MEDICATION RECONCILIATION AT TRANSITIONS OF CARE

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Disclosures

- Kendall Crane, Pharm.D. – Nothing to disclose

Objectives

- Define medication reconciliation
- Identify common barriers to implementation of medication reconciliation
- Recognize a pharmacist's contributions and role in medication reconciliation
- Discuss the foundational concepts for improving medication reconciliation

Brief history of medication reconciliation

- "*To Err is Human*"
- The Joint Commission on Accreditation of Healthcare Organizations designate it National Patient Safety Goal (NPSG) 8
- The Joint Commission revokes med rec as an accreditation requirement
- The Joint Commission's revised med rec requirement (NPSG 03.06.01) became effective

What is med rec?

"Medication reconciliation is the comprehensive evaluation of a patient's medication regimen any time there is a change in therapy in an effort to avoid medication errors such as omissions, duplications, dosing errors, or drug interactions, as well as to observe compliance and adherence patterns. This process should include a comparison of the existing and previous medication regimens and should occur at every transition of care in which new medications are ordered, existing orders are rewritten or adjusted, or if the patient has added nonprescription medications to [his or her] self-care."

Chen D, Burns A. Summary and Recommendations of ASHP-APhA Medication Reconciliation Initiative Workgroup Meeting, February 12, 2007. Available at: http://www.ashp.org/s_ashp/docs/files/MedRec_ASHP_APhA_Wkgrp_MtgSummary.pdf.

What is med rec?

"Medication reconciliation is the process of creating and maintaining the most accurate list possible of all medications a patient is taking — including drug name, dosage, frequency, and route — and using that list to guide therapy."

— Institute for Healthcare Improvement

Institute for Healthcare Improvement. 5 Million Lives: Preventing Adverse Drug Events (Medication Reconciliation): How-to Guide. Available at: http://www.ihi.org/IHI/Programs/Campaign/ADEsMedReconciliation.htm. Published Oct. 1, 2008.

Steps to complete Med Rec

The Joint Commission[1]

1. Develop current med list
2. Develop list of meds to be prescribed
3. Compare the two lists
4. Make decisions based on comparison
5. Communicate new list to patient/caregiver

The Institute for Healthcare Improvement [2]

1. Verification
2. Clarification
3. Reconciliation
4. (Communication)*

1. The Joint Commission. Using medication reconciliation to prevent errors. *Sentinel Event Alert.* Issue 35. January 25, 2006. Available at: http://www.jointcommission.org/assets/1/18/SEA_35.PDF.
2. Institute for Healthcare Improvement. 5 Million Lives: Preventing Adverse Drug Events (Medication Reconciliation): How-to Guide. Available at: http://www.ihi.org/IHI/Programs/Campaign/ADEsMedReconciliation.htm. Published Oct. 1, 2008.

Components to Med Rec

- Medication (e.g., drug name and dose)
- Indication (e.g., Take for…)
- Instructions for use (e.g., When do I take it?)
- Start date
- Stop date
- Ordering prescriber/contact information (e.g., doctor)
- Special instructions

American Pharmacists Association. Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model, Version 2.0.March 2008. Available at: http://www.pharmacist.com/MTM/CoreElements2.

Why is this important?

- Approximately 1.5 million preventable ADE's occur annually as a result of medication errors, cost of more than $3 billion per year[1]
- Approximately half of all hospital-related medication errors and 20% of all ADE's attributed to poor communication at transitions and interfaces of care[2,3]
- One in five patients discharged from hospitals suffers an adverse event, 72% of which are related to medications[4,5]

1. Institute of Medicine, *Preventing Medication Errors.* Washington, DC: The National Academies Press; 2007
2. Barnsteiner JH. Medication reconciliation; transfer of medication information across settings: keeping it free from error. *J Infus Nurs.* 2005;28 [2 suppl]:31-6.
3. Rozich J, Roger R. Medication safety: one organizations approach to the challenge. *J Clin Outcomes Manag.* 2001;8:27-34
4. Forster AJ, Murff HJ, Peterson JF, et al. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med.* 2003;138:161-7.
5. Forster AJ, Clark HD, Menard A, et al. Adverse events among medical patients after discharge from hospital. *CMAJ.* 2004;170:345-9.

Why is this important?

