Pharmacist Collaboration to Maximize Your Patient-Centered Medical Home

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Learning Objectives

• Describe how pharmacists can provide patient-centered, collaborative care in a primary care setting
• Discuss a transitional care coordination workflow in a patient centered medical home
• Demonstrate effective population management initiatives
Pharmacist Education

• Doctor of Pharmacy Degree
  – 6-8 years education
  – 3 year emphasis:
    • Medicinal chemistry
    • Pharmacology
    • Pharmacokinetics
    • Therapeutics
  – 1 year experiential
• Pharmacy Residency (elective)
  – 1 or 2 years clinical experience

OSU General Internal Medicine

• Martha Morehouse GIM Clinic
• CarePoint East GIM Clinic
• Stoneridge GIM Clinic
• Grandview GIM Clinic
• Hilliard GIM Clinic
• Lewis Center Primary Care

• National Committee for Quality Assurance (NCQA) tier 3 patient-centered medical homes (PCMH)
Martha Morehouse GIM Clinic

• >75 Internal Medicine residents; 12 attending physicians
• >20,000 patients
• 1 pharmacist shared faculty; 2 pharmacy residents
• 5 care coordinators (RN)
• 1 social worker
• 1 medication assistance programs coordinator
• 12 medical assistants

Polypharmacy Service

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Polypharmacy Clinic Workflow

- Medication-focused visit with pharmacist and internal medicine resident
- Target patients taking ≥ 10 medications

Pre-visit screening • Staff visit with attending • Patient receives education

Patient presents with medications • Assess for drug related problems • Follow up in one month

Polypharmacy Clinic – Preliminary Findings

Mean Medications at Start of Visit: 23.7 (SD 6.6)
Mean Medications at End of Visit: 19.3 (SD 7.2)
Polypharmacy Clinic Value

- 5-6 patients scheduled per ½ day
  - 1 attending physician, 1-2 medical residents, 2 pharmacists, medical students, pharmacy students
  - Could be modified to pharmacist only
- Pharmacist billing opportunities for select insurers
- Up-to-date medication list in EMR

Transitional Care Coordination

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Transitional Care Coordination

- 99495/99496 introduced in January 2013
- Contact by “licensed clinical staff” within 2 business days of discharge from acute care setting

<table>
<thead>
<tr>
<th>Type of contact</th>
<th>Acute Care Setting</th>
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<tbody>
<tr>
<td>Phone</td>
<td>Acute or rehabilitation hospital</td>
</tr>
<tr>
<td>Email</td>
<td>Observation unit</td>
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<tr>
<td>Face-to-face</td>
<td>Nursing facility</td>
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</table>

- Face to face visit with physician within 7-14 days
- Continued coordination 30 days post-discharge

Transitional Care Coordination Workflow

Patient Discharged
- Discharge summary sent to physician

Physician review to determine complexity
- Message electronically sent to pharmacist

Pharmacist contacts within 2 business days
- Assess patient; medication reconciliation; confirm appointments; document

Patient follow-up within 7 or 14 days
- Pharmacist’s note leads to focused visit
Transitional Care Coordination

- Results from 4/1/13 – 7/31/13 (n=68)
- Demographics
  - Female 62%
  - Mean age – 67.1
  - White 66%; African American 31%
  - Medicare 60%; Private 22%

Transitional Care Coordination

Top 3 Discharge Diagnosis

<table>
<thead>
<tr>
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<tr>
<td>Diabetes</td>
<td>9</td>
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<td>CHF</td>
<td>8</td>
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<tr>
<td>CAP</td>
<td>4</td>
</tr>
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<td>COPD</td>
<td>5</td>
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<tr>
<td>CKD</td>
<td>6</td>
</tr>
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<td>UTI</td>
<td>7</td>
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</table>
Transitional Care Coordination

