

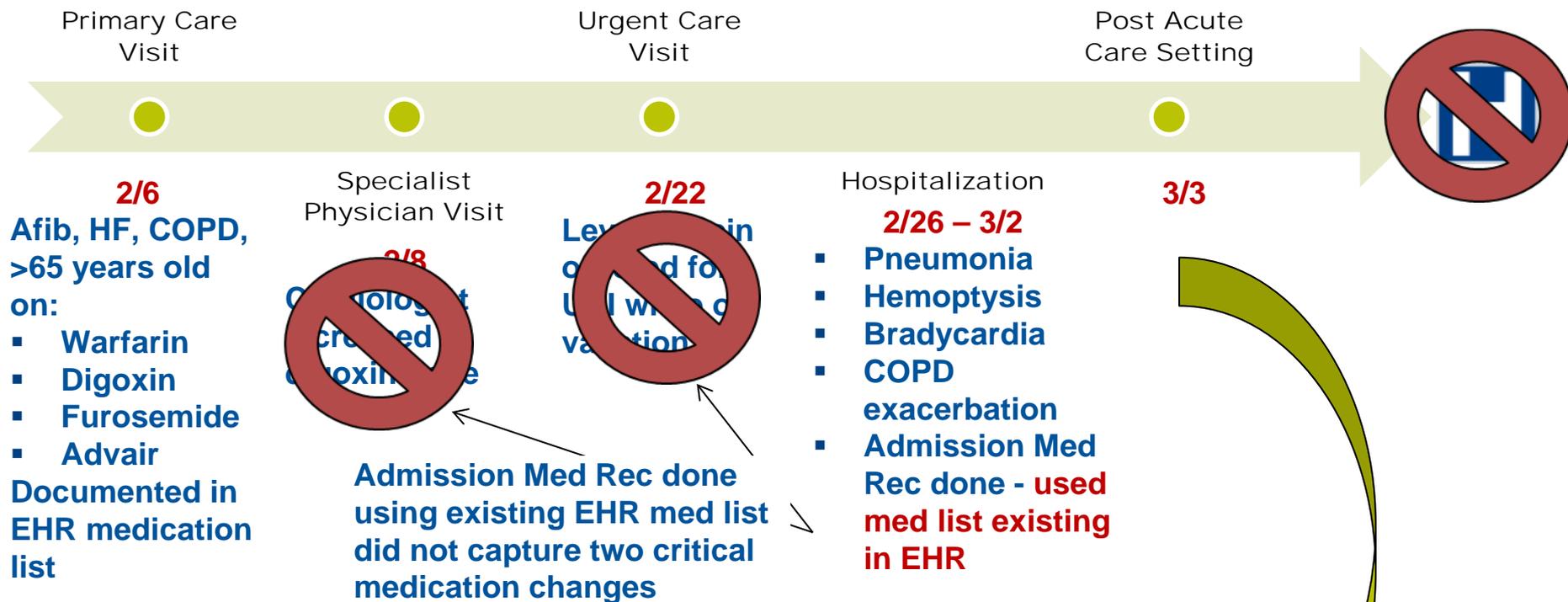
Medication Reconciliation Across Care Transitions

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NYS Partnership for Patients Webinar
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Objectives

- Define medication reconciliation as a component of medication management and discuss the impact of discrepancies and adverse drug events
- Discuss the importance of medication reconciliation on discharge and safe care transitions
- Suggest improvement strategies for medication reconciliation on discharge
- Provide strategies for engaging patients and care partners in the medication reconciliation process



Care Transition Challenge:

Capturing medication related problems (MRPs) and changes, comprehensively and efficiently, that may have been missed by any care setting during the care transition process

Medication Management, Medication Reconciliation and Impact of Medication Discrepancies

Medication Management

■ Medication History

- up-to-date listing of all prescription and over-the-counter medications, herbal supplements and vitamins

■ Medication Reconciliation

- comparison of one or more medication lists to new one
 - resolve discrepancies
 - identify and resolve medication related problems
- should occur whenever there is a care transition, or change in medications or diagnosis

■ Medication Adherence

Medication Discrepancies

■ **Unintended or unexplained/undocumented differences among medication lists across different sites of care.**

