

Medication Reconciliation: Designing an Approach to Focus on What's Important

Medications at Transitions and Clinical Handoffs (MATCH) Initiative

Presented to:

IDN Summit

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By

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Northwestern Memorial HealthCare



- 873-bed Nationally Recognized Academic Medical Center
- Tertiary care center providing a full range of services for adults and neonates
- Nationally Ranked for Quality

Feinberg and Galter Pavilions Prentice Women's Hospital

Discussion Overview

- Designing a Multi-Disciplinary Team Approach for Medication Reconciliation
- Multi-disciplinary Team Training and Implementation
- Measurements for Improvement - Compliance and Quality Assessments

What is Medication Reconciliation Really About Anyway?

- Obtaining, confirming and documenting the patient's complete list of medications upon admission/arrival
- Utilizing this list for guidance in medication decisions or assessing a patient's response to current regimen
- Comparing this list to the medications prescribed and screening for potential interactions or contraindications while under your facility's care
- Reconciling (resolving) unintended medication discrepancies
- Communicating an updated medication list, highlighting any changes, to the patient and next provider of service upon discharge/exit

Goal: To decrease medication errors & associated patient harm

Why is it important to NMH?

Goal: To decrease medication errors & associated patient harm

- Increase accuracy and completeness of medication history
- Design a process where clinicians will complete medication reconciliation at appropriate time within workflow for every patient
- Reconcile all medications (home and current medication orders) during transitions in care
- Exceed/Meet The Joint Commission's regulatory requirements

Medication Reconciliation Leadership

- Convened a Medication Reconciliation Leadership Committee to heighten the priority for the organization
 - Executive voice to support and prioritize the time and attention required
 - Customize a compelling message from each constituent
 - Mobilize the Leadership Group to drive change and provide direction
- Acknowledged the scope of Medication Reconciliation to include ALL patients who receive medications, across multiple disciplines and numerous practice settings (inpatient, outpatient, Same Day Surgery, Clinics, etc.)
- Goal: Sustainability to weave medication reconciliation into the culture and practices for safe medication management

Designing a Multi-Disciplinary Approach

Why Design a Multi-Disciplinary Approach?

- Physicians, nurses and pharmacists play key roles in ordering, screening, dispensing, administering and monitoring patients' medications
- During admission and at any point during the episode of care, physicians, nurses and pharmacists may learn new information regarding patients' home medications
- The roles and responsibilities of physicians, nurses and pharmacists for reviewing and managing patients' medications are closely tied with the NPSG requirements for medication reconciliation

For a team approach for medication reconciliation to be effective, it is imperative roles are clearly defined and a level of accountability has been established

Medication Reconciliation – Improvement Initiative

Multi-disciplinary team approach - physicians, nurses and pharmacists

- Increase accuracy and completeness of medication history
- Prompt clinicians to complete medication reconciliation at appropriate time within workflow
- Reconcile all medications (home and current medication orders) during transitions in care

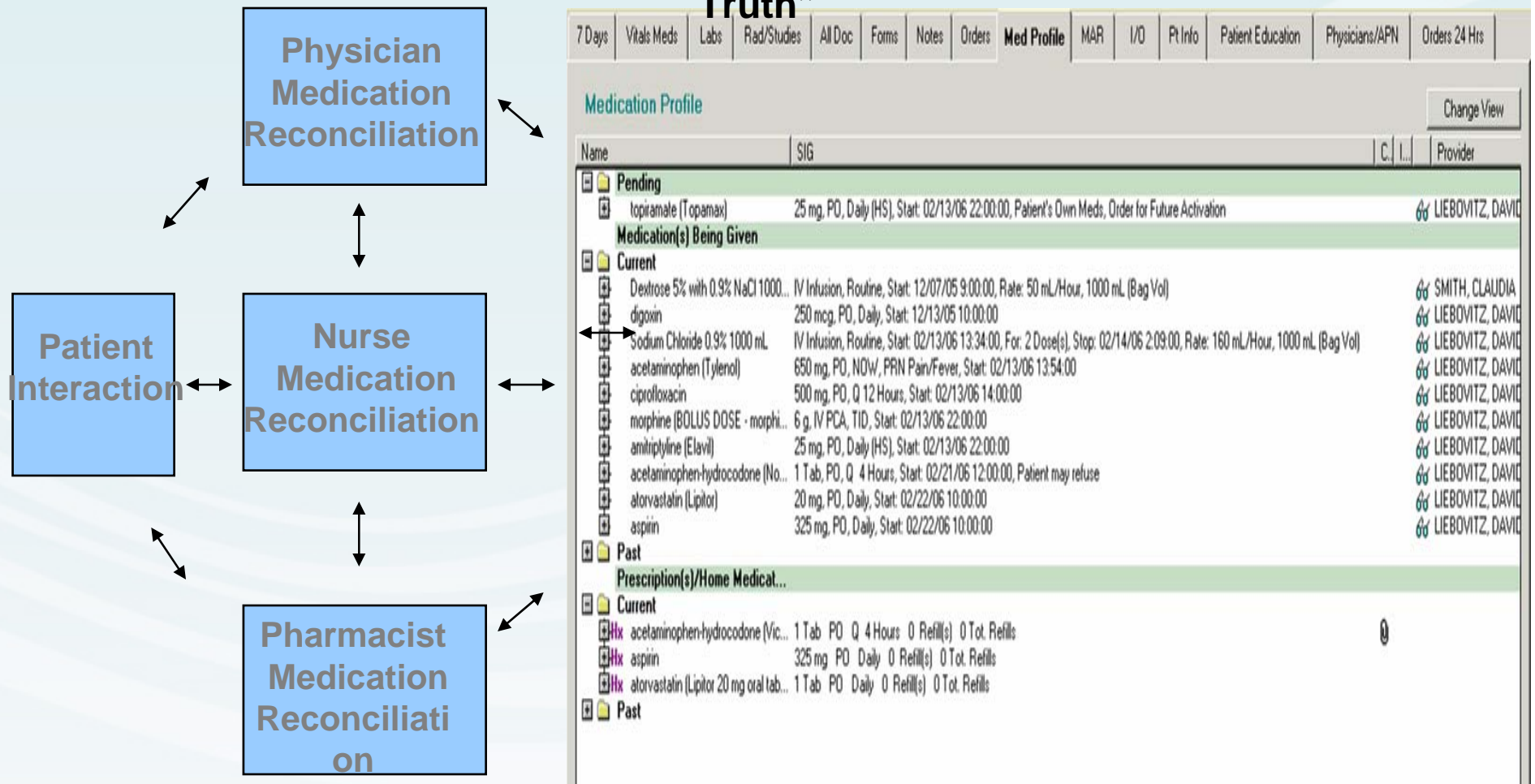
Medication Reconciliation: Integrated Approach

