



The Role of the Pharmacist in Transitions of Care

Bruce Gordon, Pharm.D.

Clinical Pharmacy Specialist, Principal Consultant, Premier

July 2014

Objectives

- ▶ List three transition of care points where a pharmacist can improve the quality and safety of the patient's medication process.
- ▶ List at least three parameters that a pharmacist should evaluate to avoid medication errors at each transition of care point.
- ▶ List at least three disease state specific parameters that a pharmacist should evaluate at transition of care points.

Medication reconciliation definition

▶ The Joint Commission:

- The term “medication reconciliation” is “the process of comparing the medications a patient is taking (and should be taking) with newly ordered medications” in order to resolve discrepancies or potential problems.¹

▶ Agency for Healthcare Research and Quality (AHRQ)

- “Medication reconciliation refers to the process of avoiding such inadvertent inconsistencies across transitions in care by reviewing the patient's complete medication regimen at the time of admission, transfer, and discharge and comparing it with the regimen being considered for the new setting of care”

▶ Center for Medicare and Medicaid Services (CMS)

- “The process of identifying the most accurate list of all medications that the patient is taking, including name, dosage, frequency, and route, by comparing the medical record to an external list of medications obtained from a patient, hospital, or other provider”

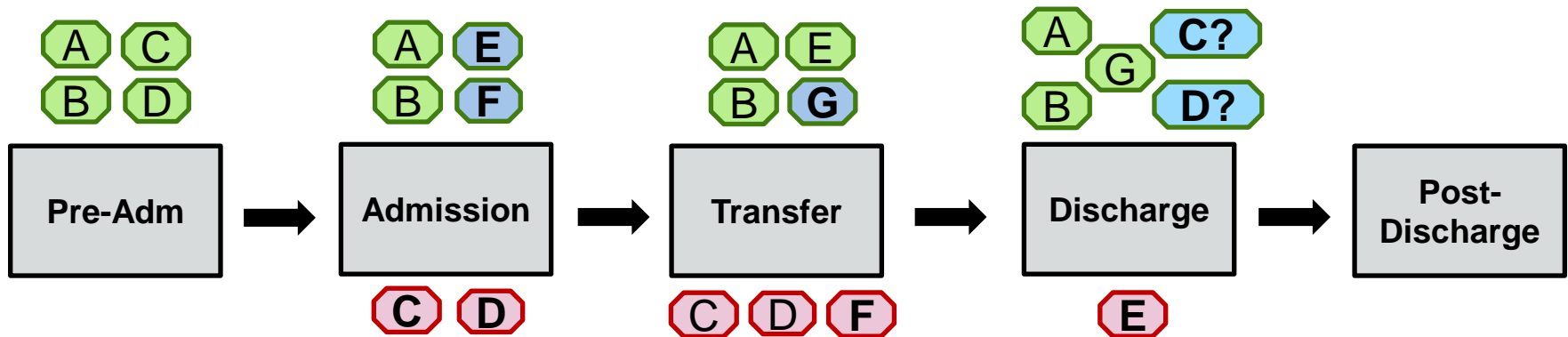
CE Question #1

- ▶ Define the transition of care points where a pharmacist can improve the quality and safety of the patient's medication process.



Organizational Goals – Where to apply resources

- Initially, an admission drug list is compiled (Drugs A-D). A complete profile would contain indication, dose, timing, route, and description (How do you take your meds each day?)
- Once admitted, the decision is made to **continue** drugs (A,B), **discontinue** or hold others (C,D) and/or add **new** meds (E, F).



- With unit transfers, a decision is made to continue drugs (A,B,E), discontinue or hold others (F) and/or add new meds(G).
- Upon discharge, the decision is made to continue drugs (A,B,G), discontinue or hold others (E), and/or add new meds or restart pre-admission meds held during hospitalization (C,D) thereby “reconciling” hospital medications with home meds.