Examples are:

- **Omissions**
 - **Duplications**
 - **Dose/frequency/route of administration errors**
 - **Drug name discrepant/incorrect**
- **Sometimes discrepancies are differentiated as “intended” or “unintended” – intended discrepancies would have the rationale documented**

Medication Discrepancies & Adverse Drug Events (ADEs)

- **ADE: “an injury resulting from medical intervention related to a drug.”**
- **Estimated 70% of patients experience an actual or potential unintended discrepancy at hospital discharge, which can then precipitate an ADE**
- **Preventable ADEs identified within hospitals, nursing homes, and ambulatory care range between 27% and 50%**
- **ADEs and issues with medication reconciliation across care settings are major drivers for hospital readmission**

“Medication Discrepancies upon Hospital to Skilled Nursing Facility Transitions”

- A cross-sectional study was conducted among two skilled nursing facilities to look at the prevalence, type and source of medication discrepancies upon admission to the facility from hospital
- Description of the prevalence of medication discrepancies in the SNF setting
- 495/2,319 admission medications were reviewed as discrepancies (21.3%)
- 104/199 discharge summary and the patient care referral form did not match for at least one medication in SNF admissions (52.3%)

“Medication Discrepancies upon Hospital to Skilled Nursing Facility Transitions”

- **Description of the sources of those discrepancies**
 - Both dose & route were frequently omitted or discrepant (42%)
 - Drug name discrepancy (29.3%)
 - Frequency of administration (30.5%)
- **Description of the classes of medications with discrepancies on admission to SNF**
 - GI (15.6%), Cardio (12.7%), Opioids (12.3%), Neuropsych (7.9%), Hypoglycemics (7.7%), Anticoagulants (6.9%)

“Medication Discrepancies upon Hospital to Skilled Nursing Facility Transitions”

■ Discussion

- Medication regimens did not match between hospital discharge summary and patient care referral form in over 50% of all SNF admissions.
 - Partially explained by dictation & transcription errors known to occur in discharge summaries
 - Incorrect medication information: hospital physicians should ensure that medication information in the discharge summary is correct at time of discharge

“Medication Discrepancies upon Hospital to Skilled Nursing Facility Transitions”

■ Discussion

- Discharge summary may be completed up to 24 hours in advance and changes in therapy may not be updated → disconnect in timing
- Importance in documentation: e.g. document **REASON** for changes to previous medication regimens to aid in managing the handoff to the PCP at the appropriate time

Impact of Medication Reconciliation on Discharge

- Medication reconciliation, as part of a package of interventions, decreased the rate of medication errors by 70% and reduced adverse drug events by over 15%
- Medication reconciliation reduced discharge medication errors from 90% to 47% on a surgical unit and from 57% to 33% on a medical unit of a large academic medical center

Impact of Medication Reconciliation on Discharge

- **Common elements of successful interventions**
 - ***Targeting of a high-risk subgroup***
 - **Elderly**
 - **Patient on high risk drugs**
 - **History indicates health at risk**
 - ***Institutional support***
 - ***Performing the intervention in a defined population***
 - **Patients to/from a nursing home or home care agency**
 - **Elective surgical admission**

Impact of Medication Reconciliation on Discharge

■ Intensive Pharmacist Intervention

- Medication histories and reconciliation on admission and discharge
- Patient and provider medication counseling during hospitalization
- Communication with the primary care physician on discharge
- Communication with the patient 2 months after discharge
- Results
 - 16%↓ the odds of all hospital visits (odds ratio, 0.84; 95% CI, 0.72-0.99)
 - 47% ↓ in emergency department visits
 - 80% ↓ in drug related readmissions in the 12 months after hospital discharge

The Medication Reconciliation Process

- **Four Components**

- **Verification**

- “best possible medication history”, includes med list comparisons and patient interview

- **Clarification**

- Identification and resolution of discrepancies and clinical medication related problems (MRPs)

- **Documentation**

- Discrepancy and/or MRPs
- Communication with prescriber, receipt of orders for resolution