PATIENT

**HEALTHCARE
PROFESSIONAL**

MEDICAL RECORD

Med Profile Tab: "One Source of Truth"



Integrated Approach in a Paper-based System

[Insert Organization Name/Logo Here]

Department of [Dept. Name Here]

Medication / Discharge Form

Dear Patient,

Please complete the following. A Registered Nurse will review this list and update it as needed.

ALLERGIES: None (please check none) or list:

Source	Reaction	Source	Reaction
Example: Penicillin	Hives	3.	
1.		4.	
2.		5.	

Physician Use Only:

MEDICATION - List the names of any medications you are taking. Please include any over the counter medicines (including vitamins, minerals, and herbal supplements). Also include any medications you held for your procedure.	STRENGTH -List the strength of each tablet, capsule, etc.	DOSE - How much are you taking? (number of tablets, capsules, units, etc.)	FREQUENCY -How often do you take the medication? (daily, twice a day, etc.)	ROUTE - How are you taking this medication? (by mouth, injection, patch, etc.)	LAST DOSE TAKEN - Indicate the date and time of the last dose taken	Discharge Changes (check if yes) Refer to Discharge Instructions below*
Example: Cardizem CD	180mg	1 capsule	every day	by mouth	this morning	<input type="checkbox"/>
Example: Furosemide	40mg	2 tablets = 80mg	every morning	by mouth	yesterday	<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

Patient Signature: _____ Date: _____

Do not write below this line- Hospital Staff ONLY!

Discharge Instructions:

- The medications you were taking prior to your treatment(s) have been noted.
 - Based on your treatment today, there should be no changes to your home medications. If you have any questions, please contact your primary care physician.
 - Please note the following Discharge Changes* to your home medications:

- NEW Medication Instructions: _____

- If you have questions about medications NOT prescribed by your [Insert Dept. Physician], please contact your primary care physician.

MD/RN Signature: _____ Date: _____

Patient Signature: _____ Date: _____

Integrating Medication Reconciliation into Existing Workflow

Medication Reconciliation – Inpatient Core Process

1. ADMISSION

- ✓ **Physician** documents home medications and plan for meds in Med Profile Tab (single shared medication list)



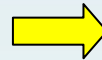
- ✓ **Nurse** reconciles home medication list with patient and then with current orders (prompted after physician has completed Med Rec or at 4 hrs post admission)



- ✓ **Pharmacist** reconciles home medications with current orders (prompted if pt. has not received Med Rec at 16 hours or once nursing task is complete)

2. TRANSFER

- ✓ **Physician** to place “transfer order” – “have reviewed current medications and reconciled with patient’s home medication list in Med Profile Tab”



- ✓ **ICU Pharmacist** to reconcile home medications with current medications upon transfer in and transfer out of the ICU

3. DISCHARGE

- ✓ **Physician** to place “discharge order” – “have reviewed patient’s home medication list in Med Profile Tab”
- ✓ Physician to update Med Profile Tab and to insert medications into Discharge Summary and Discharge Instructions

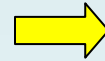
- ✓ **Nurse** will complete Medication Reconciliation section of the Discharge Form and contact physician if Med Profile is not updated

- ✓ **Physician** updates Medication list and it is communicated to next care provider (includes PCP) via email, voicemail, fax or paper document)
- ✓ Medication list must also be given to patient upon discharge

Medication Reconciliation - Outpatient Process

Procedural Areas and Emergency Department

ADMISSION/ENTRY



DISCHARGE

- ✓ Patient asked to provide list of home meds during the initial **nursing** assessment

- ✓ **Physician** will review medication list documented in the paper form when developing the plan of care (reconciliation will occur as physician is placing orders or prescribing additional meds)

- ✓ **Nurse** reviews special discharge instructions with the patient and provides a copy of the medication list.
- ✓ New medications will be added to the paper chart.



