Reducing Adverse Drug Events Across the Care Continuum

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Qualis Health
- A leading national population health management organization
- The Medicare Quality Innovation Network - Quality Improvement Organization (QIN-QIO) for Idaho and Washington

The QIO Program
- One of the largest federal programs dedicated to improving health quality at the local level
Patient Safety & Clinical Rx Services (PSPC) Collaborative

Washington WA Team

ADEs 66%
pADEs 19%

Sixteen Care Transitions Communities

Adverse Drug Events (ADEs)

An injury resulting from medical intervention related to a drug

Today’s Journey

• Impact of ADEs on the healthcare system
• Focus on Transitions
• Key Medications involved in ADEs
• Successful Practices and Tools
Transitions

1 in 5 Patients

Disequilibrium

“The lack of stability individuals experience when moving from one developmental place to the next”

Jean Piaget
High Risk Medications Focus

Anticoagulants
Diabetic Agents
Opioids

ADEs and Emergency Hospitalizations

<table>
<thead>
<tr>
<th>Medication</th>
<th>Annual National Estimate of Hospitalizations (N=99,432)</th>
<th>Proportion of Emergency Department Visits Resulting in Hospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most commonly implicated medications</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Warfarin</td>
<td>32,173</td>
<td>33.2 (32.0-34.5)</td>
</tr>
<tr>
<td>Insulin</td>
<td>13,954</td>
<td>13.9 (12.6-15.0)</td>
</tr>
<tr>
<td>Oral antplatelet agents</td>
<td>13,363</td>
<td>13.3 (12.5-14.1)</td>
</tr>
<tr>
<td>Oral hypoglycemic agents</td>
<td>10,656</td>
<td>10.7 (9.1-12.3)</td>
</tr>
<tr>
<td>Opioid analgesics</td>
<td>4,778</td>
<td>4.8 (3.5-6.1)</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>4,205</td>
<td>4.2 (3.9-4.5)</td>
</tr>
<tr>
<td>Diuretics</td>
<td>3,258</td>
<td>3.5 (3.2-3.8)</td>
</tr>
<tr>
<td>Antineoplastic agents</td>
<td>3,329</td>
<td>3.3 (2.9-3.8)</td>
</tr>
<tr>
<td>Antihypertensive agents</td>
<td>2,899</td>
<td>2.9 (2.1-3.7)</td>
</tr>
<tr>
<td>Statin agents</td>
<td>2,870</td>
<td>2.9 (1.7-4.1)</td>
</tr>
<tr>
<td>Sedative or hypnotic agents</td>
<td>2,469</td>
<td>2.5 (1.6-3.3)</td>
</tr>
<tr>
<td>Anticoagulants</td>
<td>1,453</td>
<td>1.7 (0.6-2.4)</td>
</tr>
<tr>
<td>Diuretics</td>
<td>1,071</td>
<td>1.1 (0.6-1.8)</td>
</tr>
<tr>
<td>High-risk or potentially inappropriate medications</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>MCG3 high-risk medications</td>
<td>1,267</td>
<td>1.2 (0.7-1.7)</td>
</tr>
<tr>
<td>Beers criteria potentially inappropriate medications</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Beers criteria potentially inappropriate medications, excluding digoxin</td>
<td>3,370</td>
<td>3.2 (2.3-4.3)</td>
</tr>
</tbody>
</table>
Safety Risks with Anticoagulants

Complex dosing and monitoring
   Narrow Therapeutic index
   Food/Drug Interactions
   Patient Adherence

Safety Risks with Diabetic agents

Dose adjustments
   Multiple products available
   Administration and dosing errors
   Pharmacology of the drugs
   Complex disease
   Patient Adherence
Safety Risks with Opioids

Top Prescribed Medication
Dependency and Tolerance
Drug Interactions
Multiple strengths and forms available
Prescribing and administration errors
Monitoring requirements

Characteristics of Patients at Higher Risk for ADEs

Polypharmacy (>5 meds)
   Elderly > 80
   Low Literacy level
Medications – Warfarin, Insulin, Oral Hypoglycemics, and Opioids
4 or more co-existing health conditions
   History of mental/emotional illness
   Re-hospitalization in past 30 days
   Limited support system at place where they live
   Non-adherence to medication regimen
High Alert Medication Best Practices

Expert team for coordination and management of patients
Standard protocols and guidelines
Medication double check process
Annual and ongoing staff training
Report events and near misses
Involve patients and family

Breakout

Which Best Practice could make the most difference in improving safety with medications?

How would you operationalize this?
### Intervention Bundle

**Risk Stratification**

**Best Possible Medication History/Admit List** *

**Transfer/Discharge Medication Reconciliation** **

**Patient Counseling**

**Communication with next provider**

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1. **HEALTHCARE UTILIZATION**
   - Limit interventions to elderly
   - Intensive pharmacy involvement

2. **POTENTIAL ADEs**
   - Improve access to pre-existing electronic sources of pre-admit medications

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MARQUIS Med Recon Materials

Society of Hospital Medicine, MARQUIS Manual. October 2014.
Medication Reconciliation Post-Discharge

Hospital Readmissions

- N = 494
- Patients Readmitted
- 7 Day
- 14 Day
- 30 Day

<table>
<thead>
<tr>
<th>Discontinued Meds</th>
<th>Dose Changes</th>
<th>Medication Omissions</th>
<th>Therapeutic Duplicates</th>
<th>Drug-Drug Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>29%</td>
<td>27%</td>
<td>27%</td>
<td>12%</td>
<td>5%</td>
</tr>
</tbody>
</table>

80% of patients had at least one medication discrepancy
31% of drug interactions were clearly contraindicated

Business Case For Med Rec

1 in 100 errors found by Pharmacist Med Rec = Harmful ADE*

2:1 Return on Investment (ROI)*

AND:
- Readmissions
- Penalties
- Regulatory compliance
- Staff/Patient satisfaction

Cost of an ADE = $4633 - $10,365

*Society of Hospital Medicine, MARQUIS Manual. October 2014.

Financial Savings

Results:

For every 25 patients that receive pharmacist medication reconciliation, one hospital readmission is prevented.

Prevention of one medical hospital readmission is an estimated savings of $15,000

2012

3,000 patients

Projected $1.6 million in savings

Social Marketing

“The systematic application of marketing to achieve specific behavioral goals for a social good”

CHANGING BEHAVIOR

Medication List

<table>
<thead>
<tr>
<th>What I'm taking</th>
<th>Form (pill, injection, liquid, patch, etc.)</th>
<th>Dosage</th>
<th>How Much and When</th>
<th>Use (regularly or occasionally)</th>
<th>Start/Stop Dates (1/5/05 - 3/5/05)</th>
<th>Notes, Directions, Reasons for Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<td></td>
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<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Be sure to include ALL prescription drugs, over-the-counter drugs, vitamins, and herbal supplements.

Partners in Safety Campaign – Walworth, TX

- Paper Med Cards
- Educational Programs
- Community Involvement
- Provider/Patient Coordination

17% Medication list accuracy
The choice is ours....

Safe Patient

Focus

Med Rec

Talk

Med List

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References


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