- **Transfer/Transitions**

Medication Reconciliation Challenges

- **Lack of standardized process, clear ownership**
- **Communication failures**
- **Coordination gaps**
- **Non-formulary medications and therapeutic interchanges**
- **Lack of standardized medication list “source of truth”**

Improvement Basics: Obtaining the Best Possible Medication History

- Obtaining and comparing existing medication lists
 - Pre-hospital admission med list
 - EHR medication list
 - Community pharmacy – *critical for understanding patterns of adherence*
 - Health Information Exchange list (SureScripts, DrFirst, local RHIO)
 - Hospital discharge medications list
 - Inventory of medications in home
- Patient/family/care partner interview
 - Structured questions: MARQUIS Med Rec Toolkit and Resources

IPRO Care Transitions Project

- **Integrating Care for Populations and Communities**
- **Improving transitions: Hospital – Skilled Nursing Facility (SNF)**
 - **Goal is to decrease hospital readmissions from SNF**
 - **Convened workgroup comprised of 8 SNFs and 3 hospitals in one upstate NY county**
 - **SNF: Administrators, Medical Directors, Directors of Nursing**
 - **Hospital: Discharge Coordinators, Hospitalist Physicians, Pharmacists**
 - **Bring care transition issues to table monthly – IPRO assists with root-cause analysis of identified problems, suggests evidenced-based interventions**

IPRO Care Transitions Project

- **Improving transitions: Hospital – SNF**
- **Issue: Time consuming Medication Reconciliation process on SNF side post hospital discharge due to medication discrepancies**
- **Process:**
 - **Measure: SNF completed Medication Discrepancy Tool upon readmit to SNF from hospital**
 - **Analyze: SNF shared completed MDTs with hospital pharmacy and IPRO**
 - **IPRO analyzed % discrepancies and categories per hospital**
 - **Hospital pharmacies investigated each discrepancy**

Medication Discrepancy Tool (MDT)

- Adapted from Dr. Eric Coleman, Care Transitions Intervention (CTI) program to identify & characterize medication discrepancies that occur during transitions
- Discrepancies identified are characterized as either patient level or system level to capture wide range of transition related medication problems
- Facilitates resolution of these problems by describing appropriate action steps and cross setting feedback
- Tool can be found at: www.ipro.org/index/ct-tools-intervention-resources

Medication Discrepancy Tool (MDT)

Adapted from Medication Discrepancy Tool at www.caretransitions.org

Medication	Causes and Contributing Factors <i>List all that apply from list below (By Number)</i>	Resolution <i>List all that apply from list below (By Number)</i>
1.		
2.		
3.		
4.		
5.		
Causes and Contributing Factors:		Resolution:
<u>Discrepancies (Patient Level)</u> 1. Adverse drug reaction or side effect 2. Intolerance 3. Did not fill prescription 4. Patient feels they do not need prescription 5. Money/financial barriers 6. Intentional non-adherence (<i>"I was told to take this but I chose not to"</i>) 7. Non-intentional non-adherence (Knowledge deficit – <i>"I don't understand how to take this medication"</i>) 8. Performance deficit (<i>"Maybe someone showed me, but I can't demonstrate to you that I can"</i>)		1. Clinician contacted primary provider and clarified medication regimen 2. Discussed potential benefits and harm that may result from non-adherence 3. Provided resources and information to facilitate adherence 4. Addressed performance/knowledge deficit 5. Encouraged patient to call their doctor 6. Primary provider will address problem at next visit 7. Encouraged patient to schedule an appointment with primary provider or to discuss problem at next provider visit 8. Other (<i>please explain</i>) _____
<u>Discrepancies (System Level)</u> 9. Prescribed with known allergy/intolerance 10. Discharge instructions incomplete/inaccurate/illegible (includes use of "resume all meds" order) 11. Duplication (<i>Taking multiple drugs with the same action without any rationale</i>) 12. Incorrect label 13. Incorrect dosage 14. Incorrect quantity 15. Cognitive impairment not recognized 16. No caregiver/need for assistance not recognized 17. Sight/dexterity limitations not recognized		

Did the patient have a problem obtaining their medications when they went home?

YES NO

Have all new prescriptions been filled?