Organizational Goals

- ▶ Where is your pain? What are your organization's financial, quality, and safety goals?
 - Length of Stay
 - Adverse Events / Hospital Acquired Complications / Mortality
 - Patient Satisfaction & Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
 - Readmissions
 - Other – revenue enhancement?
- ▶ Quality, safety, and survey data may be mined to identify areas of chief concern or focus. (*baseline and ongoing*)
- ▶ Apply pharmacy resources to address identified needs.
 - Applying resources to admission and transfer points will positively impact length of stay, adverse events and patient satisfaction.
 - Applying resources to discharge processes should improve readmissions and may improve length of stay and patient satisfaction. May be used to generate prescription revenue.



Strategies to reduce readmissions

Kangovi and Grande:

- “Readmission rate is, by definition, a measure of health service use. And while this use is influenced by the quality of care and patients’ health status, it is also a function of access to health services and to socioeconomic resources like income or social support”. Hospitals with patients with limited to access to medical or socioeconomic resources may have a difficult time impacting readmission rates thus identification of these patient issues should play a role in the readmission effort.
- ▶ Optimizing patient care requires multiple strategies including medication reconciliation. One must also address communications between patients and multiple caregivers as well as identifying and addressing issues with the patient’s discharge destination.

Perceptions of clinicians

Physicians

- Medication reconciliation is “busy work”, “I just check off boxes.”
- On-Line medication lists are often inaccurate.

Nurses

- If a patient goes to a private physician, then the medications will not be in the system.
- Medication Reconciliation is “really the physician responsibility, but the paperwork is important”.

Pharmacists

- Most likely to look at the “Value” of the process in determining what the patient is actually taking, not just what is on the list.
- More likely to question the Electronic medication list

- Vogelsmeier A, Pepper GA. [Oderda L](#), Weir C. Medication reconciliation: Res Social Adm Pharm. 2013 Jul-Aug;9(4):419-30



Medication Reconciliation

Pharmacists vs. Other Professionals

▶ Nester TM, LaDonna SH (Am J Health-Syst Pharm. 2002;59:2221-5)

- Pharmacists vs. Nurses

Variable	RN (n=50)	RPh (n=50)	p Value
Patients receiving at least one clinical intervention (%)	16	34	<0.001
Patients identified as taking at least one herbal preparation (%)	6	22	<0.001
Patients identified as taking at least one nonprescription medication (%)	68	98	<0.001
Patients identified taking at least one herbal or nonprescription medication (%)	70	98	<0.001
Patients whose medication histories were clarified with their community pharmacies (%)	4	24	<0.001
Mean ± S.D. time between admission and entry of allergy information (min)	156 ± 123	68 ± 30	<0.005

▶ Reeder TA., Mutnick A. (Am J Health-Syst Pharm. 2008; 65:857-60)

- Pharmacists vs. Physicians

Variable	RPh	MD	p Value
Medications identified	614	556	≤0.001
Documented doses and dosing schedules	614/614	446/404	<0.001
Identified discrepancies	353	295	



Medication Reconciliation, Technology Solutions

- ▶ Many EHR systems are interfaced with third party software to bring retail prescriptions directly into the medication history.
 - Helps with things like doses and name of the medication
 - Still need to confirm with the patient what they are actually taking and how they take it currently.
 - Does not include Over the Counter medications, herbal supplements, vitamins which may be important

- ▶ MedSnap ID system for iPhone (medsnap.com)
 - New App for an iPhone, to be released first quarter 2013
 - Snap picture of the medication a patient brings in and it identifies them for you.
 - Quicker than using a manual database.

Medication Reconciliation and Admission Orders

- ▶ Many hospitals convert the medication history (electronic or manual) into a part of the admission orders with a check box column for MD to complete:
 - Check 1) to continue or 2) do not continue upon admission for each item on the list
 - Documents the reconciliation and writes admission order in one step
- ▶ Very easy for the MD to check “yes” to all items without performing a thorough review.
- ▶ Missing details of the medication order then become a “pharmacy problem”
- ▶ EHR process many actually help this by not allowing an incomplete order to go through.