- ADE's account for 2.5% of emergency department visits for all unintentional injuries and 6.7% of those leading to hospitalizations[1]
- Average hospitalized patient subject to at least one medication error per day[2]
- Occurrence of unintended medication discrepancies at the time of hospital admission ranges from 30 to 70%[3,4]

1. Budnitz DS, Pollock DA, Weidenbach KN, et al. National surveillance of emergency department visits for outpatient adverse drug events. *JAMA.* 2006;296:1858-66.
2. Institute of Medicine, *Preventing Medication Errors.* Washington, DC: The National Academies Press; 2007
3. Cornish PL, Knowles SR, Marchesano R, et al. Unintended medication discrepancies at the time of hospital admission. *Arch Intern Med.* 2005; 165:424-9
4. Gleason KM, Roszek JM, Sullivan C, et al. Reconciliation of discrepancies in medication histories and admission orders of newly hospitalized patients. *Am J Health Syst Pharm.* 2004;61:1689-95

Why is this important?

- Forster et al: 72% of discharge AE are drug-related
- Moore et al. (J Gen Intern Med 2003)
  - 42% discharged pts had at least 1 med error
- Wong et al. (Ann Pharmacother 2008)
  - 41% discharges with unintentional med discrepancies
    - 29% could potentially have affected outcomes

Forster AJ, Clark HD, Menard A, et al. Adverse events among medical patients after discharge from hospital. *CMAJ.* 2004;170:345-9.
Moore C, Wisnivesky J, Williams S, et al. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. J Gen Intern Med 2003;18:646–51.
Wong JD, Bajcar JM, Wong GG, et al. Medication reconciliation at hospital discharge. Ann Pharmacother 2008;42:1373–9.

Admission Medication Reconciliation

- Medication discrepancies on admission result in discrepancies at discharge
- Cornish et al. (Arch Intern Med 2005)
  - 54% admissions with at least 1 unintended discrepancy
  - 39% risked potential harm or clinical deterioration

Cornish PL, Knowles SR, Marchesano R, et al. Unintended medication discrepancies at the time of hospital admission. Arch Intern Med 2005;165:424–9.

Discharges and Adverse Events

- Forster et al. (CMAJ 2004, Arch Int Med 2003)
  - ~20% of discharges associated with AEs
    - ~50-60% were preventable
  - Increased health care utilization
    - 21% additional MD visit
    - 12% additional ED visit
    - 17% re-admission
  - 3% permanent disability, 3% death

Forster A, Murff H, Peterson J, et al. The incidence and severity of adverse events affecting patients after discharge from the hospital. Ann Intern Med 2003;138: 161–7.
Forster AJ, Clark HD, Menard A, et al. Adverse events among medical patients after discharge from hospital. CMAJ. 2004 Feb 3;170(3):345-9.

Post-discharge Medication Discrepancies

- Coleman et al. (Arch Intern Med 2005)
  - 14% post-hospital transitions to home with medication discrepancies
    - ~50% were system-associated
      - Incomplete or inaccurate d/c instructions
      - Conflicting information from different sources
  - CHF and polypharmacy associated with discrepancies
  - 14% required readmission vs 6% without discrepancies

Coleman EA, Smith JD, Raha D, et al. Posthospital medication discrepancies: prevalence and contributing factors. Arch Intern Med 2005;165(16):1842–7.

Medication Reconciliation: Can Reduce Errors

- Schnipper et al. (Arch Int Med 2009)
  - RCT of computerized med rec
  - Intervention 1.05 vs control 1.44 PADEs/pt

Schnipper JL, Hamann C, Ndumele CD, et al. Effect of an electronic medication reconciliation application and process redesign on potential adverse drug events: a cluster-randomized trial. Arch Intern Med. 2009 Apr 27;169(8):771-80.

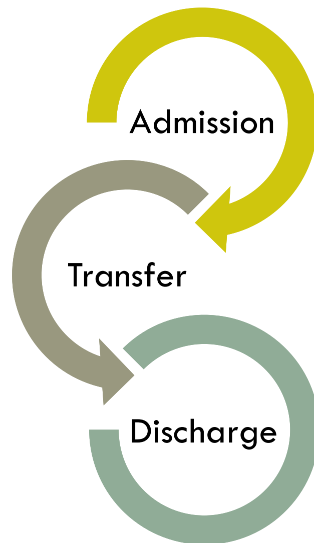
When to perform med rec?