YES NO

How long was it before the patient was able to obtain new prescriptions?

____ (Hours/Days)

MDT Tracking – Discrepancies Identified by Receiving Facilities

Receiving facility (SNF, HHA, etc.)	Date of Hospital DC	Medication	Cause and contributing factors (list all that apply)				
			Ordered medication conflicts with patient's listed allergies	Discharge instructions incomplete/inaccurate/illegible/ does not match hospital paper work (includes use of "resume all meds" order)	Duplication (multiple drugs ordered with the same action without any rationale)	Dose, frequency, route discrepancy	Drug name discrepant/incorrect
			No=0, Yes=1	No=0, Yes=1	No=0, Yes=1	No=0, Yes=1	No=0, Yes=1
EGC	10/18/2011	Hydralazine	0	1	0	0	1
EGC	10/18/2011	Imdur	0	1	0	0	1
EGC	10/18/2011	Synthroid	0	1	0	0	1
EGC	10/18/2011	Flush protocol	0	1	0	0	1
EGC	10/12/2011	Triamcinolone Cream	0	1	0	0	1
EGC	10/12/2011	Aranesp	0	1	0	0	1
EGC	10/12/2011	Iron	0	1	0	0	1

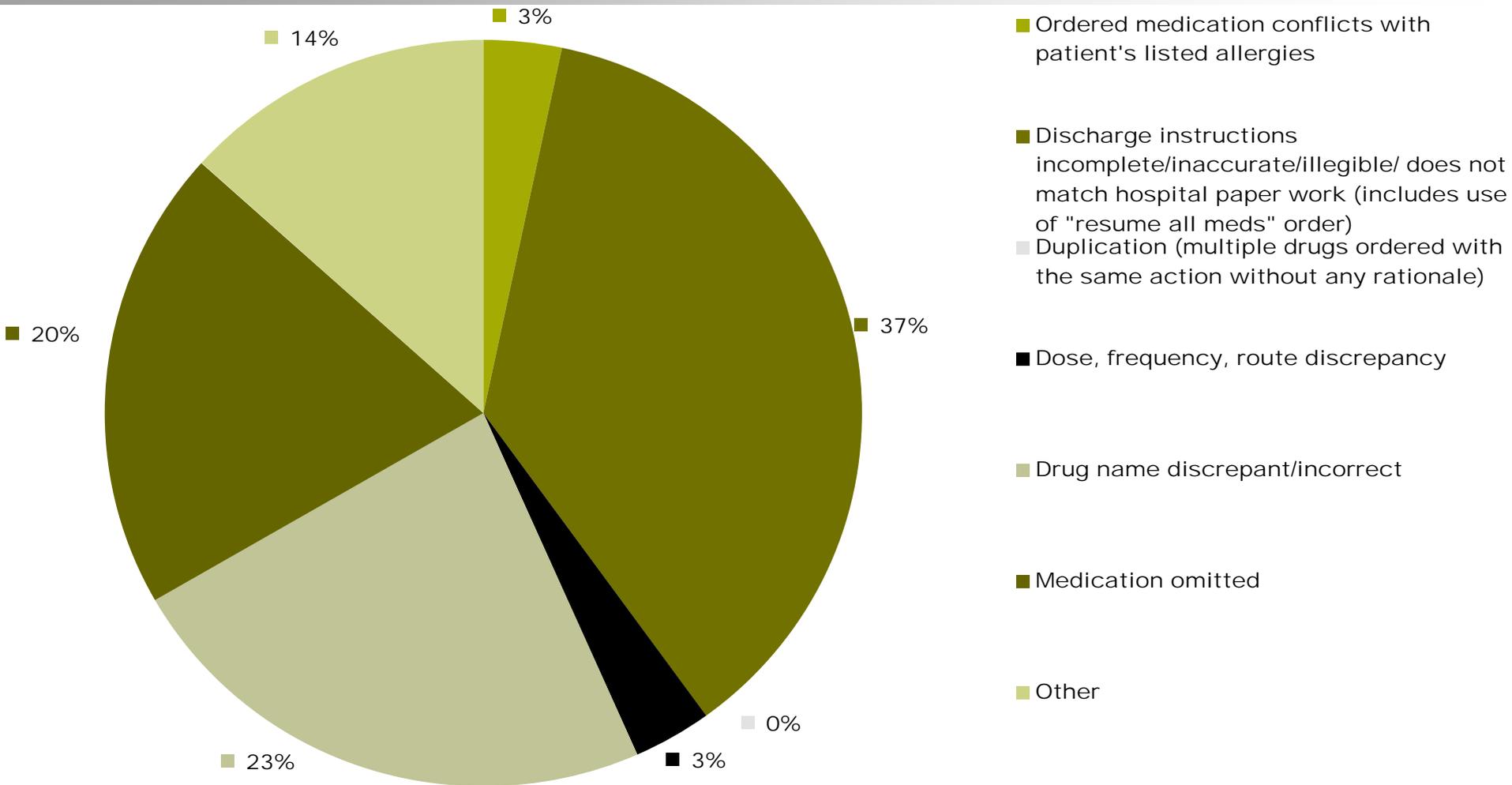
MDT Tracking – Discrepancies Identified by Receiving Facilities