PT. ADMITTED

- ✓ Paper chart will follow the patient to an inpatient floor

Incorporating Prompts and Reminders into Clinicians' Workflow

Standardized Process – Electronic Environment

Pharmacy - Medication Reconciliation

Change View

Medication Profile

Name	SIG	C	I	L
Medication(s) Being Given				
Current				
lisinopril	2.5 mg, PO, Daily, Start: 02/28/07 10:00:00			
metoprolol (Lopressor)	5 mg, IV Push, Once, Start: 02/27/07 18:00:00, Stop: 02/27/07 18:00:00			
Adult TPN 1000 mL	IV Infusion, Rate: 41.67 mL/Hour, Start: 02/27/07 13:30:00, 1000 mL (Bag Vol)			
Past				
Prescription(s)/Home Medication(s)				
Current				
Hx furosemide (Lasix 10 mg/ml oral liquid)	4 mL PO Daily 0 Refill(s) 0 Tot. Refills			
Hx diltiazem (Cardizem CD 360 mg/24 hours oral capsule, extended release)	1 Cap PO Daily 0 Refill(s) 0 Tot. Refills			
Hx warfarin (Coumadin 3 mg oral tablet)	1 Tab PO Every Thursday 0 Refill(s) 0 Tot. Refills			
Hx warfarin (Coumadin 4 mg oral tablet)	1 Tab PO Every Mon/Wed/Fri (HS) #13 Tab 0 Refill(s) 0 Tot. Refills			
Hx metoprolol (Lopressor 1 mg/ml injectable solution)	5 mL IV Q 2 Minutes 0 Refill(s) 0 Tot. Refills			
Past				

History Verification Documentation

Home medications above are correct and complete without modification.
 Home medications above were modified. See comments.
 Unable to obtain information regarding home medications at this time
 Reviewed home medications available in medical record and documented above.

Information source: (check all that apply)

Patient
 Past Medical Records
 Patient's Medication List
 Prescription Bottles
 Family Caregiver
 Community Pharmacy
 Physician H&P (current admission)
 Other.

Comments - Home Medication Verification

9

Reconciliation Documentation

Home medications correspond with current inpatient medications
 Discrepancies exist; however, these are appropriate to the patient's condition. Details in comments.
 Discrepancies exist. Physician consulted to resolve. Details in comments.

Comments - Reconciliation

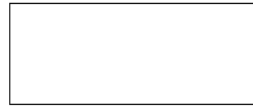
9

Transfer Reconciliation Documentation

9

Standardized Process – Paper Chart Environment

[Insert Organization Name/Logo Here]
 Department of [Dept. Name Here]
 Medication / Discharge Form



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 - Please note the following Discharge Changes* to your home medications:

- NEW Medication Instructions: _____

- If you have questions about medications NOT prescribed by your [Insert Dept. Physician], please contact your primary care physician.

MD/RN Signature: _____ Date: _____

Patient Signature: _____ Date: _____

The Power of Leadership: Organizational Support Implementation

Create the Medication Reconciliation Story for your organization

- Acknowledge the scope of Medication Reconciliation to include all patients who receive medications, across multiple disciplines and numerous practice settings
- Convene a Medication Reconciliation Leadership meeting to agree why this effort is important
 - Executive voice to prioritize the commitment
 - Involve leadership and customize a compelling message from each constituent
 - Mobilize the Leadership Group to drive change and provide direction
- Goal: Sustainability to weave medication reconciliation into the culture and practices for safe medication management.

Multi-disciplinary Team Training and Implementation

Multi-Disciplinary Team Training for Medication Reconciliation

- Introduction delivered by hospital leaders
 - Key leaders in the organization set the tone for training and implementation
- Physicians, nurses and pharmacists attend training classes together
 - Promotes a team approach
 - Creates an appreciation of the interdependency of each discipline in the medication reconciliation process
 - Creates a clear understanding about who is supposed to do what
 - All disciplines are consistently trained

“Critical Thinking” – Clarifying Medication Discrepancies*

CATEGORY	DEFINITION	EXAMPLE	FOLLOW-UP? (Yes/No)
<i>“One-to-One” Match</i>	Medications ordered for patient during the episode of care or upon discharge match what the patient was taking prior to admission (entry)	<ul style="list-style-type: none"> ▪ Patient takes furosemide 40 mg by mouth twice daily at home which is ordered upon admission. ▪ Patient’s pre-admission dose of simvastatin 40 mg by mouth every evening is continued during the hospital stay and at discharge. 	No
<i>Intended Discrepancy (i.e., purposeful)</i>	Discrepancies exist but are appropriate based on the patient’s plan of care	<ul style="list-style-type: none"> ▪ Antibiotics started for infection ▪ “As needed” medications ordered for pain/fever ▪ Pre-admission doses of patient’s blood pressure medications changed due to hypotensive episodes ▪ Warfarin and aspirin held for a procedure ▪ Formulary substitution 	No
<i>Unintended Discrepancy</i>	Discrepancies exist and require clarification of intent because there is no supporting documentation or explanation based on the patient’s current clinical condition or care plan	<ul style="list-style-type: none"> ▪ The patient takes her blood pressure medication twice daily at home but it’s ordered only once daily in the hospital. No indication for frequency change and patient’s current blood pressure slightly elevated. ▪ Patient’s simvastatin was omitted from their discharge instructions without any clear indication for why. 	Yes- MD should be consulted for resolution and resulting changes/clarifications documented.

*Adapted from Gleason et al. Reconciliation of discrepancies in medication histories and admission orders of newly hospitalized patients. *Am J Health-Syst Pharm.* 2004; 61:1689-95.

