Medication Reconciliation: Intersection of Patient Safety and Health Literacy

Presented to:

Health Literacy Research Conference Participants

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Overview

- Defining the Problem of Medication Reconciliation within the Context of Care Transitions, Medication Management and Health Literacy
- A Team Approach to Medication Management: Building a Medication Reconciliation Infrastructure
- Overview of the Results of the Medications At Transitions and Clinical Handoffs (MATCH) Study
- Questions / Discussion

The Intersection

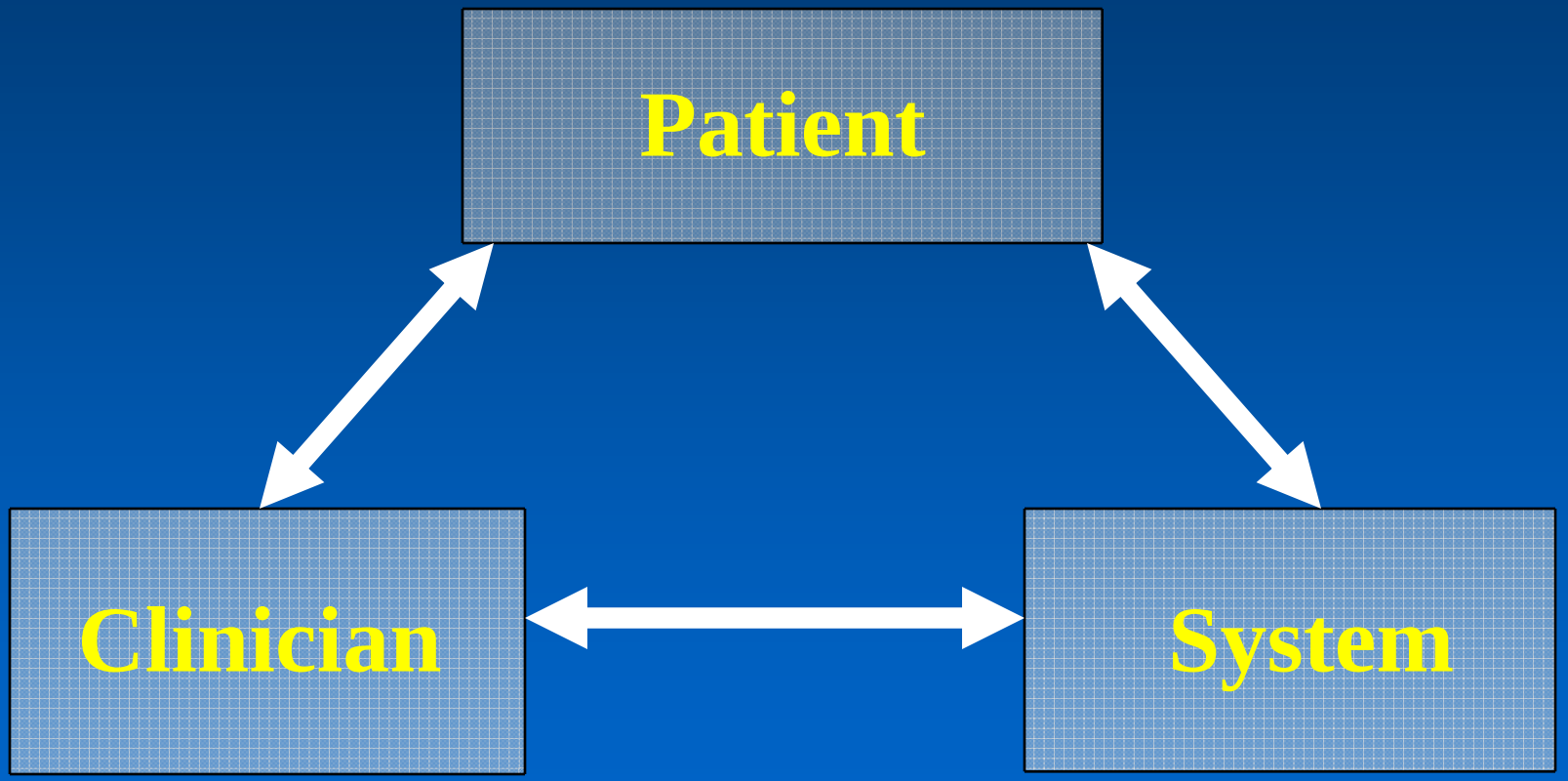
- Health Literacy: "Degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." (Ratzan and Parker, 2000)