- Discharge location:
  - OSUWMC – 59%
- Average medications upon discharge – 14.7
  - 37.3% on opioid
  - 34.3% on anticoagulant
  - 25.3% on antibiotic
  - 25.3% on insulin

Transitional Care Coordination

Follow up visit scheduled with PCP within 14 days
Prior to pharmacy phone call

Yes

No
Transitional Care Coordination

- Medication-related problems
  - Identified in 60% of phone calls

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<th>Issue</th>
<th>Count</th>
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<tr>
<td>Did not start NEW medication</td>
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<tr>
<td>Taking medication incorrectly (e.g., wrong dose, time)</td>
<td>10</td>
</tr>
<tr>
<td>Continued to take a STOPPED medication</td>
<td>5</td>
</tr>
<tr>
<td>Experienced adverse effect</td>
<td>5</td>
</tr>
<tr>
<td>Warfarin without INR monitoring scheduled</td>
<td>6</td>
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Transitional Care Coordination Value

<table>
<thead>
<tr>
<th>CPT code</th>
<th>tRVU</th>
<th>wRVU</th>
<th>tRVU - wRVU</th>
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<tr>
<td>99214</td>
<td>3.13</td>
<td>1.49</td>
<td>1.64</td>
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<tr>
<td>99495</td>
<td>4.82</td>
<td>2.11</td>
<td>2.71</td>
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<tr>
<td>99215</td>
<td>4.20</td>
<td>2.10</td>
<td>2.10</td>
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<tr>
<td>99496</td>
<td>6.79</td>
<td>3.05</td>
<td>3.74</td>
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</table>

- Efficient hospital follow-up visit
- Reduced rehospitalizations?

Why patients do not fill their prescriptions
Common drug-drug interactions

Population Management

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Associate Professor of Clinical Pharmacy
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Population Management

- Uses EMR-reporting capabilities
  - Patient registries (PCMH requirement)
- Proactive, targeted interventions
- Incorporates team-based care
- Improves outcomes in specific population
- Can be completed outside of an office visit

EMR: Electronic Medical Record

Population Management Process

1. Identify population
2. Generate report
3. Implement Intervention
4. Track Outcomes
5. Update EMR
Herpes zoster vaccination

Chronic Kidney Disease Management

Bisphosphonate Use

OSU GIM: The Ohio State University Division of General Internal Medicine
Preventative Health
Herpes Zoster Vaccination

- Identify population
- Generate report
- Implement Intervention
- Track Outcomes
  - Update EMR

EMR: Electronic Medical Record
HZV: Herpes Zoster Vaccine

Preventative Health
Herpes Zoster Vaccination

- Identify population
- Generate report
- Implement Intervention
- Track Outcomes
  - Update EMR

Patients without herpes zoster vaccine
- Age ≥ 60
  - No documented HZV in EMR
  - Pharmacist review of EMR
    - HZV prescription sent to patient
  - EMR Updated

EMR: Electronic Medical Record
HZV: Herpes Zoster Vaccine
Herpes Zoster Vaccination

2,981 patients age ≥ 60 years identified

2,589 patients age ≥ 60 years with no documented HZV

Intervention n = 500
Standard Care n = 2,089

Personal Health Record n = 250
No Personal Health Record n = 250

HZV: Herpes Zoster Vaccine

Preventative Health

Herpes Zoster Vaccination

12%
14%
p=0.0001

4%
6%
8%
10%
12%
p=0.0007

0%
2%
4%
6%
8%
10%
12%
14%

Personal Health Record
Non-personal Health Record

Control
Intervention
OSU GIM Population Management Interventions

- Preventative Health: Herpes zoster vaccination
- Chronic Disease State Management: Chronic Kidney Disease Management
- Medication Monitoring: Bisphosphonate Use

OSU GIM: The Ohio State University Division of General Internal Medicine

Chronic Disease State Management

Chronic Kidney Disease

- Identify population
- Generate report
- Implement Intervention
- Track Outcomes
- Update EMR
Chronic Disease State Management
Chronic Kidney Disease