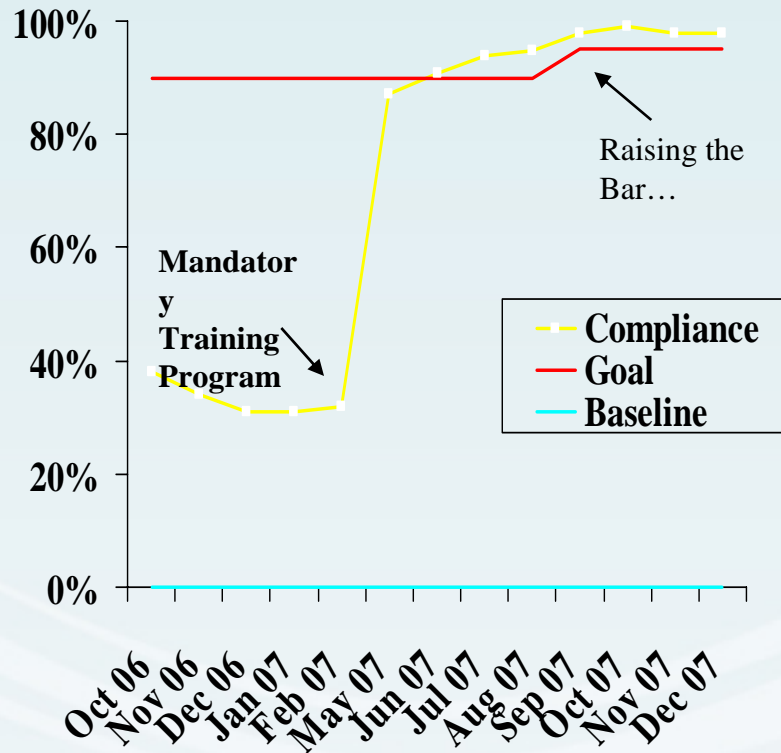
Medication Reconciliation Compliance and Quality Assessments

Creating and Reinforcing Accountability

- Leadership dashboards – overall performance
- “Real-time” audits by discipline
- Quality management committees
- In depth evaluation of accuracy and completeness

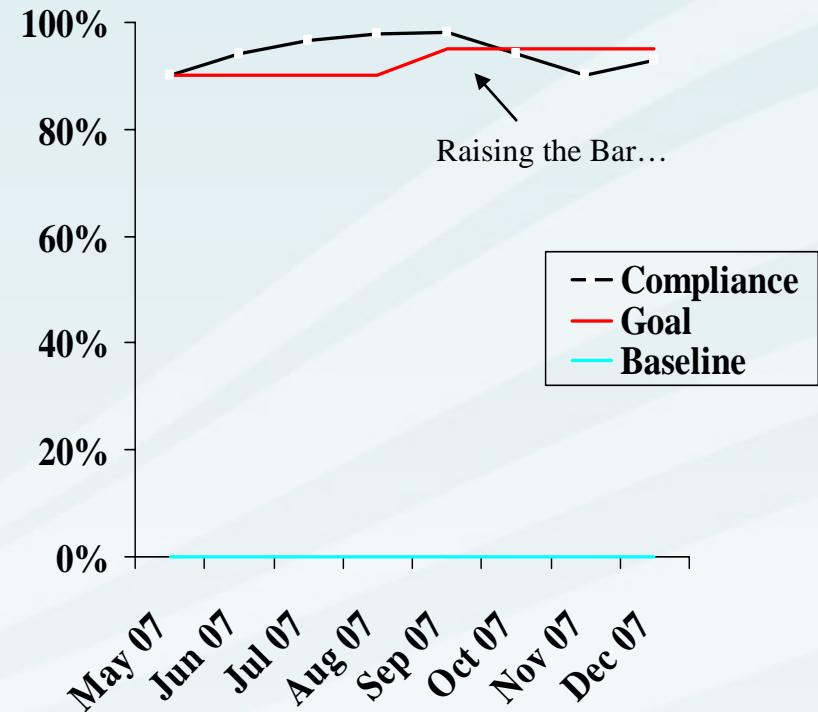
Medication Reconciliation Results - Admission

Compliance with Medication Reconciliation Inpatient Admission



Definition: Documented compliance with recommended Medication Reconciliation process upon inpatient admission (physician, nurse, and/or pharmacist)

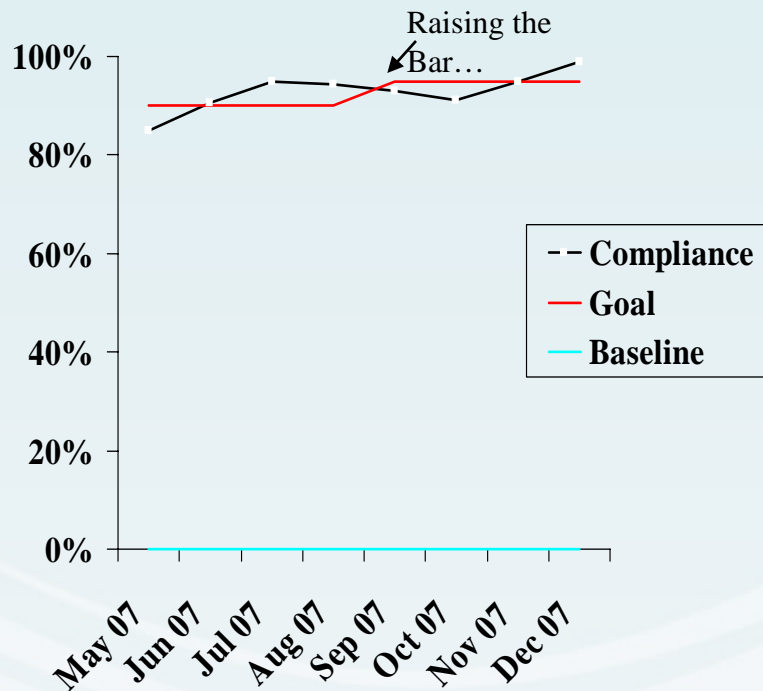
Compliance with Medication Reconciliation Outpatient Admission/Arrival