- Medication Reconciliation: A proactive structured process for identifying the most complete and accurate list of medications a patient is taking and using that list to provide correct medications for the patient anywhere within the health care system based on the intended treatment plan.

Goal: Reduce medication errors & associated patient harm through reconciliation and patient education

Sounds easy, right?

Not As Easy As It Sounds:
Medication Reconciliation Challenges



Medication Histories

What We Want

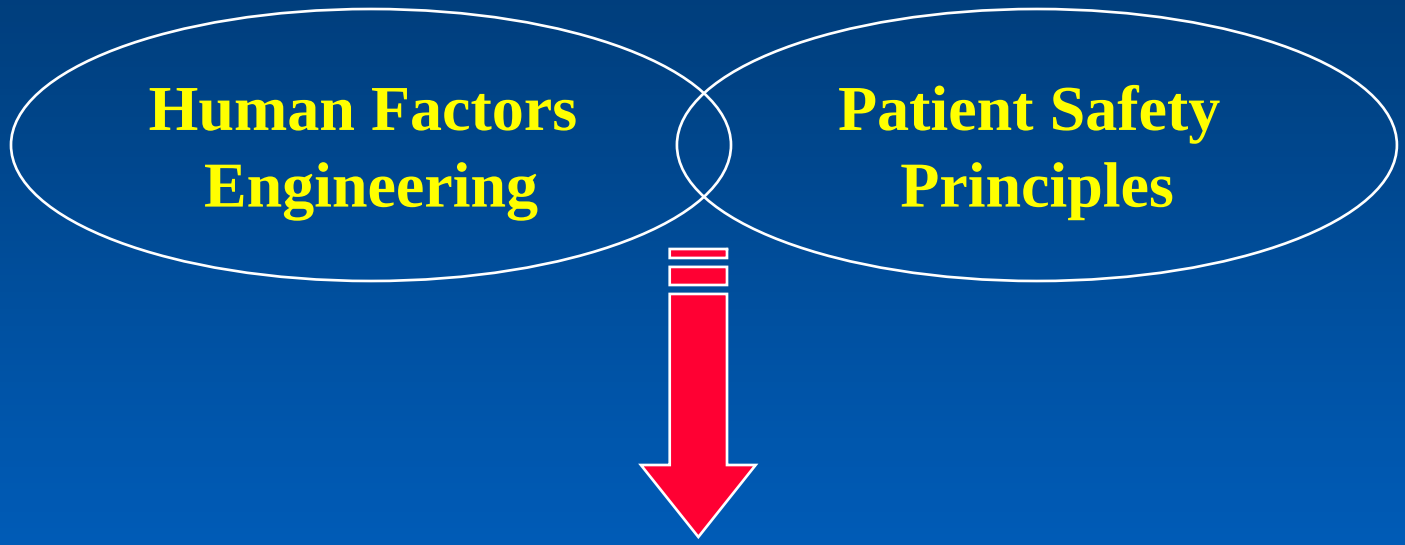
- Metformin 500mg. 1 tablet two times daily for diabetes
- Aspirin 81mg daily for heart
- Simvastatin 20 mg. 1 tablet at bedtime for high cholesterol
- Furosemide 20 mg. 1 tablet daily; water pill for high blood pressure
- Venlafaxine XR 75 mg every morning for depression

What We Get

- Metformin 500mgx2
- Daily aspirin
- Simvastatin at bedtime
- Water pill every morning
- Venlafaxine 75mg once a day

