Transitions of Care for Patients on Anticoagulants

Objectives

- Review what medication reconciliation is
- Discuss benefits of pharmacy conducting med recs & value of having them completed
- Analyze cost savings associated with med rec process
- Talk about the future of med recs and what accrediting bodies are supporting

What is Medication Reconciliation (Med Rec)

- The process of interviewing the patient and using resources (i.e. Dr.First, patient's pharmacy, or caregivers) to determine patient's medications prior to admission, and their compliance. The medications are compared to active medications ordered for the patient, and differences are resolved.
  - List of medications to reconcile
    - RX Medications
    - Sample Medications
    - Vitamins or Herbals
    - OTCs
- Med recs should be completed at each transition of care
  - Admission
  - Transfers within hospital
  - Discharge from the hospital

Time Requirements

Average time to obtain medication history	9 minutes/patient
Average time to obtain medication history and provide necessary interventions/documentation	12 minutes/patient
Average time for chart review prior to medication history, medication history interview, and necessary interventions/ documentation	21 minutes/patient

**Based on an evaluation of 651 general medicine patients interviewed by a research pharmacist who obtained a comprehensive medication history and reconciled medications with other documented medication histories and current orders.*

Why Are These Being Done?

- It is important to obtain a complete list of home meds upon admission for providers to have accurate information to base their admissions medications orders
  - Results of the largest med rec study to date indicates that 36% of patients had med errors on admission, of which 85% originated from the patients med history
- When comparing community pharmacy drug list to hospitalized patients 25% of drugs used at home were not recorded on the hospital admission record
- Because of the emphasis on increasing patient safety and reducing health care dollars spent, medication reconciliation is the focus of many health systems
  - Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys and Centers for Medicare & Medicaid Services (CMS) now highlight the importance of proper medication reconciliation and use it to help determine reimbursement rates.
- Patients lack of knowledge of their meds, physician and nurse workflow, and lack of integration of patient health records across the continuum of care all contribute to a lack of accurate medication histories

Benefit of Med Rec

- The Institute of Medicine estimates that at least 1.5 million preventable adverse drug events occur within the health care system each year & the estimated cost is greater than 3 billion annually
- Medication errors represent the most common patient safety error
  - ½ of all hospital-related med errors, and 20% of all ADEs have been attributed to poor communication during the transition of care
  - Unintended medication discrepancies at admission ranges from 30 to 70%
  - ADEs account for 2.5% of estimated ED visits
- Interventions by health care teams have been shown to reduce hospital readmission rates by 30%
- Data from a large academic medical center demonstrated that med rec reduced discharge medication errors from 90% to 47% on a surgical unit and from 57% to 33% on a medical unit
- Studies have shown that performing medication reconciliation interventions during care transitions can significantly improve patient care

American Pharmacists Association; American Society of Health-System Pharmacists, Steeb D, Webster L.
J Am Pharm Assoc (2003). 2012 Jul-Aug;52(4):e43-52.

Sebaaly J, Parsons LB, Pilch NA (Weimert), Bullington W, Hayes GL, Easterling H. Clinical and Financial Impact of Pharmacist Involvement in Discharge Medication Reconciliation at an Academic Medical Center: A Prospective Pilot Study. *Hospital Pharmacy*. 2015;50(6):505-513.

Murphy EM, Oxencis CJ, Klauck JA, Meyer DA, Zimmerman JM.
Am J Health Syst Pharm. 2009 Dec 1;66(23):2126-31

Pharmacy Completed Med Recs

- Pharmacist have a unique combination of knowledge, skills, and position in the med use process to facilitate the implementation of effective med rec process
  - In a study 55 patients were included in an evaluation comparing physician-obtained medication histories to pharmacist-obtained medication histories. Pharmacists in this study identified 353 discrepancies, 58 of which had not been found by physicians
  - In a different study the intervention of pharmacy in the ED reduced discrepancies by 33%
  - Other studies have documented that, compared with nurses, pharmacists identified a significantly higher number of medications taken per patient, including more over-the-counter and herbal medications. Pharmacists also contacted patients' outpatient pharmacies significantly more often than nurses did
  - One study reported pharmacy technicians having fewer discrepancies when collecting medication histories than physicians

Splawski J, Minger H. Value of the Pharmacist in the Medication Reconciliation Process. *Pharmacy and Therapeutics*. 2016;41(3):176-178.

Pilegaard-Henriksen, Noerregaard, Croft-Buck, & Aagaard, 2015.