Definition: Documented compliance with recommended Medication Reconciliation process upon outpatient arrival (includes 20 departments)

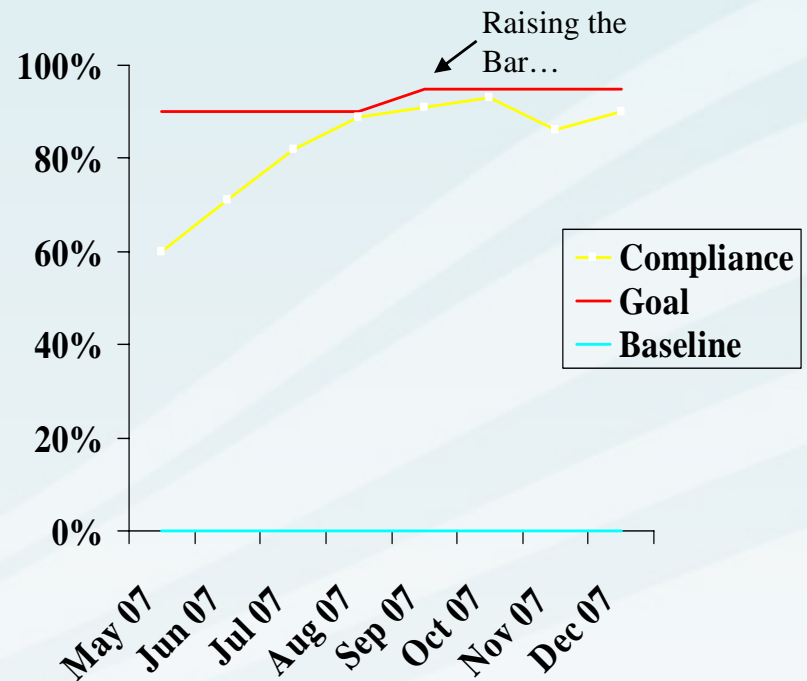
Medication Reconciliation Results - Discharge

**Compliance with Medication Reconciliation
Inpatient Discharge**



Definition: Documented compliance with recommended Medication Reconciliation process at discharge (physician and nurse)

**Compliance with Medication Reconciliation
Outpatient Discharge**



Definition: Documented compliance with recommended Medication Reconciliation process upon discharge (physician and nurse)

