Medication Reconciliation

New York State Partnership for Patients (NYSPFP) Initiative

Regional Educational Session

November 2013

The problem

- Studies show that poor communication of medication information at transition points is responsible for:
  1. Up to 50% of all hospital medication errors
  2. 30% to 70% variance between medications before and on admission – omission errors were the largest category
  3. 22% to 39% had potential to cause moderate to severe harm
  4. Each ADE costs the hospital an estimated $8,750 (in 2006 $)

  The consensus solution: medication reconciliation

What is medication reconciliation?

- Three Step Process:
  - Verify
    - collect and confirm an accurate list of current medications as well as the patient's adherence with their medication regimen
  - Clarify
    - ensure the medications and doses collected and subsequently ordered are correct therapy for that patient, given that patient's current state of health
  - Reconcile
    - consider and document any modifications made to the current therapy upon admission, with each change in level of care, and at discharge to promote a continuum of safe medication use

Where in the process should we focus?

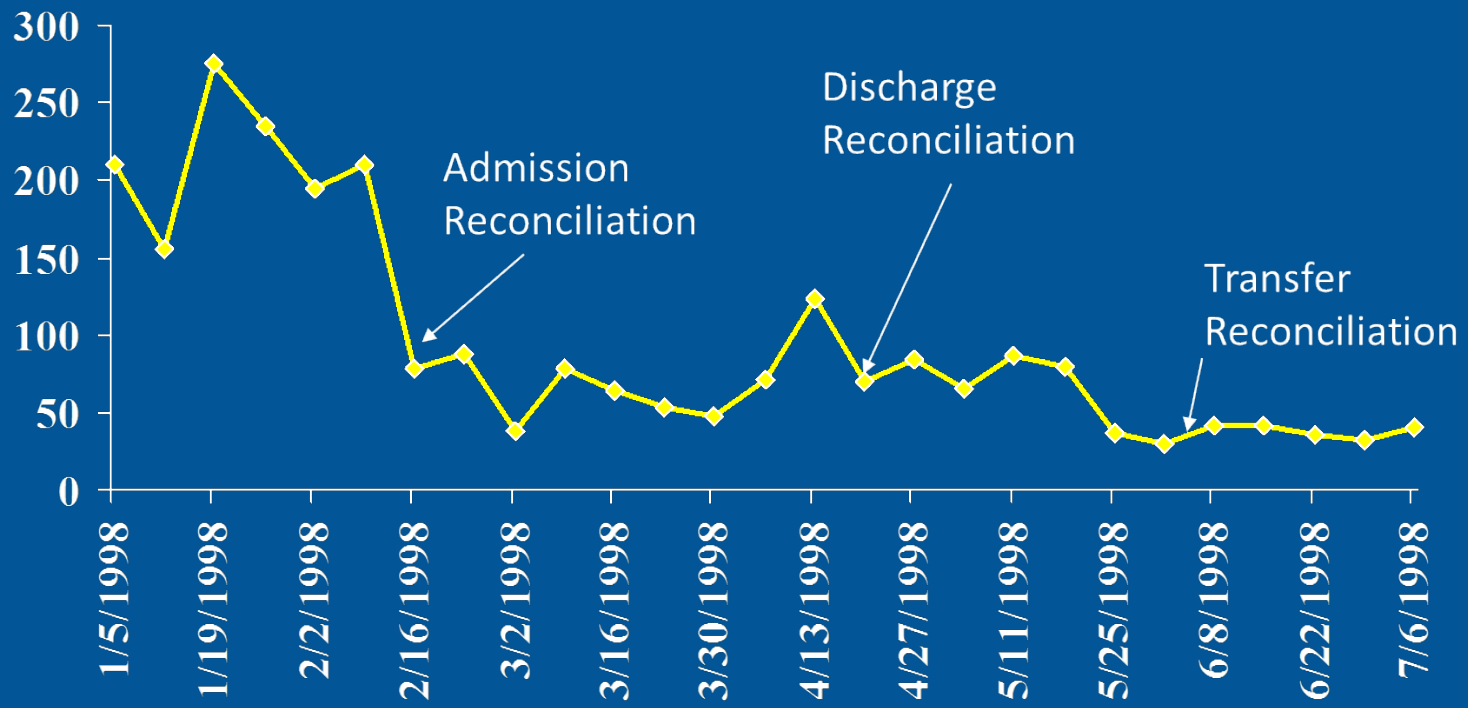
- 72% of discrepancies were due to inaccurate preadmission history and 26% were due to discharge medication reconciliation
  - *Focus on accurate medication histories,*

