (cost savings, patient safety, quality, CMS core measures)
  - Work in collaboration with other departments
    - Nursing
    - Case management
    - Medical staff
- Select project(s)
  - Meet a need
  - Start simple
  - Outcome that is easily measured
  - Easy “sell” to Administration, Medical Staff, Nursing, etc.

WCMC Clinical Services

- Parenteral nutrition
- Kinetics
- CSF monitoring and discontinuation
- Renal dosing
- PNA/Flu vaccine protocol compliance
- Anticoagulant monitoring
- Discharge Follow-Up calls
- Antimicrobial stewardship
- IV to PO conversion

Keeping it Going

- Monitor and Report Progress
- Utilize Pharmacist-Extenders

Monitor and Report Progress

- Utilizing Pharmacist-Extenders
  - Technicians
    - Quality Improvement/Core Measures
  - Students
    - Quality Improvement/Core Measures (IPPE)
    - IV to PO conversion (APPE)
    - Call center (PSL, APPE)
    - Routine consults (kinetics, parenteral nutrition, renal dosing) (APPE)
    - Antimicrobial stewardship (APPE)
Utilizing Pharmacist-Extenders

- Expect much from your students
  - Students are like children; they will live up to your expectations.
- Be prepared to provide more guidance early in the experience.
  - Adequate training
  - Availability of preceptor(s)
- Accountability
  - To the preceptor
  - To the department
  - Ultimately, to the patient
- Let them see the "big picture"
  - Committee meetings
  - Shadowing other departments

Celebrate Success

- Measure and report
  - Economic outcomes
    - Cost savings
    - Decreased LOS
  - Patient care outcomes
    - Readmission Rates
    - Core Measures
  - Patient safety outcomes
    - ADRs reported
    - Medication Errors (especially "Near Misses")

Future Directions

- Residency Program (PGY1)
- Ambulatory Care Clinic (Diabetes)
- Medication Reconciliation
- Continue to expand clinical faculty sites
  - Cardiology
  - Surgery
  - Med/Surg
  - 340B Optimization
  - Bedside Barcoding

Questions?

Contact Information

White County Medical Center
Phone: 501-380-1384
3214 East Race Ave
Searcy, AR 72143
Email: shays@wcmc.org

Development and Implementation of Clinical Pharmacy Services in Primary Care

Melanie Claborn, Pharm.D.
Assistant Professor of Pharmacy Practice
University of Arkansas for Medical Sciences
Clinical Pharmacy Specialist
Veterans Healthcare System of the Ozarks
 Disclosure

This presenter has no conflicts of interest to disclose.

Objective

Discuss the development and implementation of clinical pharmacy services in primary care at a federal facility.

Background

- National organizations have identified the optimal management of chronic disease states through education and appropriate pharmacotherapy as a public health issue.
- Pharmacists have been shown to have a positive impact on patient care outcomes:
  - Monitoring treatment plans
  - Educating patients and providers
  - Promoting cost effective therapy

Information about the service

- Ambulatory Care/Primary Care
- Named the pharmcare clinic
- Clinic protocols were developed
- Scope of Practice-prescribing authority within the VA
- Disease state management for short term-hyperlipidemia, hypertension, diabetes, anticoagulation
- Follow guidelines for the treatment of the specific disease states

Implementing the service

- Pharmacy management assessed what types of services were needed
- Tailored to the type of service the faculty member had an interest
- Preferred an employee with residency training in ambulatory care
- Performance measures at the VA were reviewed
- Determined the numbers of patients that could potentially benefit from the service

Background

- Practice site:
  - Veterans Health Care System of the Ozarks (VHSO) in Fayetteville
  - Serves 53,000 unique Veterans annually
  - Outpatient care exceeds 500,000 visits per year and is provided at the Fayetteville campus and six community-based outpatient clinics (CBOC's)
  - Affiliated with the University of Arkansas for Medical Sciences (UAMS)
- Clinical pharmacy at this facility:
  - Clinical pharmacists: clinical coordinator, acute care, psych, primary care
  - Establishing a new clinical pharmacy position
  - UAMS had identified a need for faculty members in Northwest Arkansas in ACPE self-study
  - New position co-funded with UAMS
  - VA is physically located next to the UAMS NW campus
Evolution of the service

- Hired a co-funded UAMS faculty member in August 2008
- Scopes of practice approved for three clinical pharmacists in December 2008
- Pharmacists presented information about the clinic services at the medical staff meeting
- Pharmacists were trained in the VA scheduling software
- Outpatient consults from primary care providers only
- Consult placed in the electronic medical record (CPRS)
- Providers receive a notification when patients are scheduled to be seen

Example consult

Example consult (continued)

Evolution of the service

- First patient seen in February 2009
- Clinic appointments were originally available four half days per week
- Appointments have now expanded to availability from 8am-3:30pm each weekday
- Pharmacists complete appointment and lab scheduling
- More difficult to control patients (noncompliance, previous adverse reactions, etc)
- Documentation of each encounter in the electronic medical record
- Providers are notified of the therapeutic plan
- Pharmacy students on APPEs and IPPEs are involved

Experience With the Service

- Hypertension, 32%
- Diabetes Mellitus, 22%
- Hyperlipidemia, 38%
- Anticoagulation, 8%

Discussion-Future changes

- May add other disease states or pharmacy initiatives
- Need administrative help with appointment scheduling and message retrieval
- Changing consult criteria restricting to certain patients
- Incorporating PCMH/PACT model
- Present outcome data
- Additional support with a pharmacy resident
Helpful Tips
• Obtain support from management
• Obtain protocols from other facilities to have a starting point
• Start with a pilot program—one provider or one disease state
• Obtain outcomes from pilot and expand

Priceless Benefits
• Build trust with the patients
• Establish better relationships with nurses and providers
• Enhance patient safety and education
• Promote an improvement in patient’s quality of care

Summary
• Implementation of a new service requires support from all areas of the facility
• Established a better relationship with other members of the healthcare team
• This clinic has become a vital tool for the advancement of pharmacy practice in primary care at the VHSO

Contact Information
• Veterans Healthcare System of the Ozarks
• Phone: 479-443-4301 ext 65249
• 1100 North College (Pharmacy-119)
• Fayetteville, AR 72703
• Email: mclaborn@uams.edu, melanie.claborn2@va.gov