TRANSITIONS OF CARE: COLLABORATIVE CARE TO REDUCE HOSPITAL READMISSION RATES

Speakers
Stacey Frede, PharmD, BCACP, CDE
Manager of Clinical Program Development, The Kroger Co.

Eric Wright, PharmD, MPH,
Co-Director and Professor, Geisinger Center for Pharmacy Innovation and Outcomes
Objectives

1. Recognize the challenges and systemic barriers that hinder effective transitions of care in patients with chronic illnesses.
2. Understand how patient health outcomes can be improved and affected by transitions of care from the hospital to community pharmacy settings.
3. Identify strategies to improve transitions across health care settings to reduce hospital readmission rates.
Self-Assessment Question #1

Barriers that hinder effective Transitions of Care include:

a) HIE Interoperability
b) Effective HC provider communication
c) Data Agreements
d) Costs of care
e) All of the Above
Self-Assessment Question #2

Which of the following communication methods/modes were used by Kroger and/or Geisinger to transmit hospital information to community pharmacists?

a) Secure E-mail
b) Phone
c) Fax
d) B and C
e) All of the above
Self-Assessment Question #3

Strategies to improve transitions of care involving pharmacists include:

a) Inpatient to outpatient pharmacist communication
b) Telephone follow-up within 7 days post discharge
c) In-home visits
d) Face-to face medication consultation
e) All of the Above
Outline

Introduction
Kroger Experience
Geisinger Experience
Recent Results and Future Directions
Self-Assessment Questions
Discussion
Hospital Readmissions

- Historically, 20% of Medicare patients are readmitted to the hospital within 30 days of discharge
- Readmissions cost $25 billion each year
- In October of 2012, The Hospital Readmission Reduction Program (HRRP) began penalizing hospitals for excess 30 day readmissions in specific high risk groups

Excess readmissions = \# readmissions / \# “predicted”

## HRRP Summary

<table>
<thead>
<tr>
<th>Year Penalties Applied</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dx of initial hospitalization</td>
<td>MI, CHF, Pneumonia</td>
<td>MI, CHF, Pneumonia</td>
<td>MI, CHF, Pneumonia</td>
<td>COPD</td>
<td>Hip or knee replacement</td>
</tr>
<tr>
<td></td>
<td>MI, CHF, Pneumonia</td>
<td>MI, CHF, Pneumonia</td>
<td>MI, CHF, Pneumonia</td>
<td>COPD</td>
<td>Hip or knee replacement</td>
</tr>
<tr>
<td></td>
<td>MI, CHF, Pneumonia</td>
<td>MI, CHF, Pneumonia</td>
<td>MI, CHF, Pneumonia</td>
<td>COPD</td>
<td>Hip or knee replacement, CABG</td>
</tr>
</tbody>
</table>

### Penalties: Percentage reduction in base payments on all Medicare inpatient admissions

<table>
<thead>
<tr>
<th>Maximum rate of penalty</th>
<th>1%</th>
<th>2%</th>
<th>3%</th>
<th>3%</th>
<th>3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of hospitals penalized</td>
<td>64%</td>
<td>66%</td>
<td>78%</td>
<td>78%</td>
<td>79%</td>
</tr>
<tr>
<td>Estimate of total penalties</td>
<td>$290 million</td>
<td>$227 million</td>
<td>$428 million</td>
<td>$420 million</td>
<td>$528 million</td>
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</tbody>
</table>

Pharmacist Role in Addressing Readmissions

• Major reasons for readmission
  • Medication errors
  • Adverse drug reactions
  • Medication nonadherence

• Pharmacists are needed in transitions of care process
  • Community pharmacists are already touching patients post-discharge
  • Community pharmacists have established relationships with patients
  • Community pharmacists have understanding of pre-admission medications

Barriers to Pharmacists Addressing Readmissions

- Variable inpatient pharmacist role in discharge process
- Community pharmacist lack of knowledge of recent hospitalization
- Community pharmacist role as provider in healthcare team not established
- No incentive to provide direct counseling/MTM
- Technology interoperability
- Expense
We Still Have to Prove It