    potential medication errors at discharge, and

    identifying high-risk patients for more intensive interventions

    J Gen Intern Med. 2008; 23(9): 1414-22.

Errors on reviewed charts/100 admissions at Luther Midelfort Hospital



Home Medications (including prescription, over-the-counter and herbal/alternati

Drug (include drug name and strength)	Dose (include mg, puffs, mls, etc.)	Route (include PO, eye, inhale, etc.)	Frequency (include once daily, BID, qhs, etc)	Date & Time of Last Dose	Comments
pt says takes 3 different meds but she does not know what they are, ~~what they are for~~					
for HTN		po	qam	3/16	
for depression		po	qhs		
vitamin C	500mg	po	qd		
multivit		po	qd		
"a stomach pill"		po	qam		

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Admission errors

- Admission orders are missing the patient's Glucotrol® (glipizide) medication
- Patient's blood glucose is 300 mg/dL three days later
- *Insulin therapy started*

Admission errors

- Admission orders have Toprol® (metoprolol) at a higher dose than the patient was on at home
- Patient went to the bathroom with the assistance of a walker and became lightheaded and passed out
- *Patient required telemetry monitoring and hydration for 24 hours*

Admission errors

- Patient admitted and presents handwritten list of medications taken at home
- Physician misunderstands entry for Desogen® (ethinyl estradiol and desogestrel) and prescribes digoxin 0.25 mg daily
- *Later, a nurse discovered the error when she asked the patient why she was receiving digoxin. The patient had no ill effects.*

More admission errors

- A patient is transferred from another area hospital, and the patient's medication list of 8 drugs is faxed over…but the medication list sent was for the wrong patient
- A patient brings in all his medication bottles to show what he is taking, but forgets to bring/mention the insulin he is taking
- Nurse was performing admission medication drug history with patient. She selected Durasol® (salicylic acid, 26%) a wart remover from the electronic database, and entered 2 drops into right eye daily. The patient actually said he was taking Durezol® (difluprednate), an ophthalmic corticosteroid.

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A serious admission error

- A patient was receiving 10 mg of methotrexate weekly for psoriasis
- Upon admission to the hospital, the medication reconciliation form was filled out indicating a daily dose of 10 mg instead of weekly
- The daily dose was prescribed, dispensed and administered for an 8 day period
- *The patient died*

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Discharge error

- 73 y.o. male admitted from LTC facility on Jalyn® (dutasteride 0.5 mg and tamsulosin HCl 0.4 mg) for BPH
- Switched to two formulary drugs: dutasteride 0.5 mg and tamsulosin 0.4 mg
- On discharge, medication reconciliation form listed Jalyn® as home medication, and dutasteride and tamsulosin as inpatient medications – physician ordered all three drugs
- *Patient readmitted in 12 days with severe hypotension*

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2006 ISMP survey

Over 1,400 practitioners (75% RN, 21% RPh) responded

"We have spent more time on the forms and this process than on any other safety project. We have also had to increase staffing in pharmacy without reimbursement from insurance or another payer."

"This is a very hard process to implement, regulate, and track in our facility. While I think most of our staff feel it is important and do some level of reconciliation, the process is still foggy."

"We still struggle with this whole process. We need to come up with a way to get staff fired up over this."