Medication omitted	Other	Resolution	Delay in starting medication	Lenth of delay (days)	Comments
			No=0, Yes=1		
0	0	Notified & clarified with hospital	0	0	Written as Hydrochlorothiazide
0	0	Notified & clarified with hospital	0	0	Written as Humidor
0	0	Ordered clarified by MD	0	0	
0	1	Spoke with RN for protocol	0	0	Did not know their protocol
0	0	Called pharmacy to verify order	1	1	Vesicare cream ordered for breasts, abdominal folds and groin, but no such cream
0	0	Held until lab results sent	1	7	Not sure when given last
0	0	Clarified with NP	0	0	Not sure if NP wanted iron or vitamin B complex

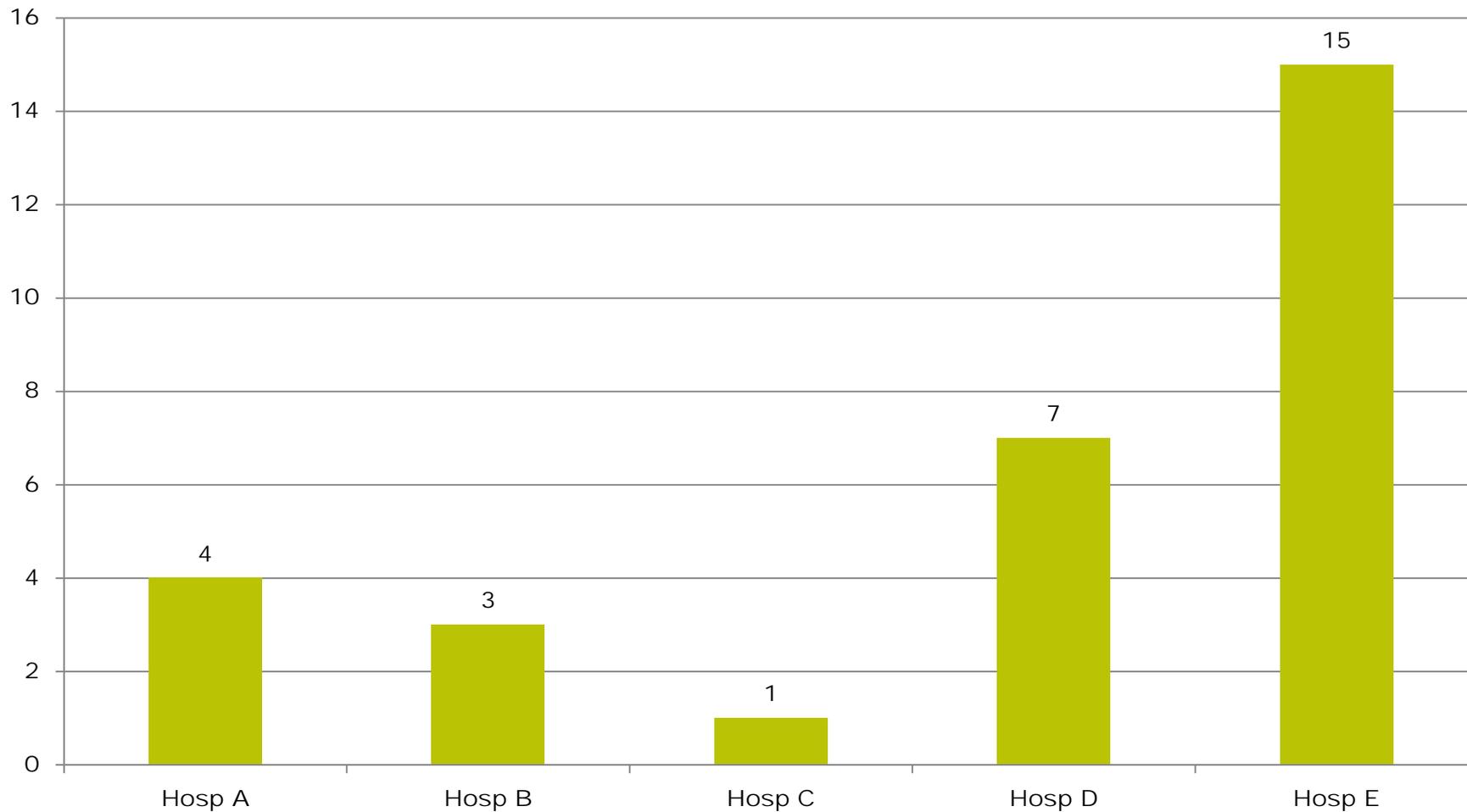
MDT Tracking – Discharging Hospitals Aggregate

