Evaluation of pharmacist involvement in outpatient transitional care management

Katharine Lundy PharmD
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Disclosure

- The speaker has no actual or potential conflict of interest in relation to this presentation
Transitional Care Management

Transitional Care Management

60% of medication errors occur at hospital discharge

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11% of inpatients with medical complexities at risk for adverse drug events post-hospital discharge

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11% of inpatients with medical complexities at risk for adverse drug events post-hospital discharge

Annual expenditure for hospital readmissions: $41 billion

Transitional Care Management

- 60% of medication errors occur at hospital discharge
- 11% of inpatients with medical complexities at risk for adverse drug events post-hospital discharge
- Annual expenditure for hospital readmissions: $41 billion
- 2013 All-cause 30-day readmission for Medicare beneficiaries 17.5%
Transitional Care Management

Inpatient admission → Inpatient discharge → Return to community → 29 days post-discharge

Transitional Care Management

- Inpatient admission
- Inpatient discharge
- Return to community
- 29 days post-discharge

Transitional Care Management (TCM)

Purpose of TCM

**Reduce hospital readmissions**

**Ensure care coordination**

**Prevent gaps in care provision**
TCM Components

Interactive Contact

• Within 2 days of discharge
• Telephone, email, or face-to-face
TCM Components

Interactive Contact

• Within 2 days of discharge
• Telephone, email, or face-to-face

Non-face-to-face services

• Assess adherence & medication management
  • Provide education
  • Assist with accessing care & services


NPP= Non Physician Provider
TCM Components

Interactive Contact
- Within 2 days of discharge
- Telephone, email, or face-to-face

Non-face-to-face services
- Assess adherence & medication management
  - Provide education
  - Assist with accessing care & services

Face-to-face visit
- Physician or NPP
  - In 7 days if high complexity
  - Within 14 days if moderate complexity


NPP= Non Physician Provider
Assessment Question

Which of the following is a required component of TCM in order to obtain reimbursement?

A. A face-to-face visit with a pharmacist
B. A face-to-face visit with a physician or midlevel provider
C. A face-to-face visit with a registered nurse
D. A non-face-to-face visit with a physician or midlevel provider
Assessment Question

Which of the following is a required component of TCM in order to obtain reimbursement?

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B. A face-to-face visit with a physician or midlevel provider
C. A face-to-face visit with a registered nurse
D. A non-face-to-face visit with a physician or midlevel provider
<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Intervention</th>
<th>Results</th>
</tr>
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<tbody>
<tr>
<td>Project Re-Engineered Discharge (RED)</td>
<td>401 patients discharged from Boston Medical Center</td>
<td>Education from discharge nurse educator (DNE) &amp; phone call from pharmacist in 2-4 days</td>
<td>30% decrease in emergency room (ER) visits &amp; 30 day readmissions</td>
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</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------</td>
<td>---------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Revisiting Project RED</td>
<td>401 patients discharged from Boston Medical Center &amp; received education from DNE</td>
<td>Contacted by pharmacist; n=277</td>
<td>17.7% unplanned hospitalizations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unable to be contacted by pharmacist; n=124</td>
<td>33.9% unplanned hospitalizations</td>
</tr>
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<td>401 patients discharged from Boston Medical Center</td>
<td>Education from discharge nurse educator (DNE) &amp; phone call from pharmacist in 2-4 days</td>
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<td>Results</td>
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<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reduction of healthcare costs through a transitions-of-care program</td>
<td>1835 patients discharged from a local hospital in Kern County, California &amp; members of a Medicaid managed health plan</td>
<td>Referred to ambulatory care pharmacy-based transitions of care program; n=830</td>
<td>$2,139 decrease in total healthcare costs at 180 days post-discharge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Received usual care; n=1005</td>
<td></td>
</tr>
</tbody>
</table>
Assessment Question

Which of the following is a potential benefit of providing Transitional Care Management (TCM) services as demonstrated in previous studies?

A. Increased hospital readmission rates
B. Increased pharmacist workload
C. Decreased hospital readmission rates
D. Decreased patient satisfaction
**Assessment Question**

Which of the following is a potential benefit of providing Transitional Care Management (TCM) services as demonstrated in previous studies?

A. Increased hospital readmission rates
B. Increased pharmacist workload
C. Decreased hospital readmission rates
D. Decreased patient satisfaction
Parkview Health

- Not-for-profit, community-based health system
- Northeast Indiana & Northwest Ohio
- Parkview Physicians Group (PPG)
  - 237 locations for primary care and specialty clinics

TCM at Parkview

Nurse-driven office

Receive report of discharged patients

LPN: Licensed Practical Nurse
RN: Registered Nurse
MA: Medical Assistant
TCM at Parkview

Nurse-driven office

- Receive report of discharged patients
- Initial phone call made by LPN or RN

LPN: Licensed Practical Nurse
RN: Registered Nurse
MA: Medical Assistant
TCM at Parkview