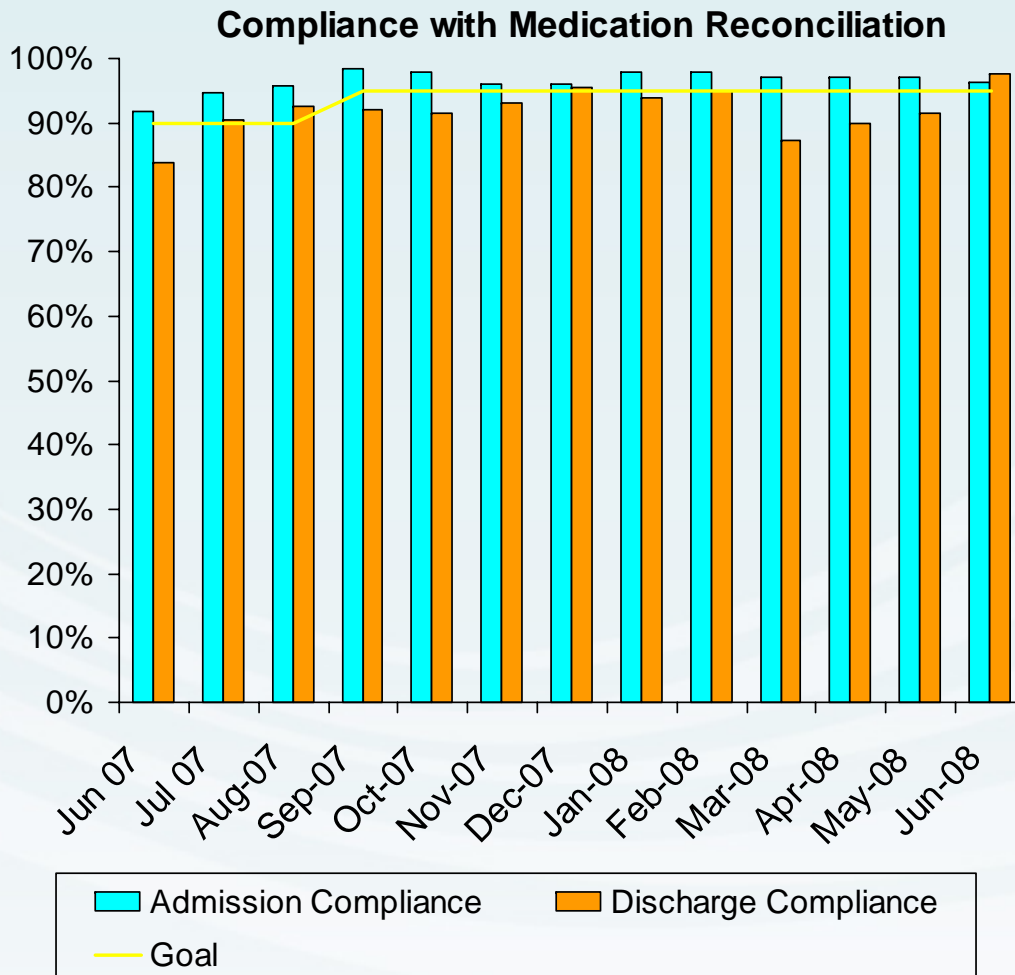
Medication Reconciliation Results

Multi-disciplinary Team Approach at Admission

Medication Reconciliation – Electronic Audit					
<i>Randomly selected sampling days</i>	11/3/07	11/12/07	11/28/07	12/15/07	12/31/07
Overall Compliance	99%	98%	98%	96%	100%
-Physician Compliance	91%	90%	92%	85%	92%
-Nurse Compliance	80%	91%	84%	91%	90%
-ICU Pharmacist Compliance	100%	100%	88%	100%	100%

Accurate Medication Reconciliation

Audits to measure outpatient/procedural med rec at discharge will continue, although starting June, 2008, reporting this measure on the BPE dashboard will be temporarily suspended. Significant positive changes recently announced by The Joint Commission (TJC), effective 2009, will direct NMH efforts to prepare for a more meaningful process of med rec in these areas.



Admission Compliance Definition Numerator: Documented compliance with recommended Medication Reconciliation upon inpatient admission (physician, nurse, and/or pharmacist) or upon outpatient arrival (includes 22 departments). Denominator: Inpatient and Outpatient sampled admissions

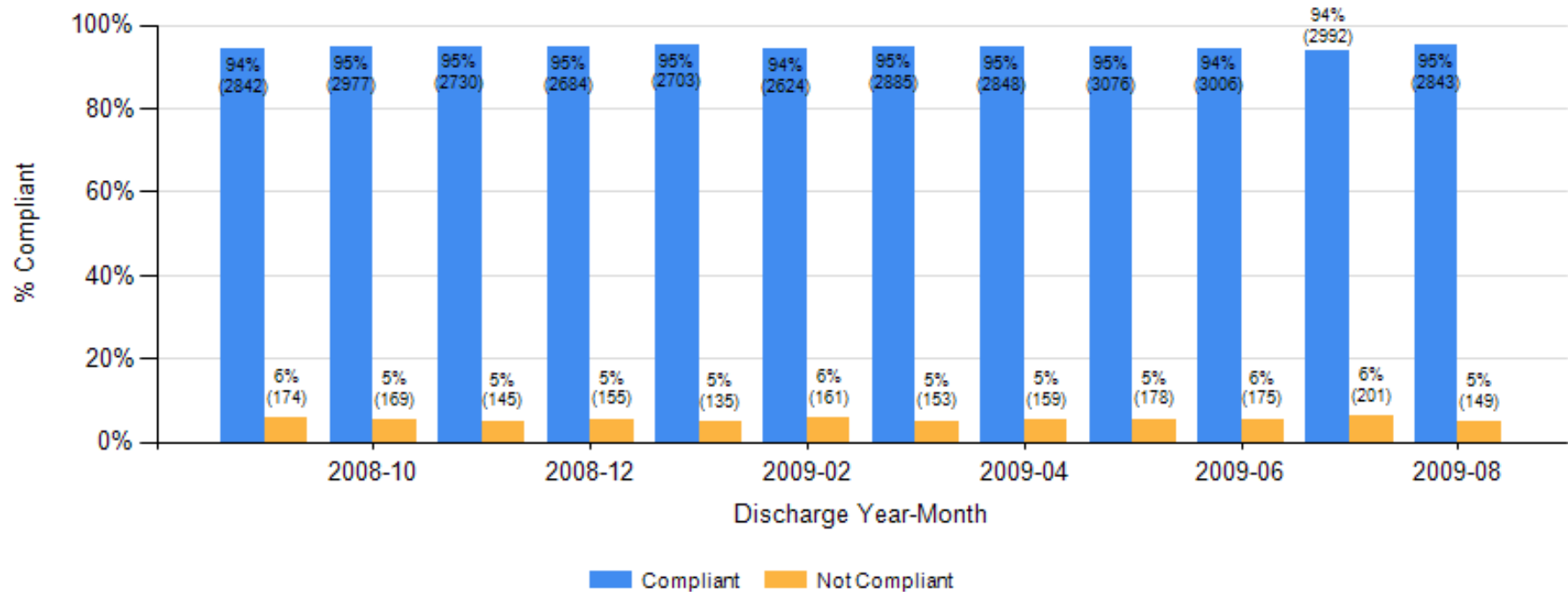
Discharge Compliance Definition Numerator: Documented compliance with recommended medication reconciliation upon inpatient discharge or outpatient/procedural area (physician and nurse). Denominator: Inpatient or Outpatient sampled discharges. (**Starting 6/08, reflects inpatient sampled discharges only**)

Inpatient data based on 4 randomly selected sampling days per month through 9/07. Starting 10/07, modified to two randomly selected sampling days per month

Outpatient data based on review of 3 to 5 randomly selected medical records per week per outpatient/procedural area through 9/07. Starting 10/07, modified to a minimum of three to five randomly selected medical record reviews per month per outpatient/procedural area

