Medication Reconciliation Patient-Centered Approach

Train the trainer program (TOT)

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World Health Organization
Regional Office for the Eastern Mediterranean

WHO Collaborating Center on
Patient Safety Policies and Strategies

المركز السعودي لسلامة المرضى
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Program Objectives

- To describe the importance of Medication Reconciliation process.
- To present the principles and strategies to spread and measure the improvements in Medication Reconciliation.
- To recognize the Physician, pharmacist, and Nurses' role in this process.

Target Audience

- Pharmacists
- Nurses
- Physician

Course outlines

- Outline the key steps for effective and safe Medication Reconciliation.
- Given Patient scenario, accurately identify the appropriate resources and skills needed to
- complete medication reconciliation.
- Develop medication reconciliation competency program for health care professionals
- Share challenges and lessons learned.

Outlines

Module 1: **Medication reconciliation: the 3 w's: what, why and when?**

1. What is Medication Reconciliation?
2. Why is Medication Reconciliation important?
3. When can we conduct Medication Reconciliation ?

Module 2: **Medication Reconciliation: Who's job, is it?**

1. Components of Inpatient Medication Reconciliation
2. Case Scenario
3. Taking a "Best Possible Medication History

Module 3: **Implementing Medication Reconciliation Strategies**

- 1. Strategies for Medication Reconciliation
- 2. Best Practices in Medication Reconciliation
- 3. Implementing the WHO High5s for Medication Reconciliation
- 4. Using Process Improvement Methodology

Module 4: **Medication Reconciliation: Staff Training & Competency Program for Healthcare Professionals**

- 1. Design a process for Medication Reconciliation
- 2. Develop the tools
- 3. Develop the policies and procedures
- 4. Train the staff
- 5. Monitor the process- look for opportunities for improvement.

Acknowledgment

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Medication Reconciliation and Transition Of Care

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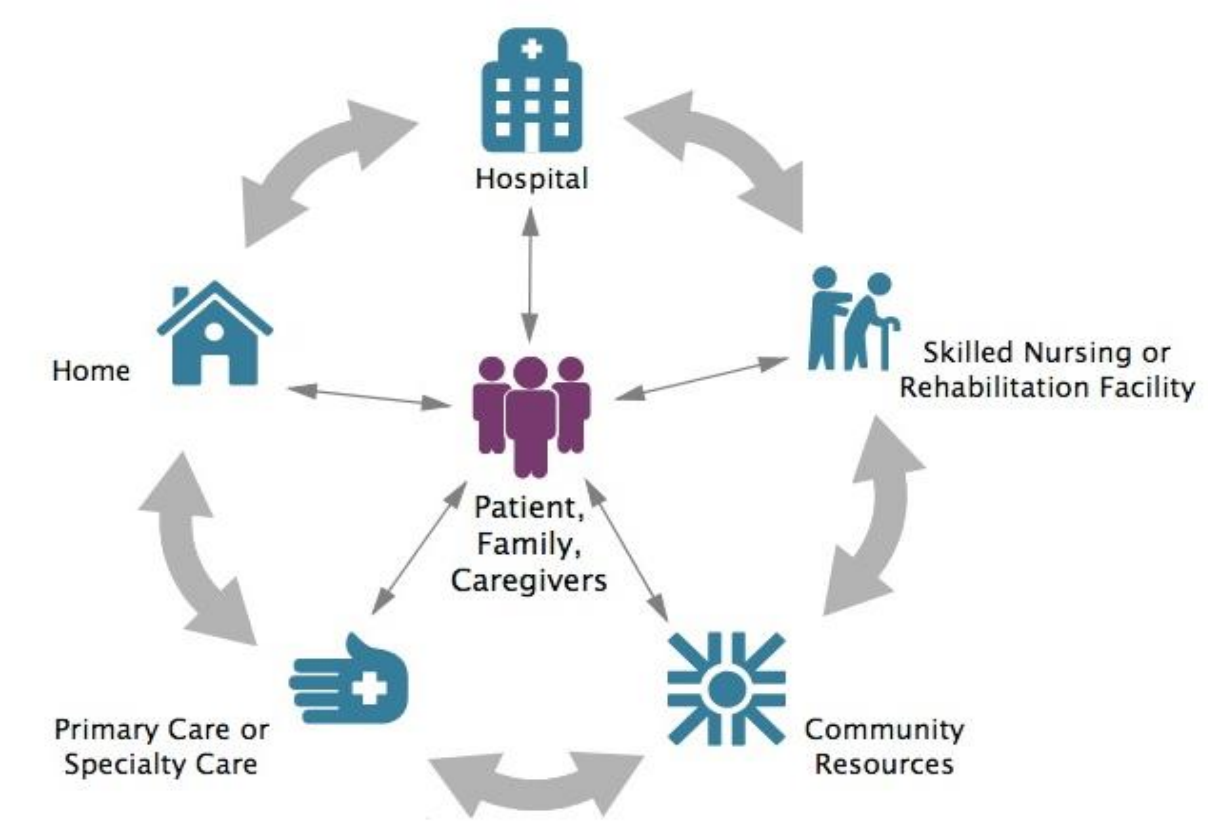
Case scenario

