Care Transition
Initiatives at Houston Methodist Hospital
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Rafael (Rafa) Felippi, PharmD, BCPS
Care Navigator Pharmacist
Houston Methodist Physicians’ Alliance for Quality (HMPAQ)
Objectives

- Identify why care transition is an area of concern

- Discuss how pharmacists at Houston Methodist got involved in care transition and population health

- Identify the roles of pharmacists in both initiatives
Pharmacy involvement in care transition initiatives at Houston Methodist Hospital:

- Care Navigator program:
  - Post-discharge follow-up calls
  - Employee population health
In recent years, there has been an increased interest in the benefits of care transitions with regards to:

- **Increasing:**
  - Adherence
  - Patient satisfaction

- **Decreasing:**
  - Hospitalizations
  - Complication risks
  - Medical care costs

Why should we care?

During Hospitalization
- 28-40% of home medications discontinued
- 45% of drugs prescribed on discharge were started in the hospital

At Discharge
- 20-87% of medication discrepancies at hospital discharge

Post-Discharge
- 1 in 5 patients experienced an adverse drug event (ADE) during the transition from hospital to home
- Most of these ADE (62%) were considered preventable or ameliorable
- Patients less likely to experience an ADE if they recalled having side effects of prescribed medications explained

Michaelson, M et al. Pharmacy 2015,3:53-71
Care Navigators
Who are we?

Multidisciplinary team:

- Registered nurses
- Case managers
- Social worker
- Clinical pharmacists
- Diabetes educator
- Care navigator associates
- Physicians
- Data specialists
- Administrative support team
Houston Methodist Hospital

• 1,931-bed health system in Texas
  – Medical Center
  – Sugarland
  – West Houston (Katy)
  – San Jacinto
  – Willowbrook
How did the Care Navigator program evolve?

- **Care Navigator department was created**: 2008
- **Pharmacy residents joined and piloted pharmacy collaboration as part of drug information rotation experience for 6 months**: January 2012
- **Pharmacist is hired by Care Navigator department**: August 2012
- **A second pharmacist is hired**: 2016

**1 nurse**
- 1 Cardiovascular surgery floor

**2 nurses 1 Pharmacy resident**
- All Medicare-insured patients with primary diagnosis of CHF, AMI, and PNA

**4 nurses 1 FTE Pharmacist**
- Added Medicare-insured patients with primary diagnosis of COPD and direct hospital referrals

**11 nurses 2 FTE Pharmacists**
- Added Population Health initiative and other projects

*FTE: Full-time equivalent*
Post-Discharge Follow Up Calls
Wouldn’t it be nice if we knew which patients would have problems after discharge?
Who do we follow?

- Medicare-insured patients with primary diagnosis of:
  - CHF, AMI, PNA, COPD, post-op hip/knee surgeries

- Direct hospital referrals
  - Orders in EMR, e-mail, phone call

- Care Navigator nurse referrals
  - Polypharmacy, readmissions, medication changes

Exclusion: Transplant, active cancer, dialysis, psych patients; and those discharged to rehab, hospice, SNF, LTAC, AMA

CHF: Congestive heart failure
AMI: Acute myocardial infarction
PNA: Pneumonia
COPD: Chronic obstructive pulmonary disease
SNF: Skilled nursing facility
LTAC: Long term acute care
AMA: Against medical advice
EMR: Electronic medical record
Pharmacist’s Roles in Post-Discharge Review and educate patient on their current drug regimen
Highlight differences in patient’s therapy after hospitalization
Identify duplicate or antagonistic medications
Recommend cost-effective alternatives
Discuss symptoms that are possible side effects from medications
COPD Pilot Study
Impact of pharmacist telephone follow-up calls on patients with COPD discharged from hospital to home

• Primary objective
  – Characterize the types and frequencies of interventions and/or discrepancies that occur upon discharge in Medicare-insured COPD patients contacted by pharmacists
Study Design

• Multicenter
  – 1 academic medical center
  – 4 community hospitals

• Retrospective

• Observational
Eligibility Criteria

- Medicare-Insured
  - Principal diagnosis: COPD exacerbation

Post-discharge follow-up call

Our study population

N=579

Ineligible to Follow-Up

- Transplant patients
- Active cancer patients
- ESRD patients
- Psych patients
- Discharged to rehab, hospice, SNF, LTAC, AMA

N=458

Excluded

- Patients who refused follow-up call
- Unsuccessful call attempts (3 failed call attempts)

N=345

N=121

N=113

SNF: Skilled Nursing Facility; LTAC: Long Term Acute Care; AMA: Against Medical Advice
## Outcomes