Multiple projects have demonstrated effectiveness in reducing hospital readmissions

**Project RED** (AHRQ/Boston University)

**Medication REACH** (Einstein Healthcare Network)

**STAAR** (Massachusetts/IHI)

- Variable use of pharmacists
- Collaboration for inpatient/outpatient pharmacists opportunity
- Outcomes of pharmacist involvement need to be evaluated


Kroger Experience
Cincinnati

Stacey M. Frede, PharmD, BCACP, CDE
Manager of Clinical Program Development
The Kroger Co.

*Supported by a grant from the National Association of Chain Drug Stores (NACDS) Foundation
Kroger Pharmacy Snapshot

- 2000+ Pharmacies
  - 7000+ Pharmacists

- Our Clinical Services
  - Travel and adult vaccinations
  - Wellness
    » Smoking Cessation
    » Fitness, Nutrition, Weight Management
    » Health Screenings/POCT
  - Medication Synchronization
  - Medication Therapy Management (MTM)
  - Disease Management
    » Diabetes
    » Hypertension
TRANSITIONS OF CARE WORK

Objective: Decrease 30 day readmission rates
- 2 hospitals, 9 pharmacies
- Patient identification and study consent at the hospital by discharge coordinators
- Faxed communication- discharge summary
- Face-to-face pharmacist visit
- Telephonic follow-up

TransitionRx: Impact of community pharmacy postdischarge medication therapy management on hospital readmission rate
Heidi R. Luder; Stacey M. Frede; James A. Kirby; Kelly Epplen; Teresa Cavanaugh; Jill E. Martin-Boone; Wayne F. Conrad; Diane Kuhlmann; Pamela C. Heaton
**TRANSITIONSRx**

<table>
<thead>
<tr>
<th></th>
<th>Usual Care (n=60)</th>
<th>Pharmacist (n=29)</th>
<th>Adjusted OR 95%CI p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-day Readmissions</td>
<td>12 (20%)</td>
<td>2 (6.9%)</td>
<td>0.073 (0.008- 0.647) p=0.019</td>
</tr>
</tbody>
</table>

Pharmacists averaged 7 interventions per patient
- 41% required consultation with a prescriber
  - 18 new therapies were initiated
  - 10 unnecessary therapies were discontinued
  - 9 medications were changed
  - 8 doses of medication were altered

---

TRADITIONAL SYSTEM

http://www.bayviewvillageeyecare.com/artificial-tears.html
ULTIMATE GOAL
TRANSITIONRx EXPANSION TEAM

- Health Council: Sheri Vogel, Lori McAleer, Richard Shonk, Kate Haralson, Tiffany Mattingly
- HealthBridge: David Burch, Tim Mattingly
- College of Pharmacy: Heidi Luder, Pam Heaton
- Kroger Pharmacy: Natalie Kunze, Jim Kirby, Suzi Francis

- This project was funded by the National Association of Chain Drugs Stores Foundation (NACDS) Foundation
Objectives

- **Primary**: to determine the impact of a community pharmacy-based transition of care program on 30 day-all-cause hospital readmission rate

- **Secondary**: to measure:
  1) the number and type of pharmacists interventions,
  2) patient satisfaction with discharge and the pharmacist’s intervention,
  3) primary and secondary medication non-adherence
CINCINNATI EXPERIENCE

– Sites expanded:
  • 3 Health Systems
  • 60 Pharmacies, 200 Pharmacists

– Addressed Barriers from Pilot:
  • Consenting Process
    » Use of Research Center
  • Paper Communication System
    » hbDIRECT transmission of Continuity of Care Document (CCD)
    » Health Information Exchange (HIE) transmission of data back to primary care provider
    » Readmission data from HIE
CINCINNATI EXPERIENCE