Nurse-driven office

1. Receive report of discharged patients
2. Initial phone call made by LPN or RN
3. Face-to-face visit with physician or midlevel provider

LPN: Licensed Practical Nurse
RN: Registered Nurse
MA: Medical Assistant
TCM at Parkview

Nurse-driven office

Receive report of discharged patients → Initial phone call made by LPN or RN → Face-to-face visit with physician or midlevel provider

Pharmacist-driven office

Receive report of discharged patients

LPN: Licensed Practical Nurse
RN: Registered Nurse
MA: Medical Assistant
TCM at Parkview

Nurse-driven office

Receive report of discharged patients

Initial phone call made by LPN or RN

Face-to-face visit with physician or midlevel provider

Pharmacist-driven office

Receive report of discharged patients

Initial phone call made by MA or LPN

LPN: Licensed Practical Nurse
RN: Registered Nurse
MA: Medical Assistant
TCM at Parkview

**Nurse-driven office**

1. Receive report of discharged patients
2. Initial phone call made by LPN or RN
3. Face-to-face visit with physician or midlevel provider

**Pharmacist-driven office**

1. Receive report of discharged patients
2. Initial phone call made by MA or LPN
3. Medication review by RPh if MEDCOINS score 5-6

LPN: Licensed Practical Nurse
RN: Registered Nurse
MA: Medical Assistant
TCM at Parkview

Nurse-driven office

1. Receive report of discharged patients
2. Initial phone call made by LPN or RN
3. Face-to-face visit with physician or midlevel provider

Pharmacist-driven office

1. Receive report of discharged patients
2. Initial phone call made by MA or LPN
3. Medication review by RPh if MEDCOINS score 5-6
4. Face-to-face visit with physician or midlevel provider

LPN: Licensed Practical Nurse
RN: Registered Nurse
MA: Medical Assistant
• Development and validation of a transitions-of-care pharmacist tool
McAuliffe, et al.

- Development and validation of a transitions-of-care pharmacist tool
- MEDCOINS score:
McAuliffe, et al.

- Development and validation of a transitions-of-care pharmacist tool

- MEDCOINS score:
  - Medication count
McAuliffe, et al.

- Development and validation of a transitions-of-care pharmacist tool

- MEDCOINS score:
  - Medication count
  - Comorbidity count
• Development and validation of a transitions-of-care pharmacist tool

• MEDCOINS score:
  • Medication count
  • Comorbidity count
  • Health insurance status

MEDCOINS Scoring Tool for Risk Assessment of Readmission

Step 1: Medication Count
- Number of medications at discharge:_______
  - If ≥10 medications: **1 point**

Step 2: Chronic Condition Count
- Number of chronic conditions at discharge:_______
  - If ≥6 conditions: **2 points**

Step 3: Health Insurance Coverage
- Type of health insurance (circle one): None Public Private
  - If None: **2 points**
  - If Public: **3 points**

Add the numbers in Box 1, Box 2, and Box 3 to calculate the MEDCOINS score, enter into box below, and determine risk category using table:

<table>
<thead>
<tr>
<th>Points</th>
<th>Risk Category</th>
<th>Estimated Risk (%) of Readmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1</td>
<td>Low</td>
<td>5.7</td>
</tr>
<tr>
<td>2–4</td>
<td>Moderate</td>
<td>13.2</td>
</tr>
<tr>
<td>5–6</td>
<td>High</td>
<td>22.5</td>
</tr>
</tbody>
</table>

*Public health insurance includes Medicare, Medicaid, or a combination of both.

b) Maximum score, 6 points
Purpose

- Evaluate patient outcomes following implementation of a pharmacist in the TCM workflow

Outcomes

- Primary: percentage of patients with 30 day readmissions
- Secondary:
  - Percentage of patients with 30 day ED utilizations
  - Percentage of patients who completed TCM appointment
Study Design

• Retrospective quality improvement study
  • IRB approved
• Review of TCM contacts from October 2018 through January 2019
Study Design

- Retrospective quality improvement study
  - IRB approved
- Review of TCM contacts from October 2018 through January 2019

PPG: Parkview Physicians Group
Study Design

• Retrospective quality improvement study
  • IRB approved
• Review of TCM contacts from October 2018 through January 2019

TCM contacts by pharmacist with MEDCOINS score 5-6

TCM contacts by RN or LPN with MEDCOINS score 5-6

PPG: Parkview Physicians Group
## Inclusion/Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Age 18-89</td>
<td>• Age &lt; 18 years old</td>
</tr>
<tr>
<td>• Response to TCM phone call</td>
<td>• Prisoners</td>
</tr>
<tr>
<td></td>
<td>• Pregnancy</td>
</tr>
<tr>
<td></td>
<td>• Death within 30 days of discharge</td>
</tr>
<tr>
<td></td>
<td>• Discharged to SNF, ECF, or rehabilitation facility</td>
</tr>
<tr>
<td></td>
<td>• Discharged with hospice/palliative care</td>
</tr>
<tr>
<td></td>
<td>• Left AMA</td>
</tr>
</tbody>
</table>