Formulary Therapeutic Substitutions effects on Medication Reconciliation

- ▶ The more therapeutic substitutions you have at your site the more confusion for the reconciliation process
 - In a paper process, pharmacy handles the substitution so the inpatient profile is correct
 - However, upon discharge the patient may end up two medications in the same therapeutic category
- ▶ With CPOE, the issue of how therapeutic substitutions are handled are vendor specific
 - Suggestions for items not on formulary may lead the physician to pick an incorrect item. May not be able to drive the physician to the correct substitution. May, or may not, have decision support capabilities.
 - Some systems encourage the MD to simply add the item as a “non-formulary” item, which is often in a text field, which places the work to clarify back on the pharmacy.



Medication Reconciliation Pearls

- ▶ Pharmacist and trained pharmacy technician's have shown to provide a “more comprehensive” medication history
 - Emphasis on what the patient is actually taking prior to admission
- ▶ Provide enough time for the assigned staff member to do an accurate history
 - (average 20-25 minutes per patient from literature sources)
- ▶ For electronic medication histories, do not allow “reviewed all” as an option
 - Too easy to use that option without speaking to the patient.
- ▶ Consider adding medications to the inpatient formulary to help the MD's with both admission and discharge reconciliation

Literature review of pharmacists value

- ▶ The following represent literature references with varying approaches to reducing readmissions, emergency visits, and drug costs.



Reduction in Post-discharge Readmission or ED Rates in High-Risk Elderly Patients Through a Targeted Care Bundle (Koehler)

▶ Objective

- to determine whether a supplemental elderly care bundle, targeted to high-risk inpatients by hospital staff as an enhancement to existing care coordination, would affect post-discharge readmission and ED visit rates.

▶ Primary Endpoint

- Post-discharge readmissions and ED visit rates

Koehler et al. J Hosp Med. Reduction of 30-day postdischarge hospital readmission or emergency department (ED) visit rates in high-risk elderly medical patients through delivery of a targeted care bundle. 2009;4:211-8.





Reduction in Post-discharge Readmission or ED Rates in High-Risk Elderly Patients Through a Targeted Care Bundle (Koehler)

