Reducing Medication-Related Problems During Transitions

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Learning Objectives

- At the completion of this activity, the participant will be able to:
  - Describe medication-related problems that occur during transitions in care
  - Review programs aimed at improving medication management during transitions

Medications During Transitions

- Background
- What are medication-related problems?
- What is medication reconciliation?
- Why do we need it?
- Barriers to implementation
- Limitations of medication reconciliation
- Case study
- Best practices
- Tools and resources
- Making enhancements
Clinical Practice Guidelines, the Elderly, and Multiple Comorbid Conditions

- Hypothetical 79-yr-old woman with COPD, Type 2 DM, osteoarthritis, hypertension, and osteoporosis
- If followed published CPGs would
  - Be prescribed 12 routine medications
  - Cost of $406/month
- Implications
  - Increased risk of medication related problems
  - Potential for diminished quality of care


Medication-Related Problems

- Untreated indication
- Subtherapeutic dosage
- Drug use without indication
- Overdosage
- Improper drug selection
- Failure to receive medication
- Adverse drug reaction/event
- Drug interaction


Adverse Drug Events and the Elderly

Data from CDC – Individuals Treated in US Emergency Department

Budnitz DS et al. JAMA 2006;296:1838-66
Estimated Rates of Emergency Hospitalizations for Adverse Drug Events in Older U.S. Adults, 2007–2009

Independent Risk Factors for Having a Preventable ADE in NFs

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.55</td>
<td>0.30 - 0.99</td>
</tr>
<tr>
<td>No. regularly scheduled meds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>1.0</td>
<td>Referent</td>
</tr>
<tr>
<td>5-6</td>
<td>1.7</td>
<td>0.83 - 3.5</td>
</tr>
<tr>
<td>7-8</td>
<td>3.2</td>
<td>1.4 - 6.9</td>
</tr>
<tr>
<td>&gt;=9</td>
<td>2.9</td>
<td>1.3 - 6.8</td>
</tr>
<tr>
<td>New resident*</td>
<td>2.9</td>
<td>1.5 - 5.7</td>
</tr>
</tbody>
</table>

*within 60 days of admission

Hospital Admission

On hospital admission, more than 50% of patients have at least one medication discrepancy*

- Approximately 40% of those have potential to cause harm

*Discrepancy defined as error between admission medication orders and patient interview of medication history.
Hospital Discharge

On discharge from the hospital with possible or probable patient discomfort or clinical deterioration . . .

30% of patients have at least one medication discrepancy *

* Most common discrepancy is incomplete prescription requiring clarification.


Hospital to Nursing Home

Transfers and Adverse Event

Adverse drug events (ADEs) attributable to medication changes occurred in 20% of bi-directional transfers

50% of ADEs were caused by discontinuation of medications during hospital stay


What are Medication Discrepancies?

- Unexplained differences among documented medication regimens
- Most common medication/categories involved
  - Cardiovascular agents (ACE/ARB, statins, beta blockers)
  - Opioid analgesics
  - Hypoglycemic agents (Insulin, oral agents)
  - Anticoagulants (LMWH, warfarin, dabigatran, etc.)
  - Antibiotics
  - Psychotropic medications (antipsychotics, sedatives)

Categories of Medication Discrepancies

- Intentional discrepancies (documented/undocumented)
- Unintentional discrepancies
- New medication
- Omitted/discontinued medications
- Substituted medications
- Therapeutic duplications
- Incomplete/ illegible instructions for use
- Incorrect dose
- Incorrect schedule

Examples of Duplicative Prescribing

- Therapeutic duplication with the same drug
  - Enalapril 10 mg daily, Vasotec 5 mg daily
  - Lopressor 50 mg one tablet twice a day, Toprol XL 50 mg one tablet twice a day
  - Adalat 10 mg three times a day, Procardia XL 30 mg daily

- Therapeutic duplication within a drug class
  - Pravachol 10 mg daily, Lipitor 10 mg daily
  - Hytrin 1 mg orally at bedtime, Carabao 1 mg daily

- Therapeutic duplication with components of combination products
  - Enalapril 5 mg daily, Vaseretic one tablet daily
  - Hydrochlorothiazide 50 mg daily, Maxzide one capsule daily

Institute for Safe Medication Practices

What is Medication Reconciliation?