– Inclusion criteria:
  • Greater than 18 years of age
  • English-speaking
  • Discharged to home
  • Diagnosis of heart failure, pneumonia, MI, diabetes or COPD

– Exclusion criteria:
  • Cognitive impairment
  • Discharged to long term care facility

http://www.ihi.org/topics/adesmedicationreconciliation/Pages/default.aspx accessed 9.21.16
Hospital
Patient is referred to study upon discharge

UCCP Call Center
Consents, randomizes, and enrolls patient in study

UCCP Call Center
Schedules appointment within 7 days of discharge

Kroger Pharmacy
Patient presents for MTM appointment

Kroger Pharmacy
Communicate with prescriber/PCP as needed; Document medication problems and interventions from appointment

Kroger Pharmacy
Pharmacist calls patient for follow-up 2 weeks after appointment

Kroger Pharmacy
Alerted if patient is readmitted to hospital or the ER

UCCP Call Center
Calls Control Patient to complete survey within 30 days

Continuity of Care Document sent to Call Center via hbDIRECT; passed to Pharmacy for Intervention patients
Hospital
Eligible patient is identified, consented, randomized, and enrolled in study

UCCP Call Center
Schedules appointment within 7 days of discharge

Kroger Pharmacy
Patient presents for MTM appointment

Kroger Pharmacy
Communicate with prescriber/PCP as needed; Document medication problems and interventions from appointment

Kroger Pharmacy
Pharmacist calls patient for follow-up 2 weeks after appointment

UCCP Call Center
Calls Control Patient to complete survey within 30 days

Kroger Pharmacy
Alerted if patient is readmitted to hospital or the ER

Continuity of Care Document sent to Call Center (all) and Pharmacy (intervention) via hbDIRECT

Alert transmitted for hospital visit to Call Center and Pharmacy (intervention) via hbDIRECT
### Continuity of Care Document

**Patient:** Carwash Xtrain, Jr.
82 PALACE TRL # 2
MAINEVILLE, OH, 45039
tel:+1-513-111-2222

**MRN:** UCA1468100

**Birthdate:** December 7, 1985

**Sex:** Female

**Guardian:** Next of Kin

**Race:** White or Caucasian

**Ethnicity:** Not Hispanic or Latino

**Language:** ENG (preferred)

### Active Allergies and Adverse Reactions

<table>
<thead>
<tr>
<th>Allergen</th>
<th>Noted Date</th>
<th>Severity</th>
<th>Reactions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef Containing Products</td>
<td>06/24/2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peanut</td>
<td>10/18/2012</td>
<td></td>
<td>Itching</td>
<td></td>
</tr>
<tr>
<td>Penicillins</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfa (Sulfonamide Antibiotics)</td>
<td>High</td>
<td></td>
<td>Anaphylaxis</td>
<td></td>
</tr>
</tbody>
</table>

### Current Medications

<table>
<thead>
<tr>
<th>Prescription</th>
<th>Sig.</th>
<th>Disp.</th>
<th>Refills</th>
<th>Start Date</th>
<th>End Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>aspirin (ASPIRIN LOW DOSE) 81 MG EC tablet</td>
<td>Take 1 tablet (81 mg total) by mouth daily.</td>
<td>30 tablet</td>
<td>0</td>
<td>09/16/2014</td>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>fexofenadine (ALLEGRA) 180 MG tablet</td>
<td>Take 180 mg by mouth daily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fluticasone-salmeterol (ADVAIR DISKUS)</td>
<td>Inhal 1 puff into the lungs 2 times a day.</td>
<td>1 inhaler</td>
<td>3</td>
<td>09/27/2012</td>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>Injection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>insulin lispro (HUMALOG) 100 unit/mL</td>
<td>Inject subcutaneously 3 times a day with meals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>insulin lispro protamine-insulin lispro</td>
<td>Inject 2 Units subcutaneously 2 times a day with meals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(HUMALOG 50/50) 100 unit/mL (50-50) InPn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>insulin lispro protamine-insulin lispro</td>
<td>Inject subcutaneously 2 times a day with meals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(HUMALOG MIX 75/25) 100 unit/mL (75-25)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Susp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>multivitamin capsule</td>
<td>Take 1 capsule by mouth daily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>norethindrone-ethinyl estradiol (MICROGESTIN 1/20) 1-20 mg-mcg per tablet</td>
<td>Take 1 tablet by mouth daily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>norethindrone-ethinyl estradiol-iron (MICROGESTIN FE 1.5/30, 28, 1.5 mg-30 mcg (21)/75 mg (7) tablet</td>
<td>Take 1 tablet by mouth daily.</td>
<td>28 tablet</td>
<td>0</td>
<td>01/23/2015</td>
<td></td>
<td>Active</td>
</tr>
</tbody>
</table>
PHARMACY INTERVENTION