Start date	End date			Ordered medication conflicts with patient's listed allergies	Discharge instructions incomplete/inaccurate/illegible/ does not match hospital paper work (includes use of "resume all meds" order)	Duplication (multiple drugs ordered with the same action without any rationale)	Dose, frequency, route discrepancy	Drug name discrepant/incorrect	Medication omitted
7/1/2011	11/1/2011		Hosp A	1	0	0	0	0	0
			Hosp B	0	2	0	1	0	0
			Hosp C	0	1	0	0	0	0
			Hosp D	0	1	0	0	0	6
			Hosp E	0	7	0	0	7	0
			Total count	1	11	0	1	7	6
			%	3.33%	36.67%	0.00%	3.33%	23.33%	20.00%

Percentage of Discrepancy Categories Across Hospitals 7/2011 - 10/2011 (reported from 2 SNFs)



Number of Discrepancies per Hospital 7/2011 - 10/2011 (n=30 reported from 2 SNFs)



Improving Transitions: Hospital – SNF

■ Results:

- Most discrepancies were minor, i.e. Iotrimin vs. Iotrisone
- Major discrepancies involved antihypertensives, anticoagulants, duplication of therapy/formulary issues

■ Action:

- Dialogue between Hospitals and SNFs based on cases reviewed revealed opportunities for improvement
- Development of “gold standard” recommendations for medication reconciliation at hospital discharge based on community best practices and literature

Engaging Patients and Care Partners

Role of Provider

- **The Provider collaborates with:**
 - **Physicians**
 - **Nurses**
 - **Social workers**
 - **Discharge planners**
 - **Pharmacists**
- **Focuses on increasing patient's and care partner's ability to manage care**
- **Ensures that patients and care partners have the knowledge and skills to recognize and address health care problems as they arise**

Role of Patient and Care Partners

- **Two-way communication with provider during medication reconciliation at times of transition**
- **Learn medication management skills**
- **Maintain accurate personal health record**
- **Ensure timely medical follow up**
- **Knowledge of “red flags” that indicate worsening condition – and knowledge of action needed**



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Medication Reconciliation

What is Medication Reconciliation?



Medication reconciliation is part of patient safety. Patients should bring a complete and accurate list of medications they use at home, or bring all their medication vials to their hospital and doctor visits. You may be asked about your medications several times to make sure your medication list is correct. It is important to tell your healthcare team about all the medications you take, including:

- Prescription medications
- Over-the-counter medications (i.e. Aspirin, Tylenol)
- Herbal and natural health products
- Alcohol and any other recreational drugs (i.e. marijuana, etc.)

