Evaluation of a hospital-based pharmacist-driven transitions of care service

Jordan Holder PharmD

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Evaluation of a Hospital-Based Pharmacist-Driven Transitions of Care Service

Jordan L. Holder, PharmD
PGY-2 Ambulatory Care Resident
Parkview Health
jordan_holder@parkview.com
Background

- Readmissions account for about $26 billion dollars annually
- Studies suggest that though readmissions have decreased, total visits have increased by 23 visits per month per 100,000 discharges
- ~20% of readmissions are related to medications

This speaker nor any of the coinvestigators have no actual or potential conflicts of interest to disclose
HRRP

- Transitions of care (TOC) → movement of a patient from one care setting to another
- Centers for Medicare and Medicaid Services (CMS) Hospital Readmissions Reduction Program (HRRP)
- Established in 2012
- Goals:
  - Improve communication and care coordination
  - Decrease readmissions
CMS follows conditions and procedures for 30-day risk-standardized unplanned readmission measures

- Acute myocardial infarction
- Chronic obstructive pulmonary disease
- Heart failure
- Pneumonia
- Coronary artery bypass graft surgery
- Elective primary total hip arthroplasty and/or total knee arthroplasty
Regulatory Bodies

• Joint Commission and HCAHPS evaluate transitions of care measures with 3 questions

1. The hospital staff took my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I left the hospital.

2. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.

3. When I left the hospital, I clearly understood the purpose of taking each of my medications.
### Pharmacy’s Role in TOC

<table>
<thead>
<tr>
<th>Admission medication reconciliation</th>
<th>Discharge medication reconciliation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient-centered discharge education</strong></td>
<td>Coordination for high-cost medications</td>
</tr>
<tr>
<td>Post-discharge transitions of care phone calls</td>
<td>Involvement in transitions of care office visits</td>
</tr>
<tr>
<td>Resolve medication access concerns</td>
<td>Develop education materials for staff and patients</td>
</tr>
<tr>
<td>Meds to beds programs</td>
<td>TOC rounding services</td>
</tr>
</tbody>
</table>
“Real-world evidence on impact of a pharmacist-led transitional care program on 30- and 90-day readmissions after acute care episodes”

<table>
<thead>
<tr>
<th>Study design</th>
<th>Retrospective cohort study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary diagnoses</td>
<td>acute MI, COPD, HF, and PNA</td>
</tr>
<tr>
<td>Intervention group</td>
<td>1776</td>
</tr>
<tr>
<td>Control group</td>
<td>2969</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Outcomes</th>
<th>30-day readmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90-day readmissions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Outcomes</th>
<th>Length of stay</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Results</th>
<th>30-day readmission: OR=0.654, p=0.035</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90-day readmission: OR=0.752, p=0.070</td>
</tr>
<tr>
<td></td>
<td>LOS: OR= -0.15, p=0.662</td>
</tr>
</tbody>
</table>
Self Assessment Question #1

Which disease state is included in the CMS’s HRRP?
A. COPD
B. UTI
C. Diabetes
D. Stroke
Self Assessment Question #1

Which disease state is included in the CMS’s HRRP?

A. COPD
B. UTI
C. Diabetes
D. Stroke
Self Assessment Question #2

Which of the following is considered a pharmacy transitions of care task?

A. Dosing a vancomycin in the hospital
B. Completing patient education at discharge
C. Monitoring heparin aPTTs
D. Completing remdesivir preparation in the IV room
Self Assessment Question #2

Which of the following is considered a pharmacy transitions of care task?

A. Dosing a vancomycin in the hospital
B. Completing patient education at discharge
C. Monitoring heparin aPTT
D. Completing remdesivir preparation in the IV room
Purpose

• Assess if pharmacist involvement in transitions of care can impact readmissions rates and transitions of care measure scores
• Evaluate the number of interventions a pharmacist can make in a transitions of care role
Setting

- Parkview Health
  - Not-for-profit, community-owned organization
  - Northeast Indiana and northwest Ohio
  - 10 hospital health system
    - Over 900 inpatient beds
    - Over 200 primary care clinics
- 7 Medical
  - 36 beds
Pharmacist Interventions

Inpatient Pharmacists
- Completion of clinical rounding
- Evaluating clinical consults, best practice/cost saving initiatives, antimicrobial stewardship grid, and AKI grid
- Answering questions from nursing about their patients

Transitions of Care Pharmacist
- Discharge medication reconciliation
- Patient discharge education
- Intervening in medication assistance needs

Ambulatory Pharmacists
- Office dependent
- Transitional care management phone calls
- Pharmacy visits for medication education
- Pharmacy visits for disease-state management
Study Design

• Retrospective matched cohort study
  • Pre-intervention
  • Post-intervention

• Timeframe January 2019-November 2020

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>178</td>
<td>178</td>
</tr>
</tbody>
</table>

IRB-approved exempt study design
Outcomes

• Primary
  • 30-day all-cause readmission

• Secondary
  • 30-day ED visits independent of readmission
  • 3-item care transition measures
  • Number of pharmacist interventions
  • Physician acceptance rate
  • Physician rejection rate
  • Number of patient access interventions
Patient Population