Building a Medication Reconciliation Infrastructure for Patient Safety

Design of Safe(r) Systems



- ✓ **Reduce the likelihood of error**
- ✓ **Make errors apparent**
- ✓ **Minimize the consequences of error**

NMH Patient Safety Principles

- Make the easiest thing to do the safest thing to do
- Reduce reliance on memory and vigilance
- Improve access to complete and timely information
- “Error proof” through fail-safe systems and forcing functions
- Standardize and simplify processes
- Design systems to be resistant to psychological and environmental precursors to error

Results of the MATCH Study: An Analysis of Medication Reconciliation Errors and Risk Factors at Hospital Admission

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Methods

- Pharmacist-obtained medication history compared to physician's medication history and current orders to determine:
  - *History Errors*: Discrepancy between physician-obtained medication history compared to pharmacist-conducted interview leading to clarification and subsequent correction of medical record documentation.
  - *Order Errors*: Unexplained discrepancy between the patient's admission medication orders and medication history requiring clarification and resulting in order change.
- Errors further classified by type, medication class and potential severity

MATCH Results

36% (234/651) of study patients had a total of 309 order errors. Of these patients, 85% (198/234) had the errors originate in their medication histories. Almost half were omissions.

- Most common medication classes involved in errors:
  - Cardiovascular agents, antidepressants, gastrointestinal agents, neurological agents and anti-diabetics

- Potential harm assessed, if verification and reconciliation had not occurred:
  - 4 (1%) errors → potentially resulting in longer hospitalization
  - 32 (10%) errors → potentially causing temporary harm
  - 162 (52%) errors → potentially requiring increased monitoring or intervention to preclude harm
  - 111 (36%) → not likely to have been harmful

MATCH - Hypothesized Risk Factors for Problematic Medication Histories or Reconciliation

- Limited English proficiency
- Low health literacy
- Limited education
- Advanced age
- Impaired cognitive status
- Lack of social support
- Multiple medical problems
- Increased number of medications
- Recent medication or dosage changes, per history
- Complicated dosing regimens
- Certain medications/medication classes
- Use of multiple pharmacies
- Multiple physicians involved in patient's care

Logistic Regression Results for Risk Factors (n=428)

- Risk factors independently associated with errors potentially requiring monitoring/intervention to prevent harm or potentially harmful :
  - Advanced age (≥65 years old) (OR=2.17; 95% CI, 1.09–4.30)
  - Increased number of prescription medications (OR=1.21; 95% CI, 1.14–1.29)

- Significant protective factor for avoiding errors:
  - Presenting a medication list (OR=0.35; 95% CI, 0.19–0.63).
  - Presenting medication bottles also beneficial, although not quite statistically significant (OR=0.55; 95% CI, 0.27–1.10)

MATCH Conclusions

- Prescription medication discrepancies are common among hospitalized patients.
- Advanced age and an increased number of mediations puts patients at greater risk for errors.
- Patients maintaining and presenting a medication list or presenting prescription bottles may be “protective” to prevent medication errors *if* used appropriately.

MATCH Conclusions *Continued*

- Additional investigation is required to optimize medication reconciliation, including necessary technology support.
- Better methods are needed to ensure the accuracy of medication histories, including involvement of patients and their families/caregivers in the process.
- Physicians, nurses and pharmacists play key roles in medication management. A multidisciplinary team approach to medication reconciliation, in partnership with patients, is critical, especially with errors often originating in medication histories.

Challenges Remain

- Technology Limitations
- Education and team training directly focused on obtaining and confirming patients' medication information and performing reconciliation are lacking
- Patient education / teaching regarding medication regimens is often suboptimal
- Capturing the "Value" of Medication Reconciliation

NMH Medication Reconciliation / MATCH Toolkit available at: http://www.nmh.org/nm/for+physicians+match

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Questions and Discussion

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To learn more about Northwestern Memorial Hospital as well as the MATCH Toolkit and Quality Website, please visit: http://www.nmh.org