Decreased Mortality

Table 1

Pharmacist Contribution to Decreased Mortality When Completing Medication Admission Histories[8,a]

Annual number of admissions per hospital with pharmacist-provided admission drug histories (mean ± standard deviation [SD])	11,239 ± 4,462
Annual number of deaths per 1,000 admissions at a hospital with pharmacist-provided admission drug histories (mean ± SD)	38.29 ± 19.67
Annual number of deaths per 1,000 admissions at a hospital without pharmacist-provided admission drug histories (mean ± SD)	47.88 ± 40.18
Reduction in the number of deaths[b]	3,988
Reduction in the number of deaths per hospital (mean ± SD)	107.78 ± 87.6 (20.2%)

Splawski J, Minger H. Value of the Pharmacist in the Medication Reconciliation Process. *Pharmacy and Therapeutics*. 2016;41(3):176-178.

Return of Investment

- 1 in 5 patients discharged from hospital suffers an adverse event, 72% of which are related to medications.
- Hospitals can expect an absolute 2% reduction in readmission rates if med recs are done well
  - While this may not seem like much, a reduction from 18% to 16% could equate to millions of dollars saved in **Medicare penalties**
- A med rec system implemented at two North Carolina Hospitals estimated that each averted drug event would have cost about $4,000, for a total savings of $1.6 million
  - Factor in staff costs of about $800,000, and the system is able to keep the difference

Am J Manag Care. 2016;22(10):654-661

Ramjaun A, Sudarshan M, Patakfalvi L, Tamblyn R, Meguerditchian AN. Educating medical trainees on medication reconciliation: a systematic review. BMC Medical Education. 2015;15:33

Pharmacist Justification For Medication History Collection And Reconciliation On Admission

Average # of discrepancies/med errors per patient	2.5
Number of inpatient admissions per year	43,312 (2006)
Potential med errors per year that can be avoided	95,286 (2.2 x 43,312)
Percent of medications that were potentially harmful to patient during hospitalization*	2.5%
Number of harmful medication errors avoided per year	2,382
Annual gross savings to hospital ($4,800 per harmful error)**	$11,434,320
Average pharmacist time requirement per admission*	21 minutes
Additional pharmacist FTE needed to provide service (based on 115 admissions daily)	~ 5 FTE
Cost of additional pharmacist FTE (salary + benefits)	$625,000
Annual Net Savings	$11.4M

**Based on a evaluation of 651 general medicine patients interviewed by a research pharmacist who obtained a complete medication history and reconciled medications with other documented medication histories and current orders.*

***Bates DW, Spell N, Cullen DJ, et al. The costs of adverse drug events in hospitalized patients. JAMA 1997; 277:307-11*

Gleason KM, McDaniel MR, Feinglass J, Baker DW, Lindquist L, Liss D, Noskin GA.
J Gen Intern Med. 2010 May;25(5):441-7.

Economic Value of Pharmacist-Led Medication Reconciliation for Reducing Medication Errors After Hospital Discharge

- **Study Design:** Discrete-event simulation model.
- **Methods:** Discrete-event simulation model to prospectively model the incidence of drug-related events from a hospital payer's perspective.
- **Results:** The expected total cost of preventable ADEs was estimated to be $472 (95% credible interval [CI], $247-$778) per patient with usual care.
  - Under the base-case assumption that medication reconciliation could reduce medication discrepancies by 52%, the cost of preventable ADEs could be reduced to $266 (95% CI, $150-$423), resulting in a net benefit of $206 (95% CI, $73-$373) per patient, after accounting for intervention costs.
- Targeting medication reconciliation to high-risk individuals would achieve a higher net benefit than a non targeted intervention

Najafzadeh M, Schnipper JL, Shrank WH, Kymes S, Brennan TA, Choudhry NK.
Am J Manag Care. 2016 Oct;22(10):654-661.

Transition of Care

- Describe what life at home will be like
- Review medications
- Highlight warning signs and problems
- Explain test results
- Make follow-up appointments

https://www.ahrq.gov/professionals/systems/hospital/engagingfamilies/strategy4/index.html

Barriers

- Financial Resources
- Staffing
- Electronic transfer of patient data
- Communication
- Collaboration between in-patient and outpatient providers

Elements of success

- Multidisciplinary support and collaboration
- Effective integration of the pharmacy team
- Data available to justify resources
- Electronic patient information and data transfer
- Strong partnership network

http://media.pharmacist.com/practice/ASHP_APhA_MedicationManagementinCareTransitionsBestPracticesReport2_2013.pdf

Specifics

- Anticipate prior authorizations
- Understand insurance formularies
- Review medication profile for formulary substitutions while in-patient
- Avoid duplicates and poly-pharmacy
- Emphasis on high alert meds and diseases (Anticoagulation, opioids, diabetes)
- Review side effects and adverse reactions
- Remember to reinforce importance of compliance (COPD)
- Reach out to group homes to discuss ways to avoid readmissions

Education

- Discuss with patient or care givers the medications
- Attempt to overcome barriers including health care literacy
- Transfer of care to any provider should have a minimum amount of data:
  - Patient Name, DOB, Allergy profile, Height, and Weight in Kg
  - Diagnosis and Past Medical Hx
  - Current treatment and anticipated treatments
  - Alert for pending lab results, tissue biopsy results, or radiology test
  - Inform provider and patient (or care giver) of any scheduled appointments
  - An accurate and current medication list