► Methods

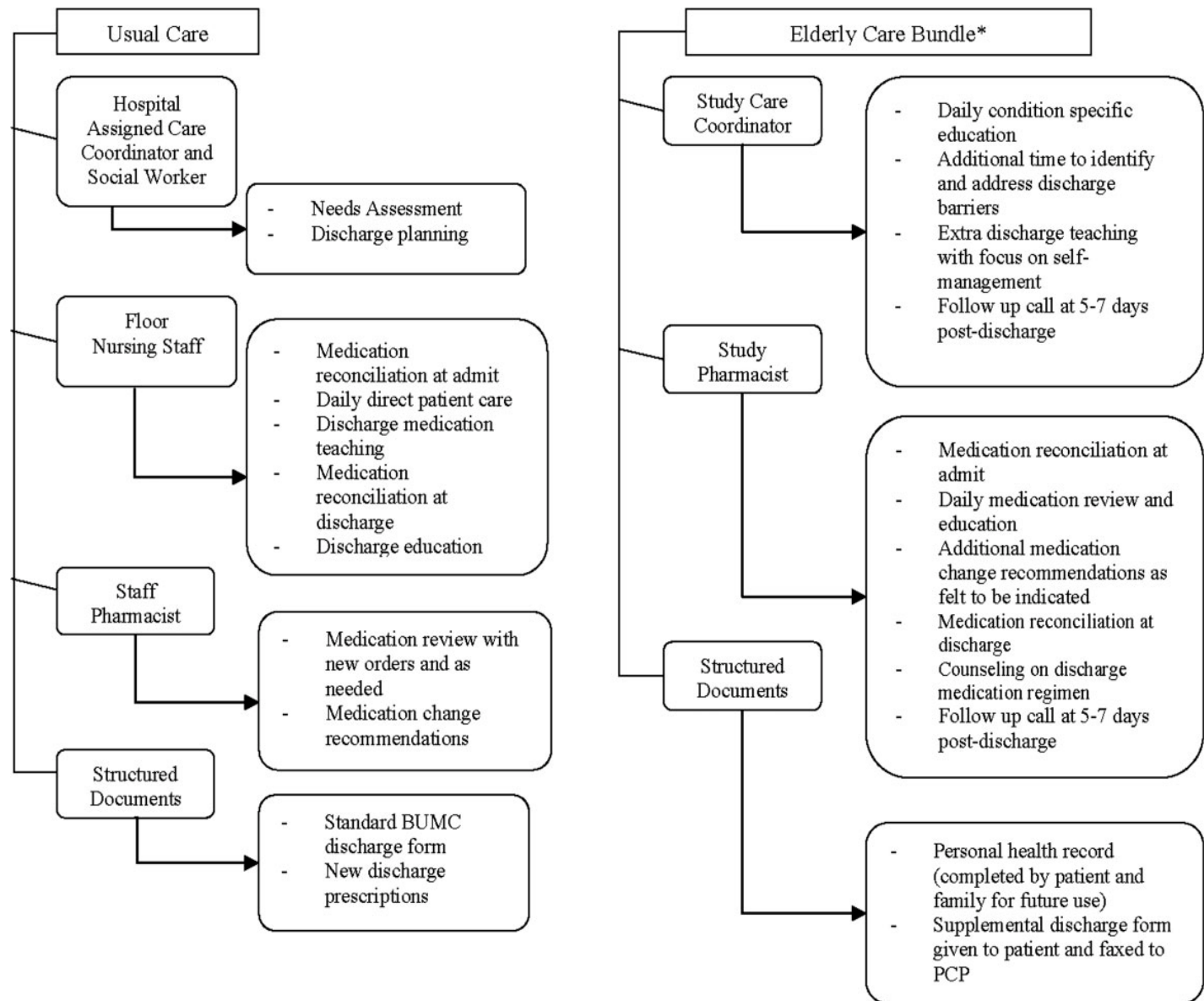
- Randomized controlled trial
- Selection: age ≥ 70 years, use of ≥ 5 medications regularly, ≥ 3 chronic comorbid conditions, requirement for assistance with ≥ 1 ADL, and preadmission residence at home or assisted living with a reasonable expectation of disposition back to that domicile
- Starting no later than 24 hours after enrollment and continuing up to 1 week following hospital discharge, intervention group patients received a targeted care bundle provided by 1 of 3 care coordinators (CCs) and 1 of 4 clinical pharmacists (CPs) working with the study team. Control group received usual team care.





Reduction in Post-discharge Readmission or ED Rates in High-Risk Elderly Patients Through a Targeted Care Bundle (Koehler)

Patients in the intervention arm received the usual care plus the elderly care bundle.





Reduction in Post-discharge Readmission or ED Rates in High-Risk Elderly Patients Through a Targeted Care Bundle (Koehler)

▶ Results

- **Significant reduction in 0-30 day post discharge readmission or ED visit.**

▶ Comments:

- **Very small numbers**

TABLE 3. Elderly Care Bundle Pilot Study: Outcomes

Outcome Measure	Control (n = 21)	Intervention (n = 20)	P Value
Length of stay for index hospitalization (days)*	4.7 ± 3.7	6.2 ± 4.1	†
0-30 day postdischarge readmissions/ED visits	8 (38%)	2 (10%)	0.03
31-60 day postdischarge readmissions/ED visits	1 (5%)	4 (20%)	0.18
Total postdischarge readmissions/ED visits at 60 days	9	6	0.52

*Removal of 1 outlying intervention patient with a 20-day hospitalization decreased mean LOS to 5.0 ± 2.9 days in this group.