NPSG: Medication Reconciliation Compliance

NMH Accurate Medication Reconciliation - Inpatients



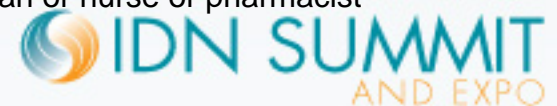
Denominator: All NMH inpatients discharged during the specified time period.
 Numerator: Patients with Med Rec Completed at both Admission and Discharge

'Med Rec Completed on Admission': Medication Reconciliation form completed by physician or nurse or pharmacist

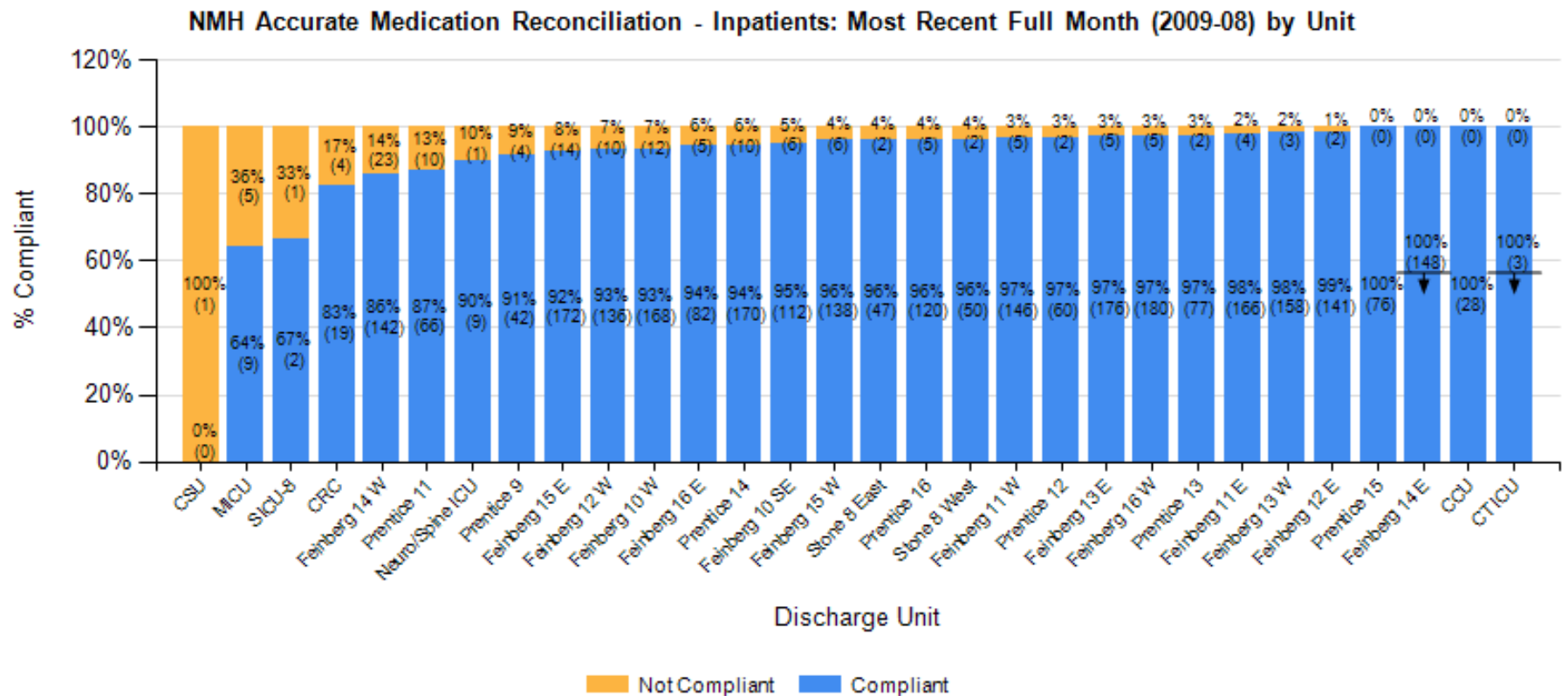
'Med Rec Completed on Discharge': Documented completion of Nursing Discharge Note

