Implementation of Comprehensive Pharmacy Discharge Services and Other Transitional Care Services

Anne Szulczewski, PharmD, BCPS
Clinical Pharmacy Manager
Froedtert Hospital
Milwaukee, WI

Disclosure

I do not have a vested interest in or affiliation with any corporate organization offering financial support or grant monies for this continuing education activity, or any affiliation with an organization whose philosophy could potentially bias my presentation.

Objectives - Pharmacists

• Upon completion of this activity, the participant should be able to:
  – Describe the role and impact of pharmacist involvement in comprehensive discharge pharmacy services
  – List key steps in integrating the pharmacist into the discharge process
  – List quality and financial metrics that could be used to justify discharge pharmacy services
  – Discuss the implementation of additional pharmacy services to optimize transitions of care

Objectives - Technicians

• Upon completion of this activity, the participant should be able to:
  – Describe the role of pharmacy technicians in comprehensive discharge pharmacy services
  – List quality and financial metrics that could be used to justify discharge pharmacy services
  – Discuss the implementation of additional pharmacy services to optimize transitions of care

Presentation Overview

• Evidence
• Froedtert Hospital Background
• Project PRIMED
  – Service justification and implementation
  – Pharmacist, technician, flow coordinator roles
  – Workflow
  – Results
• Other transitional care services

Transitions of Care

• Patients at risk for errors due to poor communication or information loss
• Up to 67% of patients have medication discrepancies upon admission
  – Between 11-59% of medication discrepancies have to potential to cause patient harm
• The majority of medication reconciliation interventions in literature involve pharmacists
Evidence

- One study found that 23% of patients discharged from teaching hospitals experienced an adverse event;
  - 72% were related to medications
  - 50% were preventable or ameliorable
- Pharmacist provided medication reconciliation and education at discharge can decrease the rate of:
  - Preventable adverse drug events
  - Medication-related readmissions
  - Emergency department use

Evidence

- Patient access to medications may be hampered
  - According to an observational study at an inner-city hospital, 22% of patients had not filled their discharge prescriptions at the time of follow-up
  - Reasons:
    - Long wait times at the pharmacy (63%)
    - High medication costs (35%)
    - Difficulties with transportation to a pharmacy (38%)
    - Difficulty understanding their new medication regimen (29%)

Pharmacy Practice Model Initiative (PPMI)

- Pharmacists should facilitate medication-related continuity of care
- Characteristics/activities essential to pharmacist-provided drug-therapy management in optimal pharmacy practice models:
  - Establishment of processes to ensure medication-related continuity of care for discharged patients
  - Provision of discharge education to patients

Smooth Sailing From Inpatient to Out...

Audience Participation

- How many of you are involved in transitions of care projects being implemented at your organizations?
  - Discharge medication reconciliation
  - Discharge medication education
  - Post-discharge phone calls or visits
  - Other?
Froedtert Hospital Description

- Integrated practice model
- Pharmacist staffing model that fosters continuity of care
- Pharmacist driven admission medication reconciliation since 2006
- Prior to discharge program, pharmacist provided medication education limited (warfarin, transplant)
- Three onsite outpatient pharmacies

Background

- Medication reconciliation has been an evolving process at Froedtert Hospital for a number of years
  - 2007 American Society of Health-System Pharmacy (ASHP) Best Practice Award winner for pharmacist driven process
  - Opportunity for improvement at discharge with change in utilization of Electronic Health Record (EHR)
- Readmission rate consistently above UHC benchmark
- Hospital wide initiatives targeting readmission

Project PRIMED
Pharmacist Reconciliation and Medication Education at Discharge

Goals of the project were three-fold:

1. Improve patient safety by demonstrating that pharmacists can reduce medication errors upon hospital discharge
   A. Reconciliation
   B. Education
2. Improve patient access to outpatient prescriptions by eliminating common barriers that delay the filling of discharge prescriptions
3. Financially justify additional pharmacists for hospital-wide implementation of project PRIMED by generating revenue for the onsite outpatient pharmacies

Medication Reconciliation Process

Admission
- Medication history collected
- Compare medication history to inpatient orders
- Completed by provider as part of H&P and by pharmacist

Discharge
- Medication adjustments are made
  - New medications
  - Discontinued
  - Dose adjustments

During Admission
- Assess admission history/allergies
- Review progress notes
- Look at the “whole” patient
- Compare prior to admission medications to discharge orders
- Double-checked by pharmacist

Our Discharge Story

Start Small

- Initial pilot
  - Month long with one pharmacist covering two units
    - Focus exclusively on discharge
    - Collected intervention data as well as prescription capture
  - Two discharge pharmacist positions were approved based on quality data and potential for increase in prescription capture
**Staffing Model - Pilot**

![Diagram of staffing model]