If you need assistance, a family member or community pharmacist may help you. This is important information used to:

- Improve your quality of care.
- Ensure you get the correct medications during your hospital stay.
- Prevent errors from incorrect medication information.

Visits to the hospital are often emergent, so complete your card today!

[Medication Reconciliation Brochure with Form](#)

["Fillable" PDF Medication Reconciliation Form](#)

<http://www.hahv.org/medication-reconciliation>

Importance of Medication Reconciliation

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<http://www.hahv.org/medication-reconciliation>

Importance of Medication Reconciliation

Your Role in Medication Reconciliation

Medication Safety Once You Leave the Hospital

Forms

Video: Know Your Meds

- Make sure to ask your doctor if they prefer you bring your updated medication list or all your medication vials to your next appointment.
- Ask your doctor, nurse and pharmacist about the management of your home medications while in the hospital.
- Tell your nurse if you think you missed a dose of a home medication.
- Consult one of your health care providers before taking any medications that you brought from home (including over-the-counter medications and herbal health products).
- Before you leave the hospital, make sure you understand why and how to take all new medications you started while in hospital.
- Use one pharmacy – this ensures that one pharmacy has all your medication information.

<http://www.hahv.org/medication-reconciliation>

Medication Adherence

- **40-80% of elderly patients do not adhere to prescribed medications**
- **25% non-adherence rate for general population**

Factors Affecting Adherence

- **Changes in functional status**
 - **Decreased vision**
 - **Decreased hearing**
 - **Decreased manual dexterity**
 - **Difficulty swallowing**
 - **Impaired mobility**

Factors Affecting Adherence

- **Mental cognition**
- **Effectiveness of education by healthcare provider to patient/care partner**
- **Intentional non-adherence**
 - **Perception of being overmedicated**
 - **Intelligent nonadherence – related to adverse drug reaction**
 - **Drug abandonment – can't afford, etc.**

Adherence Factors in Dementia

- **Impaired executive function**
 - Difficulty starting/stopping an action, or adapting/responding
- **Personality traits**
 - Independency, high self confidence
- **Lack of social support**
- **Patients with dementia**
 - 2 weeks after hospital discharge: 2-3x ↑ risk of taking either >30% *less* medication or >20% *more* medication

Barriers to Medication Adherence

- **Lack of understanding or misinterpretation of directions**
- **Sensory impairments**
- **Drug regimen interferes with daily activities**
- **Drug regimen is too complex**
- **Lack of understanding why the medication is important or the goals of therapy**
- **Doesn't believe the medication will work or is even necessary**

Morisky Scale

- **Estimates the risk of medication non-adherence**
 - **Four Yes (=0) or No (=1) questions**
 - **Do you ever forget to take your medicine?**
 - **Are you careless at times about taking your medicine?**
 - **When you feel better do you sometimes stop taking your medicine?**
 - **Sometimes if you feel worse when you take the medicine, do you stop taking it?**
 - **0 = lowest adherence, 4 = highest adherence**
 - **Those scoring 0 or 1 benefit most from pharmacist intervention**

Strategies for Improving Adherence

- **Keep medication list up-to-date**
- **Keep medications well organized**
- **Discard expired or unused medications**
- **Ask the doctor if any drugs can be stopped**

Help with Adherence...Asking Questions

- Provide your patients and their care partners with questions that they may wish to ask of a doctor or pharmacist to help with understanding how medications should be taken
- Questions to ask to understand an illness:
 - What is it and what can I expect?
 - What should I watch out for?
 - Will we get home care and will a nurse or therapist come to our home to work with my relative? Who pays for this service?
 - How do I get advice about care, danger signs, a phone number for someone to talk to, and follow-up medical appointments?
 - Have I been given information either verbally or in writing that I understand and can refer to?
 - Do we need special instructions because of Alzheimer's or memory loss?