- Identify population
- Generate report
- Implement Intervention
- Track Outcomes
- Update EMR

Chronic Kidney Disease
- eGFR < 60 mL/min/1.73m²
- KDOQI Guideline Recommendations
- Renal Medication Dosing
- EMR Updated

Chronic Disease State Management
CKD Baseline Characteristics

<table>
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<tr>
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<tr>
<td>Sex</td>
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<tr>
<td>Female</td>
<td>96 (65.8%)</td>
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<tr>
<td>Mean Age in years</td>
<td>71.6 ± 12.2</td>
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<tr>
<td>Mean Number of Medications on List</td>
<td>13 ± 5</td>
</tr>
<tr>
<td>Race</td>
<td></td>
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<tr>
<td>African American</td>
<td>24 (16.4%)</td>
</tr>
<tr>
<td>White</td>
<td>112 (76.7%)</td>
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<tr>
<td>Other</td>
<td>10 (6.8%)</td>
</tr>
<tr>
<td>CKD Stage</td>
<td></td>
</tr>
<tr>
<td>Stage 3</td>
<td>139 (95.2%)</td>
</tr>
<tr>
<td>Stage 4</td>
<td>5 (3.4%)</td>
</tr>
<tr>
<td>Stage 5</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td>Comorbidities</td>
<td></td>
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<tr>
<td>Hypertension</td>
<td>123 (84.3%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>54 (37%)</td>
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Chronic Disease State Management

Chronic Kidney Disease

3,214 patients identified and eGFR calculated

328 (10.2%) patients with eGFR < 60 mL/min/1.73m²

Intervention n=146

Excluded n = 182

CKD Identified as Medical Problem

Before Pharmacist Intervention

- N = 95 (65%)
- N = 51 (35%)

N = 145 (99.3%)

- Identified as medical problem in EMR
- Not identified as medical problem in EMR
CKD Identified as Medical Problem

Before Pharmacist Intervention
N = 95 (62%)
N = 51 (35%)

After Pharmacist Intervention
N = 145 (99.3%)
N = 1 (0.7%)

Chronic Disease State Management
Medications Not Requiring Renal Adjustment
N = 1,645 (85.9%)

Medications Requiring Renal Adjustment
N = 270 (14.1%)
CKD Medication Safety

Before Pharmacist Intervention

- Medication NOT renally dose adjusted
- Medication renally dose adjusted
Herpes zoster vaccination

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Chronic Disease State Management

CKD Medication Safety

Before Pharmacist Intervention

After Pharmacist Intervention

N = 132 (48.9%)
N = 138 (51.1%)

N = 222 (82.2%)
N = 48 (17.8%)

Medication NOT renally dose adjusted

Medication renally dose adjusted

Preventative Health
Herpes zoster vaccination

Chronic Disease State Management
Chronic Kidney Disease Management

Medication Monitoring
Bisphosphonate Use

OSU GIM Population Management Interventions
High-risk Medication Monitoring
Bisphosphonate Use

Identify population

Generate report

Implement Intervention

Track Outcomes
Update EMR

EMR: Electronic Medical Record
High Risk Medication Monitoring
Bisphosphonate Use

- 687 patients identified on bisphosphonate
- Eligible for Inclusion n=362
- Excluded n = 325
- Intervention n=142
- Control n=220

Intervention Group: 17.6%
Control Group: 8.5%

Pre-Intervention: 39.5%
Post-Intervention: 35.5%
Reasons for Inappropriate Bisphosphonate Use

- Insufficient Fracture Risk (44%)
- Renal Function (24%)
- Length of Therapy (32%)

Population Management

- Proactive, targeted interventions
  - MANY other opportunities
- Team-based care
- Can occur outside of office visit
- Patient-centered medical home credentialing, etc
- Improves patient outcomes