

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

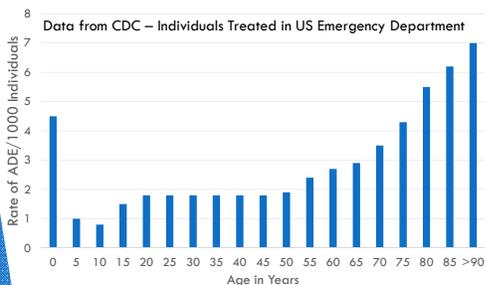
Boyd CM et al. JAMA 2005;295:716-24.

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

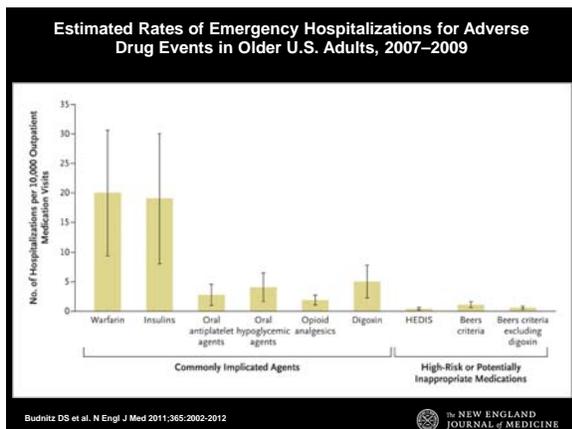
Strand LM, Morley PC, Cipolle RJ et al, 1990.

Adverse Drug Events and the Elderly



Budnitz DS et al. JAMA 2006;296:1858-66

ADE=Adverse Drug Event



Independent Risk Factors for Having a Preventable ADE in NFs

Risk Factor	Odds Ratio	95% CI
Male	0.55	0.30 - 0.99
No. regularly scheduled meds		
0-4	1.0	Referent
5-6	1.7	0.83 - 3.5
7-8	3.2	1.4 - 6.9
>=9	2.9	1.3 - 6.8
New resident ⁺	2.9	1.5 -5.7

⁺within 60 days of admission

Field TS, Gurwitz JH et al. Arch Intern Med 2001;161:1629-34.

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.

Cornish PL et al. Arch Intern Med 2005;165:424-9.

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.



Wong JD, et al. Ann Pharmacother 2008;42:1373-9.



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

Boockvar K, et al. Arch Intern Med 2004;164:545-50.



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)

Tiga J et al. J Gen Intern Med 2009;5:630-5.

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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

Boockvar KS et al. Arch Intern Med 2004;164:545-50.
Coleman EA et al. Arch Intern Med. 2005;165:1842-7.

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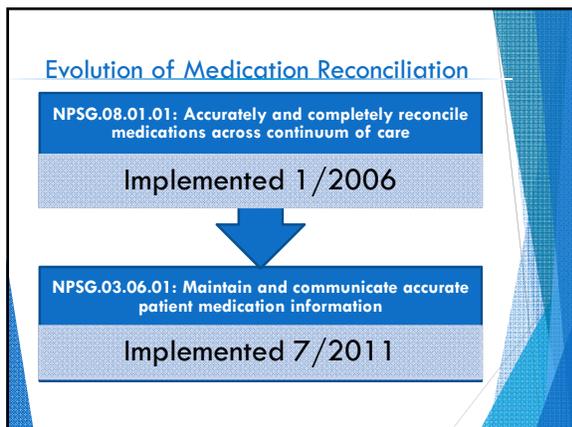
Examples of Duplicative Prescribing

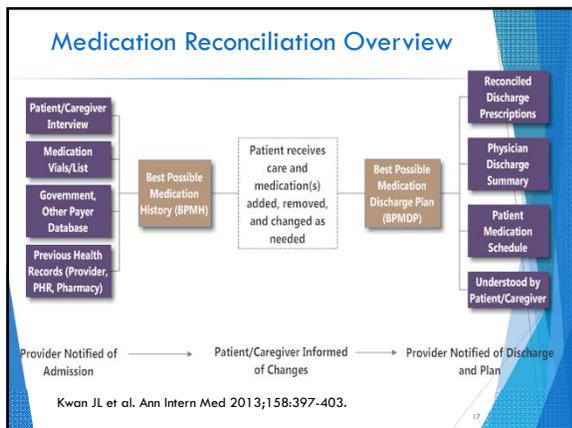
- ▶ Therapeutic duplication with the same drug
 - Enalapril 10 mg daily; Vasotec 5 mg daily
 - Lopressor 50 mg one tablet twice a day; Toprol XL 50 mg one tablet twice a day
 - Adalat 10 mg three times a day; Procardia XL 30 mg daily
- ▶ Therapeutic duplication within a drug class
 - Pravachol 10 mg daily; Lipitor 10 mg daily
 - Hytrin 1 mg orally at bedtime; Cardura 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