- At every transition of care…

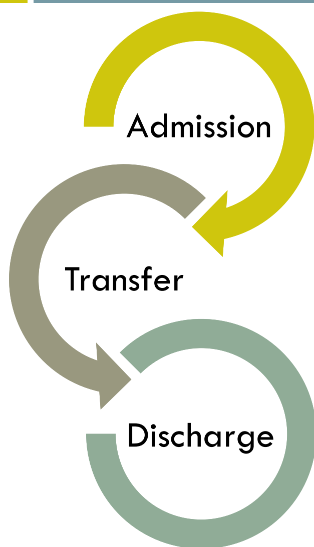
"the movement of patients between health care locations, providers, or different levels of care within the same location as their conditions and care needs change"

National Transitions of Care Coalition, NTOCC Measures Work Group. *Transitions of Care Measures.* 2008. Available at: http://www.ntocc.org/Portals/0/PDF/Resources/TransitionsOfCare_Measures.pdf.

When to perform med rec?



When to perform med rec?



Admission

- Collect list of medications patient is taking
- Make available to prescriber
  - ASAP or at least within 24 hours
- No list is perfect
  - May need to talk to several individuals

When to perform med rec?

Admission

Transfer

Discharge

Transfer

- Between levels of care
  - Home medication list
  - Current medication orders
  - Transfer orders

When to perform med rec?

Admission

Transfer

Discharge

Discharge

- Home medication list
- Current medication orders
- Discharge medication orders
- COMMUNICATION!

Objectives

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Think-pair-share

What medication reconciliation barriers (or successes) have you experienced in your practice?

Barriers[1,2]

- Additional work
- "Isn't this the physician's job?"
- Communication breakdown
- Physician/staff partial by-in
- Staffing
- "If we only had access to a computerized database, we would not have a problem"
- "We seem to be losing momentum. We have been working at this for a long time"
- Need for standardized medication list and sharing of information between patients and health care professionals

1. Institute for Healthcare Improvement. 5 Million Lives: Preventing Adverse Drug Events (Medication Reconciliation): How-to Guide. Available at: http://www.ihi.org/IHI/Programs/Campaign/ADEsMedReconciliation.htm. Published Oct. 1, 2008.
2. APhA/ASHP. Improving Care Transitions: Optimizing Medication Reconciliation. March 2012. Available at: http://www.pharmacist.com/sites/default/files/files/2012_improving_care_transitions.pdf

Standardized sharing of information

- Value, usability and portability
  - Perception vs Reality mismatch
- Consider the consumer's use of the list
  - Health care literacy
  - Language
  - Cognitive ability
  - Assistance of caregiver

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Pharmacist and Med Rec

- Medication experts
- Resolve medication related problems
  - Improper drug selection
  - Sub– and supratherapeutic dosages
  - Medication non-adherence
  - Therapeutic duplications or omissions
  - Drug interactions
  - Drugs with no indications
  - Treatment failures

Pharmacists &Med Rec: The Evidence

- Gleason et al. (J Gen Intern Med 2010)
  - Compared pharmacist and hospital physician medication histories
    - 234 (36%) patients had a medication error
    - 85% of those originated in medication histories (over half were omissions)

Gleason KM, McDaniel MR, Feinglass J, et al. Results of the Medications At Transitions and Clinical Handoffs (MATCH) study: an analysis of medication reconciliation errors and risk factors at hospital admission. J Gen Intern Med.25(5): 441-7.

Pharmacists &Med Rec: The Evidence

- Pharmacist-provided medication therapy review and consultation in various settings resulted in
  - Reductions in physician visits
  - Reductions in emergency department visits
  - Reductions in hospital days
  - Reductions in overall health care costs

American Pharmacists Association. Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model, Version 2.0.March 2008. Available at: http://www.pharmacist.com/MTM/CoreElements2.

Pharmacists &Med Rec: The Evidence

- Murphy et al. (Am J Health-Syst Pharm 2009)
  - 450-bed academic medical center
  - Admission Med Rec
    - ICU: 5.9 % (95% CI, 3.1—8.7%)
    - Medical: 11.7% (95% CI, 8.7—14.8%)
  - Discharge Med Red
    - Reduced discharge medication errors
      - Surgical: from 90% to 47% (95% CI, 42-53%; $p<0.001$)
      - Medical: from 57% to 33% (95% CI, 28-38%; $p<0.001$)

Murphy EM, Oxencis CJ, Klauck JA, et al. Medication reconciliation at an academic medical center: implementation of a comprehensive program from admission to discharge. Am J Health Syst Pharm. 2009; 66:2126 – 31.