SNF: Skilled Nursing Facility  
ECF: Extended Care Facility  
AMA: Against Medical Advice
Selected Patients

787 patients discharged Oct 2018-Jan 2019

319 met initial exclusion criteria

321 MEDCOINS score 0-4

87 without initial contact

60 included in study
## Demographics

|                  | Pharmacist-driven  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong> = 18</td>
<td></td>
</tr>
<tr>
<td><strong>Nurse-driven</strong></td>
<td><strong>N</strong> = 42</td>
</tr>
<tr>
<td><strong>Median Age (IQR)</strong></td>
<td>68 (62-78)</td>
</tr>
<tr>
<td></td>
<td>67.5 (61-78)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td>9 Male</td>
</tr>
<tr>
<td></td>
<td>9 Female</td>
</tr>
<tr>
<td></td>
<td>16 Male</td>
</tr>
<tr>
<td></td>
<td>26 Female</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td>17 White/Caucasian</td>
</tr>
<tr>
<td></td>
<td>1 Hispanic/Latino</td>
</tr>
<tr>
<td></td>
<td>42 White/Caucasian</td>
</tr>
</tbody>
</table>

IQR = Interquartile Range
## Results

<table>
<thead>
<tr>
<th></th>
<th>Pharmacist-driven</th>
<th>Nurse-driven</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N = 18</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-day readmission</td>
<td>6 (33.3%)</td>
<td>7 (16.7%)</td>
<td>0.151</td>
</tr>
<tr>
<td>30-day ED utilization</td>
<td>3 (16.7%)</td>
<td>6 (14.3%)</td>
<td>0.813</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Pharmacist-driven</th>
<th>Nurse-driven</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N = 12 January</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-day readmission</td>
<td>2 (16.7%)</td>
<td>4 (23.5%)</td>
<td>0.653</td>
</tr>
<tr>
<td>30-day ED utilization</td>
<td>1 (8.3%)</td>
<td>4 (23.5%)</td>
<td>0.286</td>
</tr>
</tbody>
</table>
# Results

<table>
<thead>
<tr>
<th></th>
<th>Pharmacist-driven office N = 18</th>
<th>Nurse-driven office N = 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median number of medications on discharge (IQR)</td>
<td>13.4 (12-21)</td>
<td>17 (12-22)</td>
</tr>
<tr>
<td>Median MEDCOINS (IQR)</td>
<td>6 (6-6)</td>
<td>6 (6-6)</td>
</tr>
<tr>
<td>Median LACE Index (IQR)</td>
<td>5 (2.75-8)</td>
<td>5 (3-7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Pharmacist-driven January N = 12</th>
<th>Nurse-driven office in Jan N = 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median number of medications on discharge (IQR)</td>
<td>16 (10.25-19)</td>
<td>16.5 (11.75-21.25)</td>
</tr>
<tr>
<td>Median MEDCOINS (IQR)</td>
<td>6 (6-6)</td>
<td>6 (6-6)</td>
</tr>
<tr>
<td>Median LACE Index (IQR)</td>
<td>5 (2.75-7.25)</td>
<td>5 (3-6.75)</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>CMS Designated Condition</th>
<th>Pharmacist-driven office; N = 18</th>
<th>Nurse-driven office; N = 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive Heart Failure</td>
<td>18 (100%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>3 (16%)</td>
<td>7 (17%)</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td>1 (6%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Coronary Artery Bypass Graft</td>
<td>1 (6%)</td>
<td>7 (17%)</td>
</tr>
<tr>
<td>Hip/Knee Replacement</td>
<td>1 (6%)</td>
<td>4 (10%)</td>
</tr>
</tbody>
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## Results

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<tr>
<td>Completed TCM Appointment</td>
<td>13 (72%)</td>
<td>41 (98%)</td>
</tr>
<tr>
<td>Billed for TCM After Completing</td>
<td>9 (69%)</td>
<td>39 (95%)</td>
</tr>
<tr>
<td>Appointment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pharmacist Interventions

- Medication Reconciliation: 4
- Coordinated Fill/refill: 3
- Financial Assistance: 4
- Drug Discontinuation: 1
- Drug Change: 1
- Enhance Compliance: 1
- Referral: 4
Limitations

• Small patient population
• Comparison of two different workflows
• Number of providers involved
• Establishment of new service
• Patient report of medication use
Future Direction

- Continue data collection
- Re-evaluation of workflow
- Further examination of readmitted patients
- Further examination of patient care handoff between pharmacists
- Publication
Acknowledgements

• Ashley Parrott PharmD, MBA, BCPS, BCACP
• Rachel Steele PharmD, BCACP
• Tara Jellison, PharmD, MBA, FASHP
• Sarah Ferrell, PharmD
References

- Center for Health Information and Analysis. Performance of the Massachusetts Health Care System Series: A Focus on Provider Quality. 2015 Jan;1-34.
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