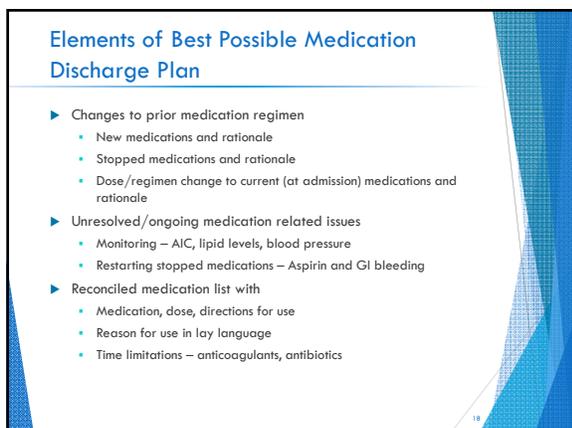
Institute for Safe Medication Practices

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







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.

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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

Jones G et al Drugs Aging 2015;32:329-36.

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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
 - Smith JD et al. Am J Geriatr Pharmacother 2004;2:141-7.
- ▶ Medication Reconciliation – Review of Systems Subject (MR ROSS)
 - Designed to identify additional medications missed during usual care interviews
 - Vouri SM, Marcum ZA. J Am Pharm Assoc 2013;53:652-8.
- ▶ Medication Reconciliation Worksheet – INTERACT 4.0
 - Designed to identify clarifications and discrepancies that need to be resolved with the resident PCP
 - <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:

Pregabalin 100 mg three times daily	Oxycodone 10 mg twice daily
Aspirin 81 mg once daily	Enalapril 20 mg once daily
Simvastatin 40 mg once daily	Glipizide 2.5 mg once daily
Famotidine 20 mg once daily	Docusate sodium 100 mg twice daily
Pen G 1 million units IV every 4 h	Lavenox 30 mg SC once daily

A Case ...(cont)

- ▶ Medications on admission to LTACH:

Pregabalin 100 mg once daily	Oxycodone 100 mg three times daily
Aspirin 81 mg once daily	Enalapril 20 mg once daily
Simvastatin 40 mg once daily	Glipizide 2.5 mg once daily
Famotidine 20 mg once daily	Docusate sodium 100 mg twice daily
Pen G 1 million units IV every 4 h	

- ◆ Received 2 doses of oxycodone 100 mg 8 hours apart
- ◆ Suffered respiratory arrest
- ◆ Had a DVT, pressure ulcers, 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 SUPPLEMENT

Medication Reconciliation During Transitions of Care as a Patient Safety Strategy

A Systematic Review
Janice L. Kwan, MD¹; Lisha Lu, MPH¹; Margaret Sampson, MLIS, PhD²; and Kaveth G. Shojania, MD³

Journal of Hospital Medicine
www.journalofhospitalmedicine.com

TRANSFORMING HEALTHCARE CME

Making Inpatient Medication Reconciliation Patient Centered, Clinically Relevant and Implementable: A Consensus Statement on Key Principles and Necessary First Steps

Meaningful Use Core Measures
Measure 14 of 17
Date Issued: October, 2012

Medication Reconciliation	
Objective	The EP who receives a patient from another setting of care or provider of care or believes an encounter is relevant should perform medication reconciliation.
Measure	The EP who performs medication reconciliation for more than 50 percent of transitions of care in which the patient is transitioned into the care of the EP.
Exclusion	Any EP who was not the recipient of any transitions of care during the EHR reporting period.

Beyond Med Rec ...



Best Practice: HomeMedsSM

HomeMeds.org
Medication Management Improvement System

A Program of Partners in Care Foundation



Partners in Care
FOUNDATION
Improving the Way We Deliver Care

WellTransitions

Walgreens Services For Business

Access Client Portals • Service Locator

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Health System Services
Outpatient Pharmacy
WellTransitions
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View all Pharmacist Profiles

Primary Care Resource Center (PCRC) Project

Follow-up program improves patient care and saves money

September 8, 2014 12:00 AM



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For more info: www.PRH.org

AMA
AMERICAN MEDICAL ASSOCIATION
ama-assn.org



There and Home Again, Safely

5 Responsibilities of Ambulatory Practices in High Quality Care Transitions

The High 5s Project Standard Operating Protocol



Assuring Medication Accuracy at Transitions in Care: Medication Reconciliation

<http://www.who.int/patientsafety/implementation/solutions/high5s/en/>

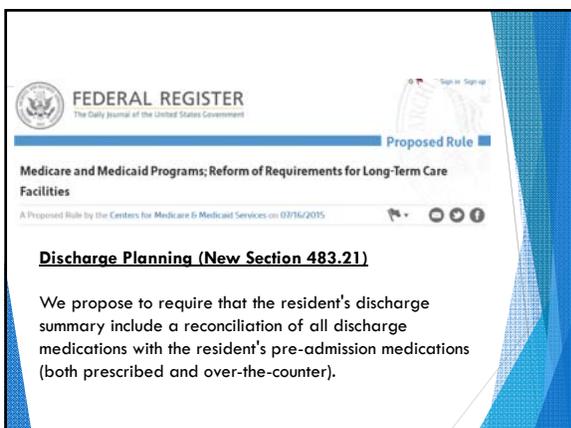
Provider Communication

- ▶ 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?
 - 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