†Insufficient power for statistical comparison.





Impacting Readmission Rates & Patient Satisfaction: Results of a Discharge Pharmacist Pilot Program (Wilkinson et al)

▶ Objective

- Assess the impact of pharmacist participation as a part of the BOOST program (Better Outcomes for Older adults through Safe Transitions) on the discharge process by evaluating patient readmission rates, pharmacist interventions, & patient satisfaction.

▶ Primary endpoint: 30-day readmission rate

▶ Secondary endpoints:

- Number/type of interventions, cost avoidance, & patient satisfaction

▶ Method: prospective, cohort, nonrandomized trial

- Patient Selection: **>18yo, ≥ 10 maintenance meds or therapy with high risk meds.**
- **72 hour follow-ups and/or outpatient visit**
- Pharmacists participated in patient discharge including one-on-one counseling, medication reconciliation, and overall provide support during the discharge process.





Impacting Readmission Rates & Patient Satisfaction: Results of a Discharge Pharmacist Pilot Program (Wilkinson et al)

▶ Results:

Outcome Measure	Study (156)	Control (81)	p Value
Readmissions	36/229 (15.7%)	95/440 (21.6%)	0.04
Cost Avoidance	\$378,889		
Interventions	313		
Satisfaction:	98% indicated that review of meds was helpful "Very Satisfied" (4.9) "More likely to return"		

- Average time per counseling session = **36.9 minutes**

▶ Conclusion: Pharmacist support in the discharge process facilitated increased communication on the multidisciplinary team and **resulted in a lower unplanned readmission rate.**





Impact of the clinical pharmacists on readmission in patients with acute coronary syndrome. (O'Dell & Kucukarsian)

- ▶ Objective: evaluate impact of the clinical pharmacist as a direct patient-care team member on the cardiac-related readmission in patients with ACS.
- ▶ Primary Endpoints: 30 day readmission
- ▶ Secondary: length of stay and medication utilization
- ▶ Methodology:
 - Prospective, randomized study comparing intensive inpatient and discharge clinical pharmacist activity to control group.
 - **No post-discharge activity**

O'Dell KM, Kucukarsian SN. Impact of the clinical pharmacists on readmission in patients with acute coronary syndrome. Ann Pharmacoth 2005;39:1423-7.





Impact of the clinical pharmacists on readmission in patients with acute coronary syndrome. (O'Dell & Kucukarsian)

▶ Results:

Outcome Measure	Study (156)	Control (81)	p Value
Cardiac-related readm (30d)			
Unstable angina	1/79 (1.3%)	4/44 (9.1%)	0.04
Myocardial infarction	7/77 (9.1%)	2/37 (5.4%)	0.44
All patients	8/156 (5.1%)	6/81 (7.4%)	0.53
Length of Stay (days)	3.3 ± 2.1	3.7 ± 2.7	0.15
Med Utiliz at Discharge	8.4 ± 2.8	8.1 ± 2.4	0.39

▶ Conclusions:

- Pharmacists did **not** significantly decrease readmissions in patients with ACS
- There was a significant reduction in readmissions in unstable angina patients





Post Discharge Outreach by Pharmacy (Novant Health – Terri Cardwell)

▶ Novant Health Safe Med Project

- AHRQ Innovations Exchange
- Started in 2007
- **High Risk Patients** with PCP within the system
- Pharmacists call patient **7 days** after discharge and perform a medication reconciliation
- Pharmacist follow-up with Physicians as needed to resolve discrepancies
- Pharmacy **technicians call back 30 days** after discharge to do a second follow-up

Results:

- Readmission rate **13.7% prior vs. 6%** after
- CMS Value Based Purchasing: most Novant facilities **have no penalty for readmissions**

<http://www.innovations.ahrq.gov/content.aspx?id=2959>





Post Discharge Outreach by Pharmacy Einstein Health Network – Houser D., Troup H.)