- Pharmacist provided a Comprehensive Medication Review (CMR)
- Focused education on:
  - Acute issues as priority
  - “Red Flag” warning signs
  - Common medication errors with transitions
  - Medication adherence
  - Drug or dietary interactions
- Sent home with PMR, MAP, written education
- Follow-up Call- 2 weeks out
CLOSING THE GAPS

- Documented visit and interventions in Pharmacy system
- Recommendations and updated PMR sent to PCP
  - hbDirect
  - Phone/Fax
- PMR and inactive medication list shared with primary pharmacy
  - Phone/Fax
# Readmission Alerts

![HealthBridge Logo](image)

**HB Alert Table**

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Birth Date</th>
<th>Patient ID</th>
<th>Admit Date</th>
<th>Facility</th>
<th>Visit Type</th>
<th>Diagnosis Code</th>
<th>Diagnosis Description</th>
<th>Chief Complaint</th>
<th>MRN</th>
<th>Patient Home Phone</th>
<th>Physician Name</th>
<th>Physician NPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirk, James T</td>
<td>03/22/2233</td>
<td>123456789</td>
<td>04/28/2014</td>
<td>UCH (UCMedicalCenter)</td>
<td>E</td>
<td>160555</td>
<td>Suicidal</td>
<td>Suicidal</td>
<td>0987654321</td>
<td>555-555-5555</td>
<td>McCoy, Leonard</td>
<td>9999999999</td>
</tr>
<tr>
<td>Uhura, Nyota</td>
<td>01/19/2233</td>
<td>234234234</td>
<td>04/28/2014</td>
<td>UCH (UCMedicalCenter)</td>
<td>E</td>
<td>464.00</td>
<td>Acute laryngitis without mention of obstruction</td>
<td>Laryngitis</td>
<td>0789789789</td>
<td>555-555-5555</td>
<td>McCoy, Leonard</td>
<td>9999999999</td>
</tr>
<tr>
<td>Scott, Montgomery</td>
<td>03/03/2222</td>
<td>234234234</td>
<td>04/28/2014</td>
<td>UCH (UCMedicalCenter)</td>
<td>E</td>
<td>308.9</td>
<td>Acute stress react NOS</td>
<td>Stress</td>
<td>0456456456</td>
<td>555-555-5555</td>
<td>McCoy, Leonard</td>
<td>9999999999</td>
</tr>
<tr>
<td>Sulu, Hikaru</td>
<td>06/24/2230</td>
<td>234234234</td>
<td>04/28/2014</td>
<td>UCH (UCMedicalCenter)</td>
<td>E</td>
<td>879.6</td>
<td>Open wound of trunk NEC</td>
<td>Stab Wound</td>
<td>0432432432</td>
<td>555-555-5555</td>
<td>McCoy, Leonard</td>
<td>9999999999</td>
</tr>
</tbody>
</table>
Preliminary Results

Enrollment:
- July 2015- Jan 2017
- Total: 403 enrolled
- Control: 189
- Intervention: 214
  - 65 patients completed intervention
## Baseline Characteristics