Challenges

- Often, there is no clear owner of this process
- Staff do not have the time to complete each step in the process
- Accurate sources of information may be difficult to identify
- Patients with poor health literacy
- Patients don't know (or aren't in a position) to tell staff what they are taking and family or pharmacy is not available
- The patient may not want to admit what they have been taking
- Labels on bottles are outdated or incorrect

Challenges

- Patient may take medication differently than prescribed (e.g., taking spouse's medication)
- Medication lists are often inaccurate, not updated
- Patients forget several types of medication such as:
  - Medications taken weekly, once monthly, or prn
  - Medications that are kept in the refrigerator
  - Medications that require frequent dose changes (warfarin)
  - Medications that are not taken by mouth such as patches, inhalers, ophthalmic drops

Question

- In the ISMP survey, which success factor was perceived as having the highest correlation with an effective medication reconciliation process?
  1. Reasonable expectations for “complete” history
  2. Medication history by a pharmacist
  3. Teamwork among disciplines
  4. Easy communication with outpatient providers

Success factors ranked as most important by respondents

- Teamwork among disciplines 57%
- Clearly defined protocols 39%
- Centralized history form/screen 32%
- Awareness of the role of each contributor 24%
- Reasonable expectations for “complete” history 23%
- Easy communication with outpatient providers 15%
- History collection by a pharmacist 10%

ISMP Survey Apr/May 2006

Other success factors

- Pre admission medication list is critical
- Requires a skilled interviewer
- Communication with primary care MD on discharge
- Targeted interventions are most cost-effective
  - Elderly, patients taking many medications, patients with many comorbid conditions.

Mueller SK et al, Hospital Based Medication Reconciliation Practices
Arch Intern Med 2012 (July 23); 172(14): 1057-69

Best practice recommendations

- Clearly defined, unambiguous roles of each person involved in the medication reconciliation process
  - *Physician, nurse, pharmacist , pharmacy technician, social worker, discharge coordinator*
  - *Physician has active role at both admission and discharge*
    - *Completion of admission medication reconciliation within 24 hours*
    - *Completion of discharge medication reconciliation*
  - *Understanding it is a "team" process –multidisciplinary*

Pharmacist role in medication history?

- Does the pharmacist have to obtain the medication history?
  - Nurses often perform this function
  - Pharmacy technicians can, however
    - with retail experience?
  - Pharmacy students can, however
  - Why:
    - *Knowledge of drugs, dedicated responsibility, economics, time*

So what is the pharmacist's role?

- "Pharmacists because of their knowledge and skills are qualified to lead the interdisciplinary effort to establish and maintain an effective medication reconciliation process"

  ASHP Statement on the Pharmacist's Role in Medication Reconciliation
  Am J Health Syst Pharm 2013; 70:453-456

- "All of the evidence for the effectiveness of medication reconciliation involves pharmacists' interventions"

  AHRQ Report: Making Health Care Safer II: An Updated Critical Analysis of the Evidence for Patient Safety Practices. 2013

Best practice recommendations

- A dedicated practitioner collects the medication history.
  - Trained and qualified
- Redundancy is necessary to improve accuracy
  - Validation and verification by two people involved in the process

Best practice recommendations

- Standardized process on how medication reconciliation should be done
  - *One way to do things*
  - *One location for documentation ("document of truth")*
  - *Example*
    - *Documentation on both computer vs. paper, or two different computer systems (Separate emergency department system and hospital electronic medical record)*

Best practice recommendations

- Focus on the Emergency Department (ED)
  - *Why: Large number of admissions from ED*
- Medication reconciliation is an on-line process in the electronic medical record (EMR)
  - *Evidence shows improved results with an on-line process*
  - *But…*

Best practice recommendations

- Make it a goal to collect a complete medication history, including:
  - Drug, dose, route, frequency
  - Purpose (indication)
  - Date/time last dose taken (approximate, if not known)
  - Actively taking vs. not actively taking
- What is a “good faith effort”

Question

- Which of the following approaches best supports obtaining the most accurate medication history?
  1. Have a dedicated category of staff collect the history
  2. Get a detailed list from the patient
  3. Get the information from electronic insurance databases
  4. Use a scripted set of questions/collection form

Best practice recommendations

- Use a data collection form (or a scripted list of questions or prompts) during the admission process to help identify those drugs which may not be readily identified by patients

What drugs are often missed?