### Discrepancies

<table>
<thead>
<tr>
<th>Medication Discrepancies</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete/inaccurate discharge medication reconciliation</td>
<td>198 (57.4)</td>
</tr>
<tr>
<td>Non-adherence</td>
<td>59 (17.1)</td>
</tr>
<tr>
<td>- Intentional</td>
<td>34</td>
</tr>
<tr>
<td>- Non-intentional</td>
<td>25</td>
</tr>
<tr>
<td>Failure to receive medication</td>
<td>43 (12.5)</td>
</tr>
<tr>
<td>- Prescription not available</td>
<td>15</td>
</tr>
<tr>
<td>- Patient cannot afford medication</td>
<td>13</td>
</tr>
<tr>
<td>- Prescription not picked up</td>
<td>9</td>
</tr>
<tr>
<td>- Insurance does not cover medication</td>
<td>6</td>
</tr>
</tbody>
</table>
### Outcomes (cont’d)

#### Discrepancies

<table>
<thead>
<tr>
<th>Medication Discrepancies</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improper drug selection</td>
<td>28 (8.1)</td>
</tr>
<tr>
<td>- Contraindication/caution</td>
<td>14</td>
</tr>
<tr>
<td>- Unsafe drug for patient</td>
<td>11</td>
</tr>
<tr>
<td>- Drug not indicated for condition</td>
<td>2</td>
</tr>
<tr>
<td>- More effective drug available</td>
<td>1</td>
</tr>
<tr>
<td>Untreated indication</td>
<td>21 (6.1)</td>
</tr>
<tr>
<td>Adverse drug reaction</td>
<td>20 (5.8)</td>
</tr>
<tr>
<td>Improper dosing</td>
<td>18 (5.2)</td>
</tr>
<tr>
<td>- Underdosage</td>
<td>1</td>
</tr>
<tr>
<td>- Overdosage</td>
<td>17</td>
</tr>
</tbody>
</table>
### Examples of Interventions

<table>
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<tr>
<th>Discrepancy</th>
<th>Evaluation</th>
<th>Interventions</th>
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<tr>
<td><strong>Duplicate Therapy</strong></td>
<td>Patient was taking dronedarone at home and was discharged on amiodarone. Patient was mistakenly taking both meds post-discharge.</td>
<td>Pharmacist clarified with cardiologist. Patient was instructed to discontinue dronedarone.</td>
</tr>
<tr>
<td><strong>Financial nonadherence</strong></td>
<td>Patient, who was status post GI bleeding, did not fill prescription for pantoprazole due to prior authorization requirement from his insurance</td>
<td>Pharmacist contacted insurance/prescriber and was able to call prescription for dexlansoprazole which was covered by insurance.</td>
</tr>
<tr>
<td><strong>Failure to Receive Medication</strong></td>
<td>Patient did not receive prescriptions for antibiotic and prednisone taper that were intended to be continued for COPD exacerbation</td>
<td>Pharmacist called in the prescriptions for the patient with the physician’s approval</td>
</tr>
</tbody>
</table>
[...]  
“Back in Richmond, patient doesn’t know anything about national readmission rates or hospital fines. She only knows she likes it when the phone rings. On a recent afternoon, sitting at her dining room table, she breaks into a big grin when a pharmacist calls.”

“I look forward to the calls,” she says.
How are we funded?

- HM Hospital System
  - Including cost avoidance from prevented readmissions

- CMS grants
  - Delirium grant
  - Delivery System Reform Incentive Payment (DSRIP) grant

- Private corporations’ grants

- Payor quality bonus

CMS: Centers for Medicare & Medicaid Services
Employee Population Health

A Value-Based Healthcare Delivery Model
What is our definition of population health management?

**Definition:** A data-driven new healthcare delivery model that provides individualized care plans to populations based on health risks.

Population Health Management requires data aggregation and data analytics to monitor effectiveness and to predict future healthcare risks.
### 1. Predictive Analytics

- Which Patients will be readmitted in the future? *(Decrease readmission rates)*
- Which Patients, who appear well today, are at risk for developing a serious illness? *(Target individual risk factors)*

### 2. Patient Outreach Based on Patient Health Risks

- Which patients with uncontrolled diabetes have not had an appointment in the past 3 months? *(Identify gaps in care for healthcare underutilizers)*
- Which patients with diabetes have not filled their prescriptions? *(Prescription Gap Analysis)*

### 3. Physician Decision Support at the Point of Care

- Physician reminders in “real-time” at the point-of-care when patient needs a test, service, or treatment. *(EHR capabilities in EPIC)*
- Which patients with diabetes are more likely to be non-adherent to the care plan? *(Evaluate readiness for change and literacy levels)*
Building our Value-Based Medicine Capabilities

Community-Based Primary Care Physician Network
- Engage Physicians and Align Incentives
- Enhance Patient Access and Patient Convenience
- Focus on Prevention and High Risk Conditions

Nursing/Pharmacist Care Management Program
- Identify Barriers to Achieving Better Health Outcomes
- Coordinate Individualized Care Plans
- Focus on High Risk and Rising Risk Employees/Spouses

Data Driven Clinical Decision Making
- Advanced Informatics to Stratify Health Risks
- Predictive Analytics to Guide Resource Utilization
- Connectivity to Employed and Aligned Physicians

Patient Engagement Strategy
- Improve and Sustain Health Outcomes at a Lower Cost
- Home Health Monitoring Devices Increase Patient Awareness and Education
- Employee Apps and Portals
How do we engage our high-risk and rising risk employees/spouses to improve their health?