<table>
<thead>
<tr>
<th>Measure</th>
<th>Kroger (n=214)</th>
<th>Control (n=189)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, in yrs., Mean (± SD)</td>
<td>60.3 (12.9)</td>
<td>63.2 (12.2)</td>
<td>0.02</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>103 (48.1%)</td>
<td>108 (57.1%)</td>
<td>0.04</td>
</tr>
<tr>
<td>Female</td>
<td>111 (51.9%)</td>
<td>81 (42.9%)</td>
<td></td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>172 (80.4%)</td>
<td>147 (77.8%)</td>
<td>0.42</td>
</tr>
<tr>
<td>Black</td>
<td>39 (18.2%)</td>
<td>35 (18.5%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3 (1.4%)</td>
<td>6 (3.2%)</td>
<td></td>
</tr>
<tr>
<td>Plan Type</td>
<td></td>
<td></td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Medicaid</td>
<td>31 (14.5%)</td>
<td>10 (5.3%)</td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>21 (9.8%)</td>
<td>24 (12.7%)</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>25 (11.7%)</td>
<td>19 (10.1%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>5 (2.3%)</td>
<td>6 (3.2%)</td>
<td></td>
</tr>
<tr>
<td>Length of index hospitalization in days, Mean (± SD)</td>
<td>6.23 (3.9)</td>
<td>6.23 (4.9)</td>
<td>1.00</td>
</tr>
<tr>
<td>Prior Hospitalization, Yes</td>
<td>43 (20.1%)</td>
<td>41 (21.7%)</td>
<td>0.40</td>
</tr>
</tbody>
</table>
PRELIMINARY RESULTS

Patients Enrolled by Disease State

- Pneumonia: 20%
- COPD: 23%
- MI: 17%
- DM: 12%
- CHF: 28%

Pharmacist Interventions
- 65 patients presented
  - 404 interventions
  - Avg. 6.2/patient
LESSONS LEARNED

- It is feasible for community pharmacies to partner with area hospitals to assist with transitions in care.
  - Pharmacists are ready, willing, and able to provide the much needed service; health systems are ready to partner
  - CCD is an effective communication tool – one-way!
- Building the relationships can be difficult
  - Approvals needed at multiple levels -- need a champion
  - Contracts took a long time
  - Time to enroll patients
  - Patients high no-show rate
  - HIE implementation
Barriers of HIE Implementation in the Community

- Data Governance Agreements
- Patient Consent
- Technical Difficulties
- Physician Communication
- Burden of Documentation
- Cost and Sustainability
THE NEW NORMAL

• Provider status
  • Patient Impact

• Interoperable EHR
  • Connectivity and alerting

• Standardized documentation
  • HL7 Consolidated Clinical Document Architecture (C-CDA)
  • Discrete clinical coding
SYSTEMATIZED NOMENCLATURE OF MEDICINE
CLINICAL TERMS (SNOMED CT)

- Becoming the gold standard for documenting and communicating patient care information
- Mapped to medication-related terms & definitions
- Integration of SNOMED CT into electronic medical record (EMR) systems supports interoperability by facilitating the sharing of patient information among information systems

<table>
<thead>
<tr>
<th>SNOMED CT Concept</th>
<th>SNOMED CT ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred by primary care physician</td>
<td>2021000124102</td>
</tr>
<tr>
<td>Patient unable to obtain medication</td>
<td>429611000124105</td>
</tr>
<tr>
<td>Medication dose too low</td>
<td>448152000</td>
</tr>
<tr>
<td>Hypertension medication review</td>
<td>473225006</td>
</tr>
<tr>
<td>Rheumatologic disorder education</td>
<td>413084000</td>
</tr>
<tr>
<td>Recommendation to increase dose</td>
<td>428811000124101</td>
</tr>
<tr>
<td>Medication reconciliation by pharmacist</td>
<td>428701000124107</td>
</tr>
<tr>
<td>Hemoglobin A1c &lt;7%</td>
<td>165679005</td>
</tr>
<tr>
<td>Adverse reaction to drug</td>
<td>62014003</td>
</tr>
</tbody>
</table>

Outline

Introduction

Kroger Experience

Geisinger Experience

Recent Results and Future Directions

Self-Assessment Questions

Discussion
Geisinger Experience

Eric A. Wright, PharmD, MPH
Co-Director, Professor
Geisinger Center for Pharmacy Innovation and Outcomes

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Thank you to this Amazing Collaborative Team!