- Total study population

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of 7 medical</td>
<td>Death during index hospitalization</td>
</tr>
<tr>
<td>Age ≥18</td>
<td></td>
</tr>
</tbody>
</table>
Patient Population

- Intervention-specific counseling criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of 7 medical</td>
<td>Death during index hospitalization</td>
</tr>
<tr>
<td>Age $\geq 18$</td>
<td>Discharge to long-term care facility</td>
</tr>
<tr>
<td>Patients discharged to home or rehabilitation units (without hospice level care)</td>
<td>Discharge to hospice level care</td>
</tr>
<tr>
<td></td>
<td>Patients discharged outside of working hours</td>
</tr>
</tbody>
</table>
Matching Criteria

Age
- 18-29
- 30-45
- 46-64
- 65+

Gender
- Male
- Female
Matching Criteria

Length of Stay

- <7 days
- 8-14 days
- >14 days

Billing diagnosis-related group (DRG)

- Cardiac/coagulation/blood
- Respiratory
- Sepsis
- Other infections
- Endocrine
- Gastrointestinal
- Renal/urogenital/reproductive
- Nutrition/electrolytes
- Substance abuse
- Other
Baseline Demographics

<table>
<thead>
<tr>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>83 female</td>
<td>83 female</td>
</tr>
<tr>
<td>95 male</td>
<td>95 male</td>
</tr>
<tr>
<td><strong>Average age</strong></td>
<td><strong>Average age</strong></td>
</tr>
<tr>
<td>66.9 ± 16.6</td>
<td>65.0 ± 17.2</td>
</tr>
<tr>
<td><strong>Average length of stay</strong></td>
<td><strong>Average length of stay</strong></td>
</tr>
<tr>
<td>5.95 ± 4.5</td>
<td>6.57 ± 6.5</td>
</tr>
<tr>
<td><strong>Most common billing DRG code</strong></td>
<td><strong>Most common billing DRG code</strong></td>
</tr>
<tr>
<td>Septicemia</td>
<td>Septicemia</td>
</tr>
</tbody>
</table>
Baseline Demographics

- Ambulatory Care Sensitive Conditions (ACSC)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pre-intervention (n=178)</th>
<th>Post-intervention (n=178)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>16</td>
<td>15</td>
<td>0.851</td>
</tr>
<tr>
<td>HTN</td>
<td>69</td>
<td>56</td>
<td>0.149</td>
</tr>
<tr>
<td>HLD</td>
<td>16</td>
<td>22</td>
<td>0.303</td>
</tr>
<tr>
<td>DM</td>
<td>40</td>
<td>44</td>
<td>0.618</td>
</tr>
</tbody>
</table>
## Readmissions and ED visits

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention (n=178)</th>
<th>Post-intervention (n=178)</th>
<th>P-value</th>
<th>Reduction Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Readmission Rate</strong></td>
<td>42 (23.6%)</td>
<td>34 (19.1%)</td>
<td>0.301</td>
<td>4.5%</td>
</tr>
<tr>
<td><strong>Isolated ED Visit Rates</strong></td>
<td>22 (12.4%)</td>
<td>21 (11.8%)</td>
<td>0.871</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

- Of note: 18/34 readmissions and 12/21 isolated ED visits in the post intervention group received both discharge medication reconciliation and discharge education
HCAHPS Scores

- Unit level data is in process

<table>
<thead>
<tr>
<th></th>
<th>Quarter 3</th>
<th>Previous Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff took preferences into account</td>
<td>46.4%</td>
<td>43.8%</td>
</tr>
<tr>
<td>Understood managing of health</td>
<td>57.8%</td>
<td>52.5%</td>
</tr>
<tr>
<td>Understood purpose of medications</td>
<td>54.8%</td>
<td>60.0%</td>
</tr>
</tbody>
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<thead>
<tr>
<th></th>
<th>Quarter 4</th>
<th>Previous Quarter</th>
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<tr>
<td>Staff took preferences into account</td>
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Pharmacist Interventions

Total pharmacist interventions: 277

- Access help: 13
- Medication assistance program (MAP) referrals: 4
- Discharge assistance: 260
- Discharge medication education: 91
- Discharge medication reconciliation: 169
Discrepancies

Total Discrepancies
28

Physician Accepted
21
(75%)

Physician Rejected
7
(25%)
Conclusions

- Transitions of care did not significantly change readmissions or isolated ED visits
- Pharmacists can make a wide variety of patient centered interventions
- There are additional opportunities for pharmacist involvement in transitions of care
Limitations

• Time limitation
• Small sample size
• EHR optimization
• Human variability
• Communication to staff outside of the project team
• Prioritization strategies
Future Directions

• Expanding services into additional admission medication reconciliation
• Adding additional floors to the service
• Involvement in potential medication assistance issues where alternatives may be beneficial
• Creating better communication pathways to work with our outpatient providers
• Finding funding sources to support a pharmacist in a transitions of care role
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• Tara Jellison, PharmD, MBA, FASHP
• Abby Todt, PharmD, BCPS
References

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