- Joint Commission:
  - The process of comparing a patient's medication orders to all of the medications that the patient has been taking
  - Reconciliation is done to avoid medication errors such as omissions, duplications, interactions, and the need to continue medications
  - Provides the patient/resident (or family) with written information on the medications they should take
  - Explains the importance of managing medication information when he/she leaves the organization's care
Evolution of Medication Reconciliation

NPSG.08.01.01: Accurately and completely reconcile medications across continuum of care

Implemented 1/2006

NPSG.03.06.01: Maintain and communicate accurate patient medication information

Implemented 7/2011

Medication Reconciliation Overview


Elements of Best Possible Medication Discharge Plan

- Changes to prior medication regimen
  - New medications and rationale
  - Stopped medications and rationale
  - Dose/ regimen change to current (at admission) medications and rationale

- Unresolved/ongoing medication related issues
  - Monitoring – A1C, lipid levels, blood pressure
  - Restarting stopped medications – Aspirin and GI bleeding

- Reconciled medication list with
  - Medication, dose, directions for use
  - Reason for use in lay language
  - Time limitations – anticoagulants, antibiotics
Barriers to Implementing Medication Reconciliation

- Lack of resources, staffing and/or budgetary support
- Poor team communication
- Resistance to change
- Completion rates provide no data on health impact
- Lack of resources to gather such data
- Dilemma that the number of error reports could go up if the new process results in more recognition

Sanchez SH et al. BMC Health Services Research 2014;14:290.

Tip

- Seeing medication information does not mean it is accurate
- Practitioners should routinely access and compare multiple sources of medication information
  - to get a “gold standard” medication list
  - or, also referred to as the “Best Possible Medication History”

Limitations of Medication Reconciliation

- Usually does not include a comprehensive medication review and assessment
- Inaccurate data in, poor results out – bad intake medication list perpetuated through stay
- Time available often inadequate to provide assessment of patient understanding of medication list
- Inability of older adults to recall their drugs and medical conditions
  - 22% correctly named drugs from memory
  - 34% correctly named medical conditions
  - Fewer than half correctly recalled number of drugs taking

Tools to Aid in Medication Reconciliation

- **Medication Discrepancies Tool (MDT)**
  - Designed to identify types and sources of medication discrepancies that occur during transition in care

- **Medication Reconciliation – Review of Systems Subject (MR ROSS)**
  - Designed to identify additional medications missed during usual care interviews

- **Medication Reconciliation Worksheet – INTERACT 4.0**
  - Designed to identify clarifications and discrepancies that need to be resolved with the resident PCP
  - [https://interact2.net/](https://interact2.net/)

A Case of Medication Problems During a Transition of Care

- 87 yo African American woman
- Living in the community with assistance of daughter
- History: CHF, T2DM, osteoarthritis, reflux disease, constipation, hypothyroidism, hx of diverticulitis
- Allergy to penicillin
- Hospitalization for penicillin desensitization
- Meds on hospital discharge:

<table>
<thead>
<tr>
<th>Pregabalin 100 mg bd</th>
<th>Oxycodone 10 mg q6h</th>
<th>Furosemide 20 mg od</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin 81 mg od</td>
<td>Simvastatin 40 mg od</td>
<td>Atorvastatin 10 mg od</td>
</tr>
<tr>
<td>Enalapril 20 mg od</td>
<td>Glipizide 2.5 mg od</td>
<td>Famotidine 20 mg od</td>
</tr>
<tr>
<td>Docusate sodium 100 mg od</td>
<td>Pen G 1 million units IV every 4 h</td>
<td>Lovenox 30 mg SC od</td>
</tr>
</tbody>
</table>

A Case ...(cont)

- Medications on admission to LTACH:

<table>
<thead>
<tr>
<th>Pregabalin 100 mg od</th>
<th>Oxycodone 100 mg three times daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin 81 mg od</td>
<td>Furosemide 40 mg od</td>
</tr>
<tr>
<td>Estriol 40 mg od</td>
<td>Atorvastatin 2.5 mg od</td>
</tr>
<tr>
<td>Fenofibrate 30 mg od</td>
<td>Glipizide 2.5 mg od</td>
</tr>
<tr>
<td>Pen G 1 million units IV every 4 h</td>
<td>Docusate sodium 100 mg od</td>
</tr>
</tbody>
</table>

- Received 2 doses of oxycodone 100 mg 8 hours apart
- Suffered respiratory arrest
- Had a DVT, pressure sores, multiple hospitalizations over next 5 months until death
Best Practices: Medication Reconciliation

- Pharmacist involvement
  - Inpatient setting on intake and departure
  - Post-discharge assessment/follow-up
  - In-home review
  - Direct communication with provider about changes
- Patient-friendly reconciled medication schedules on discharge
- Prioritize efforts
  - High-risk patients: number of medications, disease conditions (e.g., COPD, MI, heart failure, composite scores)
  - High-risk medications: opioids, insulin, anticoagulants (e.g., warfarin, dabigatran, LMWH, etc)/antiplatelets (e.g., aspirin, clopidogrel), digoxin, oral hypoglycemic agents

Annals of Internal Medicine

Medication Reconciliation During Transitions of Care as a Patient Safety Strategy
A Synthesis Review

Beyond Med Rec ...
Best Practice: HomeMeds℠

A Program of the Partners In Care Foundation

WellTransitions

A continuum of care you can count on.