▶ Project REACH

- Einstein Healthcare Network
- Pilot study: Pharmacist vs. traditional nurse-medication education
- Pharmacist conducted
 - » Validate medication RECONCILIATION
 - » Deliver patient centered EDUCATION
 - » Resolve medication ACCESS issues during transition (insurance, retail pharmacy communication, social workers with indigent care)
 - » Coordinate a comprehensive COUNSELING approach (two post discharge phone calls at <72 hours and 30d)
 - » Equates to a HEALTHY compliant patient at home
- **AMI, CHF and HTN patients**
- **Readmission rate between groups (10.6% vs. 21.4%)**
- Pilot terminated early (N=92)
- All patients are now eligible
- Houser D., Troup H. Pharmacy Practice news December 2012 edition www.pharmacypracticenews.com
- Presented at Maryland Patient Safety Center's Annual MEDSAFE conference Nov 2011



▶ Why the inconsistent results???

- ▶ Differing study population size and characteristics
- ▶ Stringent exclusion criteria resulting in extreme reductions in study populations
- ▶ Personnel used
- ▶ Timing
 - Hernandez et al showed significant difference when first physician visit occurred within 7 days post discharge as compared to 14, 21, and 28 days.
 - REACH first contact at <72 hours
- ▶ Confounding variables
 - Other practitioner activities
 - Quality of existing or baseline programs
 - Patients with varied literacy and access to medical or socioeconomic resources
 - Heart failure mortality rates of 5% in first 30 days post discharge



CE Question #2

- ▶ List at least three parameters that a pharmacist should evaluate to avoid medication errors at each transition of care points
 - Drug Info
 - » Name, Indication, Dose, “How are you taking your med?”
 - » OTC, Herbal, etc.
 - » How does this medication integrate with the meds at the transition point before and at discharge?
 - » 3rd Party Formulary?
 - Patient Info
 - » Education/Understanding, Access to Med
 - » Home Environment
 - » Diet

CE Question #3

- ▶ List at least three disease state specific parameters that a pharmacist should evaluate at the transition of care points.
 - **Heart Failure:** **Weight**, Shortness of Breath
 - **AMI:** Chest Pain
 - **Hypertension:** **BP**
 - **General:** Vision, Cognition, Diet

Why the inconsistent results???

In a commentary following Mueller's article summarizing medication reconciliation practices, Kaboli and Fernandes summarize the four factors that they believe are critical success elements:

1. Preadmission medication lists are critical
2. Best-possible medication history requires a skilled interviewer.
3. Transitions of care are vulnerable moments for medication discrepancies to occur and propagate. Identifying these time points focuses effort.
4. Targeted interventions are probably the most cost-effective. Triageing high-risk patients to interventions is essential. However, such targeting needs to be balanced with the expectation for safe practices that can apply to all patients in any high reliability organization.

Mueller SK., *et al.* Hospital-based medication reconciliation practices. *doi:10.1001/archinternmed.2012.2246. E1-13*
Kaboli P., Fernandes O. Medication reconciliation: Moving forward. *doi:10.1001/archinternmed.2012.2246. E13-4.*

Barriers to Implementation & Elements of Success

- ▶ In 2011, the American Society of Health-System Pharmacists (ASHP) evaluated 80 Medication Management in Care Transition (MMCT) models and identified both Common Barriers and Elements for Success for program implementation.
- ▶ These issues should be addressed before engaging in implementation.

Common Barriers	Elements of Success
Financial resources	Data available to justify resources
Staffing resources	Effective integration of the pharmacy team
Electronic transfer of patient information and data	Electronic patient information & data transfer
Communication	Multidisciplinary support and collaboration
Difficulty developing partnerships with inpatient/outpatient partners	Strong partnership network



DISCUSSION