Geisinger
- Lorraine Tusing, BA
- Kelly Bolesta, PharmD
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- Jove Graham, PhD, MS
- Christina Gregor, BS
- Steve Gunderman, IT
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- Richard Martin, MD
- Charles Medico, PharmD, BCPS
- Dean Parry, RPh
- Rebecca Price, BS
- Jim Younkin, BS
- Lori Zaleski, RPh

Collaborators
- Rick Seipp, PharmD (Weis Markets)
- Bruce Citsay, PharmD (Weis Markets)
- John Fiacco, RPh (Medicine Shoppe)
- Bette McDonald, RPh (Medicine Shoppe)
- Karen Robinson, MSc, PhD (Johns Hopkins)
“Make my hospital right, make it the best.”

Abigail Geisinger
1827-1921
Geisinger - an Integrated Healthcare Delivery System
Geisinger - an Integrated Healthcare Delivery System
Geisinger Initiatives In Transitions

- Discharge Medication Program
- Case Nurse Management (Health Navigator)
- Transition bundle
- Pharmacist Medication Reconciliation
- Post-discharge Ambulatory Care Pharmacist Management
- “Admission, Discharge, Transfer” (ADT) alerts to PC providers through Health Exchange

Current System

Hospital Discharge

Community Pharmacy

Geisinger
Study Aims

1) Demonstrate the feasibility of connecting inpatient pharmacists to outpatient pharmacists using technology

2) To determine the impact of inpatient to outpatient pharmacist collaboration on clinical (E.g. readmissions, adherence) and economic outcomes among a group of high risk patients
Methods

Design

• Prospective quasi-experimental study
• IRB-approved with waiver of informed consent

Population

• >18 years
• Patients with high-risk conditions
  • HF, MI, pneumonia, COPD, Diabetes
• Discharged to home from one of 4 hospitals
• EHR preferred pharmacy is participating in study
Methods

**Intervention**

- Inpatient pharmacist medication reconciliation and counseling prior to discharge
- Send Direct Secure Messaging (E-mail) to community pharmacist
- Community pharmacist counseling/MTM
  - 5 encounters - Day of discharge, call within 7 days, monthly x 3
- Toolkit and education for providing services

**Control** = Usual care

**Outcome**

- 30-day all-cause readmissions
- Medication adherence
- Return on Investment
- Pharmacist perceptions
Revised System

Hospital Discharge

1) Perform Medication Reconciliation
2) Perform Discharge Counseling
3) Write EHR note
4) Copy note from EHR
5) Paste into Secure message (Orion)
6) Send to retail pharmacist

Community Pharmacy

1) Message received in Orion inbox
2) Fax alert triggered
3) Secure Message read by pharmacist
4) Pharmacist assures medication pick-up, provides counseling and medication list
5) Follow-up at 3-7 days (call), 1, 2 and 3 months following discharge
# Progress Note

**Services declined (Date and reason here):**

**SELECTION #:** 0

(1 = discharge date, 2 = 3-7 days post-discharge, 3 = 30 days post-discharge, 4 = 60 days post-discharge, 5 = 90 days post-discharge)

**Discharge Date:** 3/23/16

**Call Log/attempts:**

<table>
<thead>
<tr>
<th>#1 (Date/Rx initial)</th>
<th>#2 (Date/Rx initial)</th>
<th>#3 (Date/Rx initial)</th>
<th>#4 (Date/Rx initial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/23/16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Communicated with (circle) Patient Caregiver & name:** Wife