Primary Care Resource Center (PCRC) Project

Follow-up program improves patient care and saves money

September 5, 2014 12:35 AM

For more info: www.PRHI.org
Provider Communication

Q. Do you remember having any conversations with the physician or being present for any conversations with the physician about what the plan of care for your father was?
   A. The plan of care was to treat a kidney infection.
Q. And how was that going to be accomplished?
   A. They were going to give him an antibiotic and they gave him a prescription.
Q. Was there any discussion about the choice of antibiotic?
   A. No.
Q. Any discussion about the risks or benefits of the medication?
   A. No.
Q. Any discussion of potential interactions?
   A. No.
Q. Do you recall having any conversation with the physician, nurse, or anyone else there about things to look for while on that medication?
   A. No.
Preempting Med Rec - CMR and CMM

- Comprehensive Medication Review (CMR)
  - Part of CMS Medicare Part D Guidance – 2013 update
  - Once-a-year comprehensive review (face-to-face/telehealth)
  - Focus on multiple chronic diseases and polypharmacy
  - Medication related problems/medication knowledge
  - Creates a personal medication list and action plan

- Comprehensive Medication Management (CMM)
  - Defined by Patient-Centered Primary Care Collaborative
  - Includes assessment of patient’s preferences/beliefs
  - More focus on follow-up/collaborative care/patient’s goals

Discharge Planning (New Section 483.21)

We propose to require that the resident’s discharge summary include a reconciliation of all discharge medications with the resident’s pre-admission medications (both prescribed and over-the-counter).
Nursing Home Discharge to Community

To be discussed with patient -

The following statements are about medications:

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>I have a list of my medications and instructions on how to take them when I am alone. I understand I should take only these medications and I need to talk with my regular doctor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>NO</td>
<td>I understand why I am taking each of my medications.</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>I know the major side effects of the medications and a number to call if they occur.</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>I know where to get my medications.</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>I can afford to get my medications.</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>I know how to pick up or get my medications.</td>
</tr>
</tbody>
</table>

AMDA – with permission.

What Can We Do?

- Evaluate our own practice settings
- Seek guidance of others:
  - Example - www.otcass.org www.cfec.org/integratingcare/toolkit.htm
- Assure patient has:
  - An updated medication list at each encounter
  - An understanding of treatment plan
  - An understanding of their role in care
- Assure healthcare team has:
  - Asked the patient and caregiver about their preferences
  - Knowledge of next care environment
  - Tools to assist in improving care transitions and communication of an accurate medication list
- Engage the community
Executive Summary

- 653 Medicare beneficiaries discharged from hospitals to SNF for post-acute care (35 days or less)
- Assessed for adverse events (AE) [SNF Trigger Tool] and temporary harm and if preventable
- 2 stage attribution process; screener, MD panel
- 22% experienced an AE during SNF stay
- 59% were deemed preventable
- 11% experienced harm (60% hospitalized)

Table 3: Adverse Events Identified Among Medicare SNF Residents by Category

<table>
<thead>
<tr>
<th>Types of Adverse Events</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Events Related to Medication</td>
<td></td>
</tr>
<tr>
<td>- Medication-induced delirium or other change in mental status</td>
<td>12%</td>
</tr>
<tr>
<td>- Excessive bleeding due to medication</td>
<td>5%</td>
</tr>
<tr>
<td>- Fall or other trauma with injury secondary to effects of medication</td>
<td>4%</td>
</tr>
<tr>
<td>- Constipation, obstructed, and less related to medication</td>
<td>4%</td>
</tr>
<tr>
<td>- Other medication-related events</td>
<td>14%</td>
</tr>
</tbody>
</table>

Table 4: Temporary Harm Events Identified Among SNF Residents by Category

<table>
<thead>
<tr>
<th>Types of Temporary Harm Events</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Events Related to Medication</td>
<td></td>
</tr>
<tr>
<td>- Hypoglycemic episode (a fall or significant drop in blood glucose)</td>
<td>10%</td>
</tr>
<tr>
<td>- Fall or other trauma with injury associated with medication</td>
<td>0%</td>
</tr>
<tr>
<td>- Medication-related delirium or other change in mental status</td>
<td>7%</td>
</tr>
<tr>
<td>- Venous or other nosocomial infections related to medication</td>
<td>4%</td>
</tr>
<tr>
<td>- Allergic reaction to medications (e.g., rash, itching)</td>
<td>2%</td>
</tr>
<tr>
<td>- Other medication-related events</td>
<td></td>
</tr>
</tbody>
</table>
Tips

- When recording medications, put high-priority drugs at top of list and alphabetize others.
- Check high priority drugs immediately and come back to low priority drugs later.
- Consider grouping/listing meds by therapeutic use category.
- Target high risk patients.

Resource List

Medication Review Exercise

- Attendees will be presented with medication lists for review and reconciliation