**Staffing Model – Initial Pilot**

- Discharge pharmacist responsibilities
  - Medication reconciliation
  - Medication education
  - Assisting with prescription capture
  - Services provided Mon-Fri only
- Inpatient pharmacist responsibilities
  - Admission histories and reconciliation
  - Order verification
  - Drug monitoring (kinetics, warfarin, etc)
  - Patient care rounding
  - Teaching/precepting

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**Intervention Results (3 months)**

- Approximately 50% of patients required at least one intervention
- Intervention Type
  - Correct Drug, but dosage error (40%)
  - Unnecessary Medication (25%)
  - Missing Medication (18%)
  - Incorrect Drug (4%)
  - Other (13%)

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**Potential Error Severity (Pilot)**

- A (30%)
- B (14%)
- C (10%)
- D (28%)
- E (7%)
- F (8%)
- G (2%)
- H (0%)
- I (0%)

45% at Level D or higher (required intervention to preclude harm)

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**NCC MERP Index for Categorizing Medication Errors**

<table>
<thead>
<tr>
<th>Error Severity</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Antibiotic prescriptions were entered for the wrong patient at discharge. Patient had already left the hospital without the medications when the error was discovered.</td>
</tr>
<tr>
<td>G</td>
<td>Patient was on insulin glargine 20 units BID at home. Patient presented with hypoglycemia, and switched to 12 units nightly while inpatient. Home regimen of insulin glargine 20 units BID was restarted at discharge.</td>
</tr>
<tr>
<td>I</td>
<td>Provider discontinued divalproex in discharge navigator (a home medication that patient was receiving during admission). Per the discharge summary MD did not want patient going home on diltiazem (but this was accidentally continued in discharge navigator).</td>
</tr>
</tbody>
</table>
Prescription Capture Results

- Baseline prescription capture rate was low
- **300% increase in our capture rate of discharge scripts**
- **60% of patients** that have a discharge pharmacist encounter, and have prescriptions to be filled at a pharmacy, are choosing to fill at Froedtert

Financial Justification

- 76% of patients discharged have scripts to be filled
- If we continue to capture only 50% of all discharges (=12,000 discharges/year)
  - 76% of those will have scripts to fill = 9120 discharges
  - 9120 x 3 rxs = **$1,422,720 in additional revenue**
- Total Pharmacist + Technician Salary:
  - 6 Pharmacists
  - 3 Technicians
  - Total = **$900,000 in salary cost**
- Net gain: $1,422,720 - $900,000 = **$522,720**

Pharmacist Time

- Total Time Spent/patient = 52 minutes
  - Educating patients = 13 minutes
  - Prescription processing = 12 minutes
  - Reconciliation, Coordination, Troubleshooting = 27 minutes

Cost Avoidance

<table>
<thead>
<tr>
<th>Drug Interaction</th>
<th>Avg Cost Avoided per Recommendation</th>
<th># of Interventions</th>
<th>Cost Avoidance</th>
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</thead>
<tbody>
<tr>
<td>Drug Interaction</td>
<td>$1,647</td>
<td>17</td>
<td>$27,999</td>
</tr>
<tr>
<td>Prevent or manage drug allergy</td>
<td>$1,375</td>
<td>2</td>
<td>$2,750</td>
</tr>
<tr>
<td>Adjust dosage or frequency</td>
<td>$1,188</td>
<td>121</td>
<td>$143,748</td>
</tr>
<tr>
<td>Unintended diagnosis</td>
<td>$1,108</td>
<td>74</td>
<td>$85,950</td>
</tr>
<tr>
<td>Prevent or manage adverse drug event</td>
<td>$1,086</td>
<td>25</td>
<td>$27,450</td>
</tr>
<tr>
<td>Drug not indicated</td>
<td>$731</td>
<td>41</td>
<td>$29,844</td>
</tr>
<tr>
<td>Duplication of Therapy</td>
<td>$365</td>
<td>20</td>
<td>$8,320</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$318,987</strong></td>
</tr>
</tbody>
</table>

Average cost avoidance per pharmacist day: $1,993
Annualized potential cost avoidance for house-wide coverage: $4,364,670

Our Discharge Story – Hospital-wide Implementation

- **APPROVED!**
  - Additional 4 FTE Pharmacist (6 total)
  - 3 FTE Technician
- Return on investment (ROI) analysis
  - Target a 1.8:1 ROI
    - Goal to capture 50% of patients with prescriptions
    - Average 3 new prescriptions at discharge
    - Disproportionate share institution, “340B”

Discharge Program Full Implementation
Staffing Model Changes

- Incorporate discharge responsibilities into decentral pharmacist workflow
  - Consistent with integrated practice model
  - Decrease time spent on discharge reconciliation and coordination (27 minutes/patient in pilot)
- Target AM shift patient to pharmacist ratio of less than 30:1
- Expand to weekend/holiday coverage
- Utilize pharmacy residents and students for additional support

Planning - Workload Data

- Number of discharges
  - Unit
  - Day of week
  - Time of day
- Other workload statistics
  - Admissions
  - Order volume
  - Clinical monitoring
  - Rounding responsibility