Pharmacists &Med Rec: The Evidence

- Boockvar et al. (Am J Geriatr Pharmacother 2006)
  - Pharmacist-conducted med rec of VA NH pts post-discharge
  - Intervention 2.3% vs control 14.5% ADEs
  - OR 0.11 for discrepancy-related ADE

Boockvar KS, Carlson LaCorte H, Giambanco V, Fridman B, Siu A. Medication reconciliation for reducing drug-discrepancy adverse events. Am J Geriatr Pharmacother. 2006 Sep;4(3):236-43.

Pharmacist role in med rec

- Policy and procedure development
- Implementation and performance improvement
- Training and competency assurance
- Information systems development
- Advocacy

American Society of Health-System Pharmacists. ASHP statement on the pharmacist's role in medication reconciliation. Am J Health-Syst Pharm. 2013; 70:453–6

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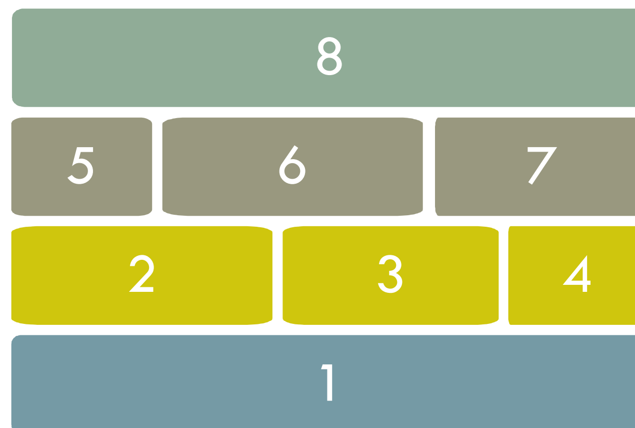
Improving Med Rec

- Foundational concepts
  - Developed by American Pharmacist Association (APhA) and American Society of Health-Systems Pharmacists (ASHP)
  - Encompass the tenets of med rec
  - Intentionally broad to allow application across a variety of practice settings

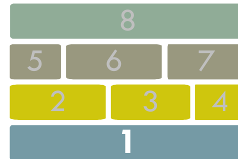
APhA/ASHP. Improving Care Transitions: Optimizing Medication Reconciliation. March 2012. Available at: http://www.pharmacist.com/sites/default/files/files/2012_improving_care_transitions.pdf

Foundational Concepts



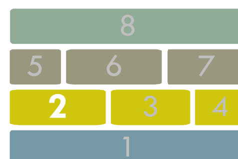
Foundational Concepts

Medication reconciliation is a key process required to improve patient care and outcomes in care transitions



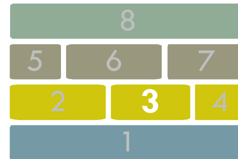
Foundational Concepts

Medication reconciliation is a patient-centered process focusing on patient safety