Help with Adherence...Asking Questions

- **Some examples to ask about medications include:**
 - **Why is this medicine prescribed?**
 - **How does it work?**
 - **How long will the medicine have to be taken?**
 - **How will we know that the medicine is effective?**
 - **Will this medicine interact with other medications? Prescription and nonprescription?**
 - **Should this medicine be taken with food? Are there any foods or beverages to avoid?**
 - **Can this medicine be chewed, crushed, dissolved, or mixed with other medicines?**

Help with Adherence...Asking Questions

- **Some examples of questions to ask about follow-up care when transitioning from hospital to home:**
 - What health professionals will my family member need to see?
 - Have these appointments been made? If not, whom should I call to make these appointments?
 - Where will the appointment be? In an office, at home, somewhere else?
 - What transportation arrangements need to be made?
 - How will our regular doctor learn what happened in the hospital or rehab facility?
 - Whom can I call with treatment questions? Is someone available 24 hours a day and on weekends?

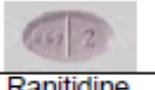
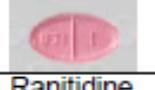
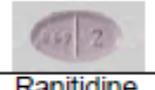
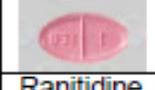
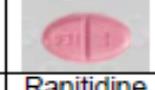
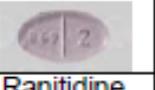
Help with Adherence...Asking Questions

- For more examples of questions to ask please visit:
 - <https://www.caregiver.org/hospital-discharge-planning-guide-families-and-caregivers>

Help with Adherence...Medication Charting

- Chart can include...

- Description of tablet or capsule
- Description of indication, instructions, warnings/precautions

	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Am	Metoprolol 	Metoprolol 	Metoprolol 	Metoprolol 	Metoprolol 	Metoprolol 	Metoprolol 
Noon							
Eve	Warfarin 2mg 	Warfarin 1mg 	Warfarin 1mg 	Warfarin 2mg 	Warfarin 1mg 	Warfarin 1mg 	Warfarin 2mg 
Bed	Ranitidine 	Ranitidine 	Ranitidine 	Ranitidine 	Ranitidine 	Ranitidine 	Ranitidine 

Help with Adherence...Technology

- Alarm watches



- Organizers with reminders

- However...sounds can be intrusive noise that can cause agitation in a person with dementia



Help with Adherence...Technology

- **SMS (short message service) technology**
 - Medication taking reminders by text, phone or email-can attach technology to vial
- **Braille printers, video magnifiers and other assistive devices**
- **Options in home management**

 <p>Automatic Pill Dispenser by Livi \$1,999.00 liviathome.com Free shipping</p>	 <p>Med-e-let Automatic Pill... \$60.50 Jet.com ★★★★★ (11)</p>	 <p>Automatic Pill Dispenser \$149.00 The Alzheimer's... Free shipping</p>	 <p>MedFolio Wireless Pillbox... \$222.95 Walmart Free shipping</p>	 <p>PetSafe Train n' Praise Treat... \$41.39 Chewy.com 26% price drop</p>
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Help with Adherence...Technology

- **Smart phone apps**

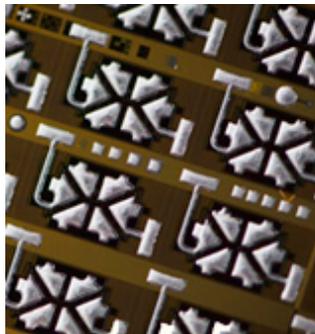
- Includes reminders, medication lists, drug information

- **“intelligent medicine”**

- **Proteus Biomedical - Ingestible Event Markers (IEMs)**



Proteus ingestible sensors



Proteus Chipskin™ protected electronics

Pharmacy Solutions

- **Use one pharmacy or pharmacy chain**
 - **Can view patients entire med history regardless of location used**
- **Courtesy refills/automatic refills (for non-Medicaid)**
- **Synchronization of prescriptions**
 - **Great...but be mindful of all co-pays due at once monthly**
- **Delivery options**
- **Organization - Pill boxes to automated dispensing devices**
- **Non-child safety caps – Dexterity issues**

Summary

- A thoughtfully implemented medication reconciliation process can reduce the risk of patient harm due to medication discrepancies during care transitions
- Community dialogue is essential for system improvement as is engagement with patients and their care partners

Questions/Discussion

For more information

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