PHARMACY SERVICES (§483.45)

Drug Regimen Review:

- ✓ **Adds the requirement** that a pharmacist review a resident's medical chart at least every 6 months and
 - When the resident is new to the facility,
 - Resident returns or is transferred from a hospital or other facility
 - During each monthly drug regimen review when the resident has been prescribed or is taking
 - Psychotropic drug
 - Antibiotic
 - Or any drug the QAA Committee has requested be included in the pharmacist's monthly drug review

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Nursing Home Discharge to Community

▶ To be discussed with patient -

The following statements are about medications:

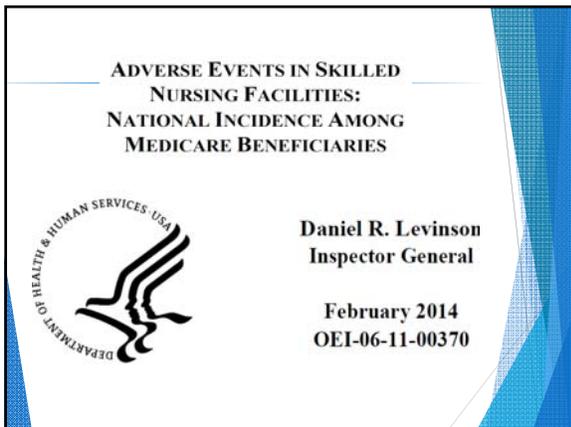
YES	NO	I have a list of my medications and instructions on how to take them when I am at home. I understand I should take only these medications until I meet with my regular doctor.
YES	NO	I understand why I am taking each of my medications.
YES	NO	I know the major side effects of the medications and a number to call if they occur.
YES	NO	I know where to get my medications.
YES	NO	I can afford to get my medications.
YES	NO	I know how to pick up or get my medications.

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AMDA – with permission.

What Can We Do?

- ▶ Evaluate our own practice settings
- ▶ Seek guidance of others:
 - Example - www.ntocc.org www.cfm.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



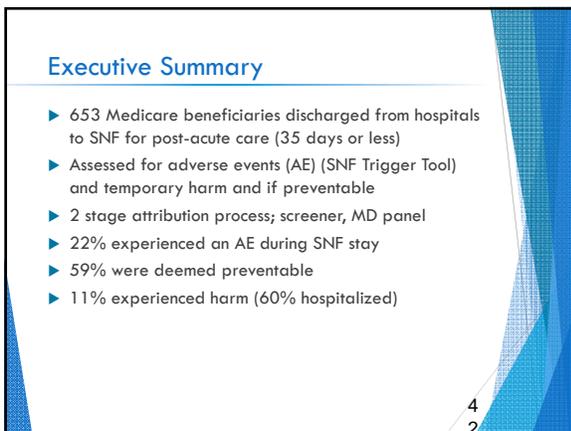


Table 3: Adverse Events Identified Among Medicare SNF Residents by Category

Types of Adverse Events	Percentage*
Events Related to Medication	37%
• Medication-induced delirium or other change in mental status	12%
• Excessive bleeding due to medication	5%
• Fall or other trauma with injury secondary to effects of medication	4%
• Constipation, obstipation, and ileus related to medication	4%
• Other medication events	14%

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

Types of Temporary Harm Events	Percentage*
Events Related to Medication	43%
• Hypoglycemic episodes (e.g., low or significant drop in blood glucose)	16%
• Fall or other trauma with injury associated with medication	9%
• Medication-induced delirium or other change in mental status	7%
• Thrush and other nonsurgical infections related to medication	4%
• Allergic reactions to medications (e.g., rash, itching)	3%
• Other medication events	3%

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

- ▶ The High 5s Project, Medication Reconciliation Implementation Guide, Assuring Medication Accuracy at Transitions in Care. Agency for Healthcare Research and Quality, World Health Organization, and Commonwealth Fund, USA, 2014. Available at www.who.int/patientsafety/implementation/solutions/high5s/
- ▶ Gleason KM, Brake H, Agramonte V, Perfetti C. Medications and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. AHRQ publication No. 11(12)-0059. Rockville, MD: Agency for Healthcare Research and Quality. Revised August 2012. Available at www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources

Resource List

- ▶ Herndon L, Bones C, Bradke P, Rutherford P. How-to Guide: Improving Transitions for the Hospital to Skilled Nursing Facilities to Reduce Avoidable Rehospitalizations. Cambridge, MA: Institute for Healthcare Improvement; June 2013. Available at www.IHI.org
- ▶ Sokol PE and Wynia MK, writing for the AMA Expert Panel on Care Transitions. There and Home Again, Safely Five Responsibilities of Ambulatory Practices in High Quality Care Transitions. American Medical Association, Chicago, IL 2013. Available at: www.ama-assn.org/go/patientsafety

Medication Review Exercise

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