**RISK STRATIFY**
Employees

- Use Biometric Screening Data

**CONNECT**
Employees with Primary Care Physicians

- HM Primary Care Network
  - Prevention & Chronic Care Management

**COORDINATE**
Nursing Care Navigators

- Personalize Care Plans

**INDIVIDUALIZE CARE**
Engage Employees

- Refer to Specialists as Needed
  - New Referral Management Service

- Use of Home Healthcare Monitoring Devices
  - Diabetes & Hypertension

Over 3,000 Employees/Spouses Requested Assistance to Connect with a Primary Care Physician
Did we lower health risks to create a healthier population?

50% of employees achieved control of diabetes, hypertension, and nicotine+ within 6 months of participating in the program.

Baseline Data

- Uncontrolled Diabetes, Hypertension, or Nicotine+: 28%
- Suboptimally Controlled Diabetes or Hypertension: 72%

6 Month Participation in Program

- Suboptimally Controlled Diabetes or Hypertension: 37%
- Uncontrolled DM or HTN: 13%
- Controlled Diabetes, Hypertension or Nicotine-: 50%

6 Month Outcomes

SOURCE: 2014 Biometric Data, Houston Methodist San Jacinto Population Health Pilot
Did we sustain outcomes 1 year later?

Comparison of 2014 and 2015 Biometric Data for Employees who Completed the Population Health Program

- **TOBACCO USE**
  - Baseline: 100%
  - 1 Year Later: 65%
  - 1 Year Later, Average HbA1C reduction of 1.3

- **DIABETES**
  - Baseline: 84%
  - 1 Year Later: 25%
  - 1 Year Later, Average HbA1C reduction of 1.3

- **HYPERTENSION**
  - Baseline: 81%
  - 1 Year Later: 55%
  - 1 Year Later, Average SBP reduction of 10mm

SOURCE: 2014 and 2015 Biometric Data Houston Methodist San Jacinto Population Health Pilot
WHAT WAS THE FEEDBACK FROM HOUSTON METHODIST’S EMPLOYEES?

Impact of the Population Health Program on Employees’ Productivity

- Increased Productivity at Work: 43%
- Somewhat Increased Productivity: 51%

What Motivated You to Enroll in the Population Health Pilot?

- Improve My Health: 84%
System-wide 2016 Population Health Program by the Numbers

1164 HM Employees/Spouses Enrolled
61% Participation Rate

456 Primary Care Physicians

High Risk Conditions = 64%
Rising Risk Conditions = 36%

5 Care Navigator nurses* (1 per 232 Employees)
1 Care Navigator Pharmacist

139 Wireless Home Health Monitoring Devices (12%)
Blood Pressure and Blood Sugar

Pharmacist’s Role in Population Health

• Similar to post-discharge patients

• Key differences between working with employees/spouses and Medicare-insured post-discharge patients:
  – Health literacy
  – Acuity of disease
  – Means of communication
  – Availability
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<td>Employee with A1c of 9.3% was prescribed Jardiance® (empagliflozin) but he never got it filled due to high copay cost. He was already optimized on other generic medications.</td>
<td>Pharmacist was able to contact his retail pharmacy and provide a saving card. His prescription was filled at no cost and employee agreed to take medication.</td>
</tr>
<tr>
<td>Unintentional nonadherence</td>
<td>Employee works an inconsistent schedule (nights/days). She reports forgetting to take her medications ~3x/week. She sets up reminders in her work Outlook calendar to take her medications but at home she forgets.</td>
<td>Pharmacist discussed adherence strategies with employee such as setting up alarms in her phone (which she has with her at all times). She welcomed recommendation and stated she will follow it.</td>
</tr>
<tr>
<td>Intentional nonadherence</td>
<td>Employee with LDL of 231 discontinued atorvastatin on her own due to muscle pain. Her MD was unaware of her nonadherence for months.</td>
<td>Pharmacist discussed different strategies (i.e. try a different statin, lower dose, non-statin, etc) and she will schedule an appt with her PCP to f/u on that. Recommendations were also sent to her PCP.</td>
</tr>
</tbody>
</table>
Summary

• Care transition is a vulnerable period for patient safety.

• Pharmacist follow up calls can:
  – Identify
  – Resolve
  – Prevent actual or potential medication-related problems

• Pharmacist-provided medication management can be cost saving to patients and hospitals.

• Pharmacists should explore opportunities to include pharmacy services within care transitions and population health initiatives.
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Thank you!!

What questions do you have?