Patients are excluded if: Expired, Left AMA, Neonate, Newborn

Data Source: PowerChart, EDW report



Med Rec Drilldown Compliance By Nursing Unit



Data Source: PowerChart, EDW report

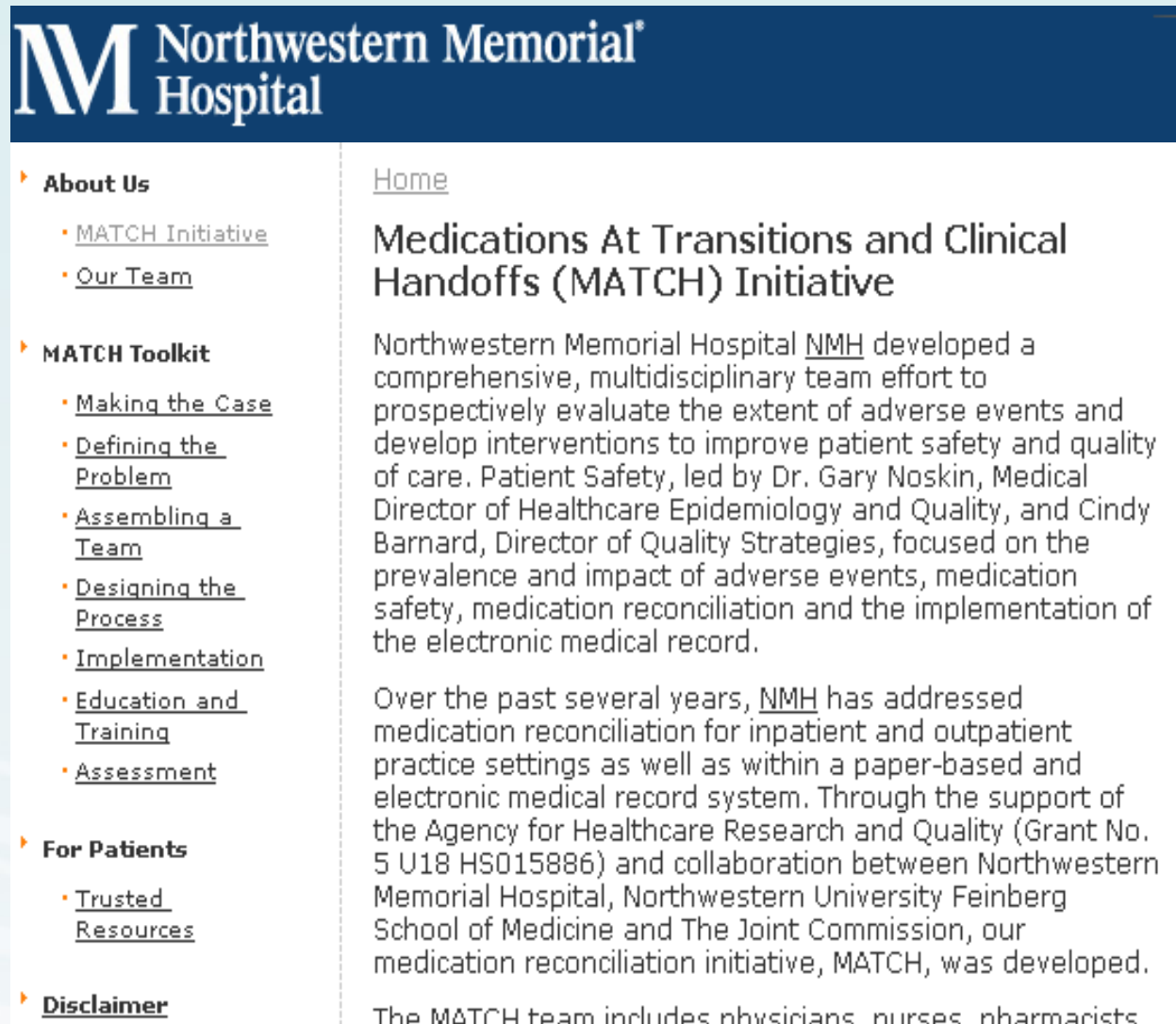
Assessing the Quality of Medication Reconciliation

Goal: To eliminate avoidable adverse drug events and associated patient harm due to medication discrepancies.

- Evaluation of the medication reconciliation process post-implementation to determine:
 - Frequency and causes of medication reconciliation failures
 - Type of discrepancies involved
 - Potential patient harm averted
 - Patient and/or medication-related risk factors frequently responsible for inaccurate medication reconciliation

Supported by grant number 5 U18 HS015886 from the Agency for Healthcare Research and Quality (AHRQ).

Access our Medication Reconciliation Toolkit at:
www.medrec.nmh.org



M Northwestern Memorial Hospital

- ▶ **About Us**
 - [MATCH Initiative](#)
 - [Our Team](#)
- ▶ **MATCH Toolkit**
 - [Making the Case](#)
 - [Defining the Problem](#)
 - [Assembling a Team](#)
 - [Designing the Process](#)
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Medications At Transitions and Clinical Handoffs (MATCH) Initiative

Northwestern Memorial Hospital [NMH](#) developed a comprehensive, multidisciplinary team effort to prospectively evaluate the extent of adverse events and develop interventions to improve patient safety and quality of care. Patient Safety, led by Dr. Gary Noskin, Medical Director of Healthcare Epidemiology and Quality, and Cindy Barnard, Director of Quality Strategies, focused on the prevalence and impact of adverse events, medication safety, medication reconciliation and the implementation of the electronic medical record.

Over the past several years, [NMH](#) has addressed medication reconciliation for inpatient and outpatient practice settings as well as within a paper-based and electronic medical record system. Through the support of the Agency for Healthcare Research and Quality (Grant No. 5 U18 HS015886) and collaboration between Northwestern Memorial Hospital, Northwestern University Feinberg School of Medicine and The Joint Commission, our medication reconciliation initiative, MATCH, was developed.

The MATCH team includes physicians, nurses, pharmacists,

Supported by grant number 5 U18 HS015886 from the Agency for Healthcare Research and Quality (AHRQ)



Questions and Discussion

- Open forum to discuss:
 - Ideas regarding building and sustaining momentum and focus
 - How to break down barriers to adoption

Thank you for your Participation!

Would like to Acknowledge:

Kristine Gleason, RPh, Clinical Quality Leader

Mary Lou Green, MHA, Process Improvement Leader

Quality and Operations Division

Northwestern Memorial Hospital, Chicago IL

MATCH Toolkit available at:

<http://www.medrec.nmh.org>

We acknowledge the support of the Agency for Healthcare Research and
Quality (AHRQ) 5 U18 HS015886