Discharge Counseling

- Medication discrepancies that occur at transitions of care can negatively impact patient care
- The National Transitions of Care Coalition (NTOCC) defines transitions of care as the movement of patients from one practice setting to another
  - One institution's chart audit discovered that 60% of medication errors occurred at the transition-of-care point
  - Further evidence is provided by a study in which telephone calls from a pharmacist to a patient within 24 days following discharge significantly reduced both 30-day hospital readmission rates and emergency room visits compared with a group of discharged patients a pharmacist was unable to contact
  - Another study found that a model involving the combined efforts of pharmacists and social workers at transition-of-care points significantly reduced 30-day, all-cause readmission rates

Splawski J, Minger H. Value of the Pharmacist in the Medication Reconciliation Process. *Pharmacy and Therapeutics*. 2016;41(3):176-178.

Clinical and Financial Impact of Pharmacist Involvement in Discharge Medication Reconciliation at an Academic Medical Center: A Prospective Pilot Study

- Objectives
  - This study evaluates the impact of pharmacists in resolving med errors, decreasing readmission rates, and reducing institutional costs during the discharge med rec process
- Methods
  - Prospective, cross-sectional pilot study of a 700-bed academic medical center. Analysis of the data determined the time required for pharmacist involvement, the number of errors identified by pharmacists, the quality of pharmacist interventions, the cost avoidance for each error, and the overall impact on hospital readmission.
- Results
  - During the 7-week study period, pharmacists performed 67 discharge medication reviews and identified 84 errors. Seventy-five percent were considered to be significant and 6% were considered to be serious. The 30-day readmission rate in the study cohort was 18% compared with 20% in the control group. Based on the clinical severity scale and pharmacist salaries, pharmacist interventions resulted in $42,300 in cost avoidance.

Severity of Errors Identified During Discharge Counseling

Severity (cost avoidance estimate [a])	Errors in surgery patients (n = 48)	Errors in medicine patients (n = 36)
Lethal ($3,000/error)	0	0
Serious ($2,000/error)	3	2
Significant ($500/error)	39	24
Minor ($50/error)	6	10
No harm to patient	0	0

Sebaaly J, Parsons LB, Pilch NA (Weimert), Bullington W, Hayes GL, Easterling H. Clinical and Financial Impact of Pharmacist Involvement in Discharge Medication Reconciliation at an Academic Medical Center: A Prospective Pilot Study. *Hospital Pharmacy*. 2015;50(6):505-513. doi:10.1310/hpj5006-505.

Med Rec Positions of Key Organizations

Organization	Rationale	Recommendation	Goal
The Joint Commission[2]	Many patients take large amounts of medication involving complex regimens. Managing these medications is an important safety issue.	National Patient Safety Goal 03.06.01: document and pass along information about patients' medications; review safe practices for medication reconciliation.	Reduce negative outcomes associated with medication discrepancies.
Centers for Medicare and Medicaid Services[16]	The eligible professional (EP) who receives a patient from another setting or provider of care or believes an encounter is relevant should perform medication reconciliation.	The EP performs medication reconciliation for more than 50% of transitions of care in which the patient is transitioned into the EP's care.	Achieve meaningful use stage 2 core measure for electronic health records.
Agency for Healthcare Research and Quality[17]	Adverse medication events in the elderly are an important avenue for quality improvement due to the potential number of such events.	Assess the percentage of discharges with medication reconciliation from January 1 to December 1 of the measurement year for members 66 years of age and older in Medicare Special Needs Plans.	Effective communication and care coordination, prevention and treatment of leading causes of mortality, and safer care.
Institute for Healthcare Improvement[18]	Poor communication of medical information at transition points is responsible for as many as 50% of all medication errors and up to 20% of adverse drug events in the hospital.	Reconcile medications at admission, transfer, discharge, and in outpatient settings.	Decrease medication errors and harm.
Department of Veterans Affairs (VA)[19]	Accurate medication information impacts the care of veterans.	Systemwide approach to managing patient medication information by reconciling medications across the continuum of care.	Local VA facilities to create policies; leaders to ensure appropriate medication reconciliation at all transitions of care in the VA and with outside providers.

Care transitions associated with adverse events

20% of readmissions that occur within one year after a hospitalization are related to an adverse drug event.[1]

60% of all medication errors occur during times of care transition.[2]

72% of post-discharge adverse events are medication-related.[2]

[1] New England Journal of Medicine. Adherence to medication. 2005; 353:487-97.
[2] The American Society for Automation in Pharmacy. 2014 Midyear Conference. Transitional Care: How Pharmacies Can Impact Outcomes for Discharged Patients. June 26-28, 2014.

Avoid Readmissions and Drug Misadventures

Questions?

Thank you!