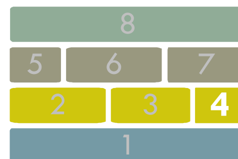
Foundational Concepts

Medication reconciliation requires an interdisciplinary, collaborative approach



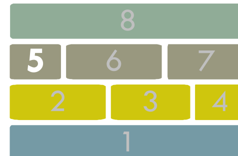
Foundational Concepts

Medication reconciliation must be based on a culture of accountability



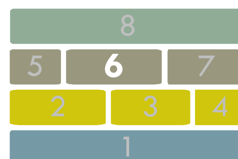
Foundational Concepts

Medication reconciliation should be standardized



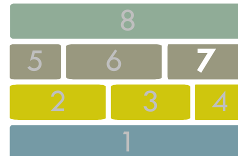
Foundational Concepts

Effective medication reconciliation requires coordinated communication



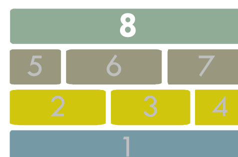
Foundational Concepts

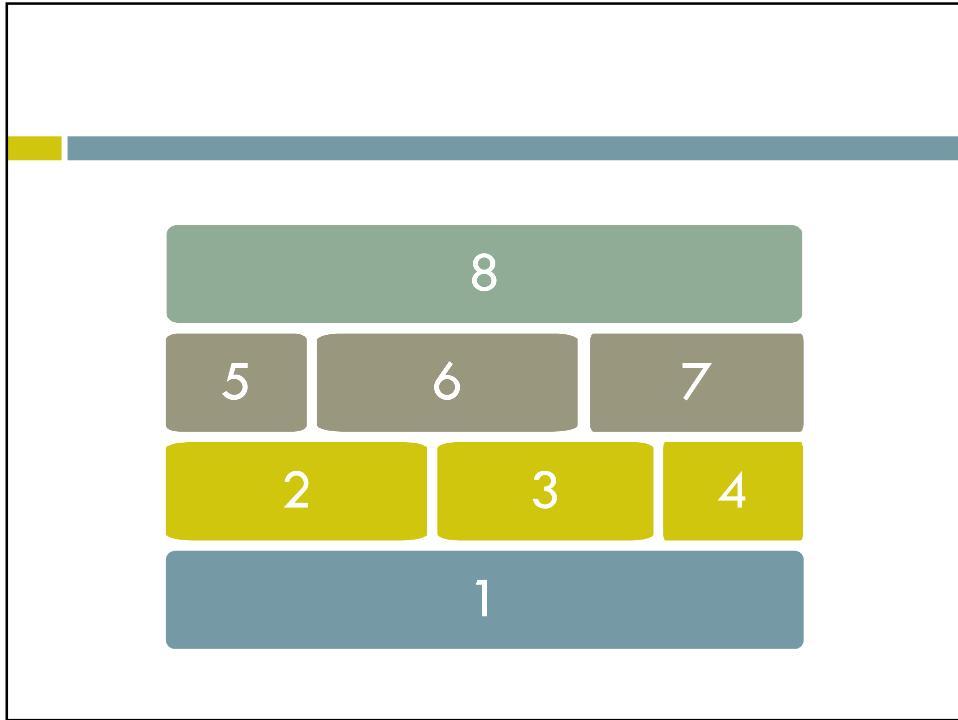
Medication reconciliation requires integration of health information technology solutions



Foundational Concepts

Medication reconciliation requires a process of continuous quality improvement

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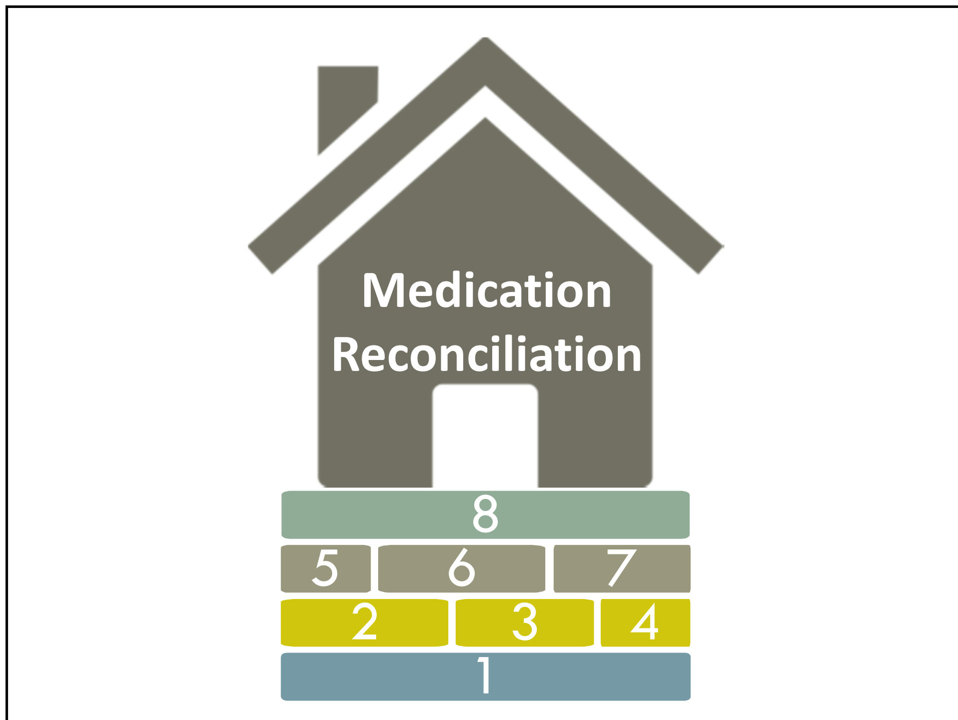
Medication Reconciliation
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Summary

- Medication reconciliation is more than just a list of medications
- Medication reconciliation needs to occur at every transition of care, otherwise:
  - Signification monetary and ADE consequences can occur
- While barriers exist, pharmacists play a vital role in successful medication reconciliation programs
- Patient safety is the ultimate goal

Questions