- *OTCs*
- *herbal/dietary supplements*
- *vitamins*
- *patches*
- *inhalers*
- *topicals*
- *otics*
- *ophthalmics*
- *depot injections*
- *home infusions*
- *drug-eluting implantable devices*
- *refrigerated medications (insulin)*
- *drugs with frequently changing doses (warfarin)*
- *drugs administered less than daily (ibandronate)*

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Best practice recommendations

- Consider an expedited, focused admission medication history process when delays occur
  - *Use a specialized data collection form or set of scripted questions*
  - *High-alert medications*
  - *High-risk patients*
    - *Over age of 65, recent readmission, multiple pharmacies, multiple healthcare providers, multiple medications, poor health literacy*

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Best practice recommendations

- Use a consistent communication process for updates
  - *Best if "document of truth" is updated by person who discovered the updated information*

Best practice recommendations

- Formalized Medication History Review Process
  - Omission of medication-related laboratory tests, ancillary drugs
  - Duplications with drug therapy
  - Contraindications to drug therapy (drug interactions)
  - Unclear information (illegible, incomplete and unclear orders)
  - Correct therapy regimen for the patient
    - *drug for indication, dose, rate, etc.*
- Done by a pharmacist
- Consider a checklist

Best practice recommendations

- On transfer to another healthcare facility provide updated medication profile to the hospital/facility
  - *Another hospital*
  - *Long-term acute care facility (LTAC)*
  - *Long-term care or rehab facility (skilled nursing facility)*
  - *Personal care home (assisted living)*
  - *Group home*
  - *Home care agency*

Best practice recommendations

- On discharge, provide updated medication profile to patient (and if possible, primary care provider)
- Pharmacist involvement in review of medications prior to discharge in polypharmacy patients
  - *Patient receiving over 8 different medications*
- Pharmacist discharge consultation to first time users of insulin or anticoagulants and other select high-alert drugs

Best practice recommendations

- Create and provide a patient education document explaining the importance of managing their medication
  - *Instruct the patient to:*
    - *give a list to his or her primary care physician*
    - *update the information when medications are discontinued, changed, or added*
    - *carry medication information at all times in the event of emergency situations*

Best practice recommendations

- High-risk patients have scheduled follow up visits and laboratory monitoring prior to discharge
- The organization routinely engages the use of disease management practitioners (through home care, case management) specifically for high-risk patients
- Pharmacist is an active part of the home care team reviewing drug histories and managing high-risk patients
  - *High-risk: heart failure patients, diabetics receiving new insulin, noncompliant diabetics, patients with new anticoagulant orders*

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Best practice recommendations

- Create a performance improvement process including specific process measures to monitor the success of medication reconciliation within the organization

NYSPFP metrics

- Numerator: Number of patient records with a complete medication reconciliation documented, including comparisons and resolution of medication lists
- Denominator: Number of patients sampled

- Numerator: Number of patients with documentation of medications reconciled on discharge
- Denominator: Number of patients sampled

- *"There is a need to reorient the focus of medication reconciliation away from that of an accreditation mandate and toward a broader view of patient safety."*

From a medication reconciliation consensus conference held on March 6, 2009, was supported by AHRQ
http://onlinelibrary.wiley.com/doi/10.1002/jhm.849/full

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For more tools and information

- ISMP Canada and WHO project:
  - www.ismp-canada.org/medrec/
- *Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation*
  - www.ahrq.gov/qual/match/match.pdf
- *Making inpatient medication reconciliation patient centered, clinically relevant and implementable: A consensus statement on key principles and necessary first steps*
  - http://onlinelibrary.wiley.com/doi/10.1002/jhm.849/full

Questions

Discussion

- Which of the following best practice recommendations that we discussed gave you an “ah-ha” moment?

Group Discussion Session

- Pick three of the best practices and develop a plan as to how you would
  - Overcome barriers
  - Implement them

Best Practice Recommendations

- Dedicated medication history taker
- Validation of history
- Standardized process
- Focus on ED
- Online process
- Data collection tool
- Focused process
- Consistent update process
- RPh review checklist
- Transfer list to next facility
- Updated list to patient/primary care provider
- Pharmacist in discharge
- Patient education document
- Follow-up on high-risk patients
- Create a PI process

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