**Session Date:** 3/23/16

Pharmacist

**Venue (in-person, telephonic):** Telephonic

**Length of visit (minutes):** 20

---

**Checklist – Please answer all these questions. Fill in the circles.**

<table>
<thead>
<tr>
<th>Prompts</th>
<th>Yes</th>
<th>No</th>
<th>Not asked/unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive sodium and alcohol intake?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does patient have heart failure symptoms?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any drug-disease or drug-drug interactions? See toolkit.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does patient have trouble with medication adherence?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug regimen for heart failure is appropriate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remind patient to check weight (call MD if weight gain)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provided Medication List/Schedule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verified patient lab and provider follow-up</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:***

- No salt/social harmony
- Acetaminophen/cipro, C/O cronic and diabetic.
- Gt + only thisth of meds
- Yes daily * prompted pt to go to hospital
- Gos to Dr. Loveluck today 3/23/16

---

**Primary Discharge Diagnosis:** Heart Failure

Today’s resting pulse:

Today’s BP reading:

Today’s Weight:

Previous 3 recorded weights/dates here:

<table>
<thead>
<tr>
<th>Date</th>
<th>Weight (lb)</th>
</tr>
</thead>
</table>

**Findings:**

- Pt went to keep in ambulance - gall bladder issues.
- (H/E) Pt has additional needs presented + some to. He has a very good understanding of meds. Pt has multipled health issues C/O, Diabetes, (delayed) **
Inclusion

Population
- Discharge to home from a Geisinger hospital
- Age 18-89 years at time of discharge
- Diagnosis of heart failure, myocardial infarction, pneumonia, or chronic obstructive pulmonary disease, diabetes

Intervention
- Participating pharmacy
  - Verbal confirmation from patient

Intention to treat: N = 615
Per protocol: n = 374

Control
- Non participating pharmacy

Control (5:1)
- Intention to treat: N = 3075
- Per protocol: n = 1870

Intervention
- 3,507 Screened
- 819 “touches”
- 618 D/C to home

Matched comparison
- Total available control cohort 42,184
- Matched 5:1
Matching
## Results – Matching

<table>
<thead>
<tr>
<th></th>
<th>Intervention (ITT) (n=615)</th>
<th>Comparison (ITT) (n=3075)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, Mean (SD)</strong></td>
<td>67 (13)</td>
<td>66 (14)</td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>53%</td>
<td>53%</td>
</tr>
<tr>
<td><strong>White Race</strong></td>
<td>99%</td>
<td>98%</td>
</tr>
<tr>
<td><strong>Charlson Comorbidity Index, mean (SD)</strong></td>
<td>7.5 (4.3)</td>
<td>7.7 (4.6)</td>
</tr>
<tr>
<td><strong>Comorbidities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aMI</td>
<td>75%</td>
<td>76%</td>
</tr>
<tr>
<td>COPD</td>
<td>31%</td>
<td>28%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>59%</td>
<td>58%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Length of Stay in days, mean (SD)</strong></td>
<td>5.1 (3.9)</td>
<td>5.0 (5.2)</td>
</tr>
<tr>
<td><strong>Number of medications at discharge, Mean per patient (SD)</strong></td>
<td>19.1 (7.9)</td>
<td>18.6 (7.6)</td>
</tr>
<tr>
<td><strong>New prescriptions at discharge, Mean per patient (SD)</strong></td>
<td>0.88 (1.2)</td>
<td>0.83 (1.1)</td>
</tr>
</tbody>
</table>
Inclusion Summary

- Enrollment from December 2014-September 2016
- 615 with available matches
  - 61% with community note sent
    - 60% with completed community pharmacy consultation
  - 64% telephonic for first contact