Discharge Workflow

Day of Discharge

- Complete medication reconciliation (following provider)
- Evaluate discharge prescriptions and send to outpatient pharmacy
- Document discharge medication list

Discharge Tools

- Indicates when reconciliation completed by provider
- Expected discharge date may change throughout patient stay

Pharmacist Documentation

- Medication
  - Current Discharge Medication List
  - START using these medications
    - metoprolol succinate ER (Sandoz) 250 mg capsules
      - Take 1 capsule by mouth every 8 hours
    - QD 50 capsules, Amoxicillin 375 mg
    - cyanocobalamin 5%. 500 units/mL parenteral solution
      - Take 1 tablet by mouth twice daily or as needed
    - dextrose 5% in water for injection
      - Take 500 mL by mouth daily
    - isosorbide dinitrate (Isordil) 10 mg tablets
      - Take 2 tablets by mouth twice daily
    - oxymorphone hydrochloride (OxyContin) 10 mg tablets
      - Take 2 tablets by mouth every 8 hours

- Provide patient education and medication list
- Document patient education

Discharge Workflow

Days Prior to Discharge

- Identify interest in using prescription service
- Collect insurance information and identify coverage issues
- Identify medications requiring prior authorization

Day of Discharge

- Provide patient education and medication list
- Deliver medications and collect payment
- Patient picks up medication from pharmacy
- Document patient education
Bedside Meds Program

- Improve patient access to medications by filling prescriptions prior to discharge
- Bedside delivery
- Contributes to sustainability of the service

Discharge Technician Role

- Responsibilities
  - Processing of discharge prescriptions through outpatient computer system
  - Collection of insurance information
  - Prescription delivery
  - Collection of payment
  - Coordination and prioritization
- Three technicians work centrally from outpatient pharmacy

Discharge Technician Communication

Discharge Flow Coordinator Role

- Responsible for patient throughput on the unit
- Primary responsibility around discharge
  - Leadership and communication
  - Coordination of discharge
  - Provide discharge instructions to patient
- FTE neutral
- M-F, daytime hours only

Results and Metrics

Results – Reconciliation

Results - Reconciliation
Results – Education

Most Common Intervention Types

Most Common Drug Classes

Results – Prescription Capture

Results – Patient Satisfaction

Keys to Success

- Previous involvement of inpatient pharmacists in admission medication reconciliation
- Discharge process already a key focus of leaders
- Low utilization of retail pharmacy at discharge
- Disproportionate share hospital (340B)
- Initial pilot required minimal resources
Barrier and Challenges

• Communication
• Timing and workload variation
• Electronic medical record limitations
• Access to care
• Prescription turn-around-time
• Coordination of delivery

Program Optimizations

• Policy Revisions
  - Allow pharmacists to make modifications to prescription orders and medication list without physician order
    • Quantity and duration errors
    • “Reverse” therapeutic interchange
    • Renal dose adjustments
    • Warfarin dosing
  - Goal to save time and avoid errors

Program Optimizations

• Discharge Communication Tool
  - Electronic “sticky note” available to all disciplines
  - Standardize communication across units

Program Optimization

• Technician Staffing Model
  - Expanded role
    • Prior authorization facilitation
    • Marketing services to patients
  - Stationed on inpatient units rather than outpatient pharmacy
  - Improved connect with providers and decentral pharmacists

Program Optimization

• Use of Students as extenders
  - Increased number of student rotations
  - Require at least 6 “patient touches” per day
    • Admission history
    • Discharge medication teaching
    • First dose medication teaching
  • Intern program

Other Care Transitions Projects
Mail Order Home Delivery Service

- Initially targeted patient populations (Oncology, Transplant)
- Adherence monitoring and patient counseling
- Increased medication adherence, blood pressure and glucose control in transplant patients enrolled in service at one year
- Expanded service to all patients

Discharge Communication

- Improve communication at discharge between discharging providers and primary care providers
  - Standardization of contents of discharge summary
  - Accuracy of medication list
    - Reviewed by pharmacist
    - Standard, usable format (start/continue/stop)
  - Consistent communication and retrieval

Post-Discharge Follow-up

- Medication related readmission assessment tool (MRRAT)
  - Tool to identify patients at high risk for readmission on internal medicine unit
  - Enroll patients in Medication Therapy Management (MTM) clinic
  - Pharmacy resident driven

Medical Home Transitional Care Model

- Multidisciplinary Transition Team
  - Nurse Practitioner
  - Case Manager
  - Nurse
  - Pharmacist
  - Home Health
- Stratification of patients at high risk for utilization of emergency department and readmission
- Care planning and scheduled follow-up
- Address social issues
- Expanded availability
- Care for patients within medical home

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References

Questions?

Anne Szulczewski, PharmD, BCPS
Froedtert Hospital
aszuleze@froedterthealth.org