### Number of Patients vs. Number of Community Pharmacy Visits

<table>
<thead>
<tr>
<th>Number of Community Pharmacy Visits</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22%</td>
</tr>
<tr>
<td>2</td>
<td>17%</td>
</tr>
<tr>
<td>3</td>
<td>21%</td>
</tr>
<tr>
<td>4</td>
<td>34%</td>
</tr>
<tr>
<td>5</td>
<td>6%</td>
</tr>
</tbody>
</table>
Initial Findings

- Connecting Inpatient and Outpatient pharmacists via Secure E-mail is feasible
- Despite feasibility, only 61% patients have a note sent to the community pharmacy
- Most patients received follow-up consultation by community pharmacists once discharged (most more than once), but some remain untouched
Pearls from Experience

Interest exists
- Pharmacists/pharmacies can expand roles
- Health-systems are eager to collaborate

Success requires
- Vision
- High-level support
- Collaboration across environments
- Consistent surveillance and evaluation
Pearls from Experience

• Keep patient-care focus
  • Ideal initial contact within first 1-3 days
  • Telephonic follow-up
• Talk with your technology providers about capabilities
• Keep in mind how new interventions merge with your current workflow
• Focus attention on patients in most need
  • High risk conditions, medication-related problems, previous hospitalization
• Address legal, logistical and security concerns
• Learning curve exists
• Focus on Low-hanging fruit (e.g. adherence, medication reconciliation)
• Oversight of Follow-up improves capture
Outline

Introduction
Kroger Experience
Geisinger Experience
Recent Results and Future Directions
Self-Assessment Questions
Discussion
Readmission reduction since ACA

Evidence of Post-Discharge Pharmacist Impact on Rehospitalizations

Oliveira et al. J Patient Saf 2017
Evidence of Post-Discharge Pharmacist Impact on Rehospitalizations

Evidence of Post-Discharge Pharmacist Impact on Hospitalizations

Pharm2Pharm:
• Inpatient to Outpatient pharmacist care

Evidence of Post-Discharge Pharmacist Impact on Rehospitalizations

<table>
<thead>
<tr>
<th>Readmission within 30 days of index hospitalization:</th>
<th>Care transition intervention group</th>
<th>Control group</th>
<th>Relative risk of readmission</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>For any condition</td>
<td>12.2%</td>
<td>22.1%</td>
<td>0.50</td>
<td>(0.29, 0.88)</td>
</tr>
<tr>
<td>For same condition as index hospitalization</td>
<td>6.9</td>
<td>8.4</td>
<td>0.79</td>
<td>(0.33, 1.85)</td>
</tr>
<tr>
<td>Index hospitalization for:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiovascular condition</td>
<td>5.3</td>
<td>9.2</td>
<td>0.55</td>
<td>(0.22, 1.40)</td>
</tr>
<tr>
<td>Respiratory condition</td>
<td>1.5</td>
<td>2.3</td>
<td>0.61</td>
<td>(0.10, 3.69)</td>
</tr>
</tbody>
</table>

\(^a\) Actual risk of readmission

\(^b\) Relative risk of readmission
Take Home Messages on Transitions

- Hospitals are seeing reduction in 30-day readmissions nationally
- Readmissions is a high-priority issue
- Many pharmacist-provided transitions of care interventions tested using inpatient, ambulatory and community pharmacists
- Outcomes using pharmacists look promising
- Wide-spread adoption depends on impact, scalability and sustainability
Outline

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Self-Assessment Question #1

Barriers that hinder effective Transitions of Care include:

a) HIE Interoperability
b) Effective HC provider communication
c) Data Agreements
d) Costs of care
e) All of the Above
Self-Assessment Question #2

Which of the following communication methods/modes were used by Kroger and/or Geisinger to transmit hospital information to community pharmacists?

a) Secure E-mail
b) Phone
c) Fax
d) B and C
e) All of the above
Self-Assessment Question #3

Strategies to improve transitions of care involving pharmacists include:

a) Inpatient to outpatient pharmacist communication

b) Telephone follow-up within 7 days post discharge

c) In-home visits

d) Face-to face medication consultation

e) All of the Above
Outline

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