60 year-old female with PMH of HTN, Dyslipidemia, DM type2, HF, and hypothyroidism was admitted to the hospital through the ER.
Home Medication list: Losartan 50 mg PO daily, Spironolactone 25 mg PO daily, Aspirin 81 mg PO daily, Furosemide 80 mg PO BID, Digoxin 0.25 mg PO daily, Carvedilol 6.25 mg PO BID, Pravastatin 40 mg PO daily, Omeprazole 40 mg PO daily, Saxagliptin / Metformin 5 mg / 1000 mg PO daily, **Levothyroxine 25 mcg PO daily**

During admission, patient provided not clear **handwritten list** of home medications which included **"levothyroxine 25 mg..!"** to the admitting intern
Due to busy admission day, the team resident used the list from the patient for the admission order. The resident noted **levothyroxine units "U"** and misread the dose as **250 mcg daily**
Patient continues to receive 250 mcg of levothyroxine daily for the next 12 days
patient develops fevers and hypotension – given concern for **mixed septic and cardiogenic shock**
TSH: 0.153 mIU / L (admission level: 3.95 mIU / L)
Free T4: 3.8 ng / dL (normal: 0.9 - 1.7 ng / dL)
Endocrinology consulted and felt that decompensation consistent with **thyrotoxicosis**
On detailed review with patient, she reported taking 25 mcg levothyroxine instead of 250mcg
Levothyroxine discontinued

What is Transition of Care?

- Transitions of care occur when a patient moves between facilities, sectors and staff members
- Increase the possibility of communication errors, which can lead to serious medication errors



Adverse affect of medication errors on patients

- The Institute of Medicine report estimates there are 1.5 million preventable Adverse Drug Events in the U.S. every year, and the estimated cost is greater than $ 4 billion annually. *(IOM Report: Preventing Medication Errors. 2007)*
- Prescribing errors are a principal source of all medication errors: Incident rates between 19-58% *(IOM Report: Preventing Medication Errors. 2007)*
- Estimates suggest more than 46% of medication errors occur on admission or discharge when patient orders are placed
- Medication discrepancies are more common during key transition points such as hospital admission, intra-hospital transfer, and discharge
- Medication reconciliation is one of the methods of dealing with errors and preventing them

The 3 Ws:
What? Why? When?

Module 1: The 3 Ws: What? Why? When?

1. What is Medication Reconciliation?

2. Why is Medication Reconciliation important?

3. When Can we conduct Medication Reconstruction ?

Medication Reconciliation

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

Medication Reconciliation (MedRec)

It is a formal process comparing:

An accurate and comprehensive medication history from the patient and other sources (called the Best Possible Medication History)

VERSUS

Medications prescribed at Admission, Transfer and Discharge

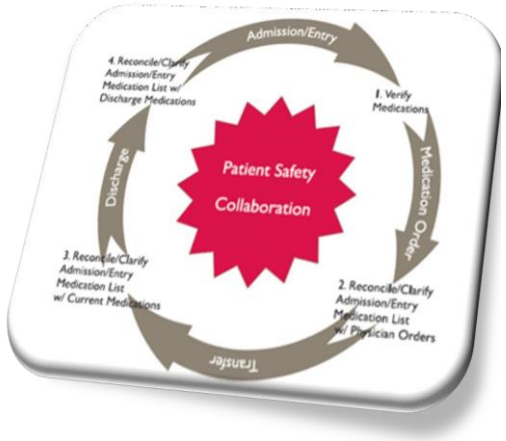
Discrepancies are identified and brought to the attention of the healthcare team.

Medication Reconciliation

- As defined by the Institute for Healthcare Improvement (IHI):
  - Medication reconciliation is a process of identifying the most accurate list of all medications a patient is taking—including name, dosage, frequency, and route—and using this list to provide correct medications for patients anywhere within the health care system.

  - *The process whereby a prescriber or pharmacist considers previous medication therapy while formulating new orders that will be initiated following a transition in care*

Medication reconciliation process will include



- **Active decision about medication requirements during a transition of care after reviewing home medications for possible drug-drug interactions, drug duplications, dosing errors, or omissions**
  - Adding a new medication
  - Stopping an existing medication
  - Changing an existing medication (dose and/or frequency)
- **Medication reconciliation should be considered at major transitions of patient care**
  - Admission to hospital/other facility
  - Transfer to a different level of care in same facility
  - Discharge from hospital/other facility
  - Ambulatory facility/ED visit

Implementation of a standardized medication reconciliation process will help to:

- ↓ Number of unintended medication discrepancies
- ↓ Potential medication errors
- ↑ Patient safety

(Pippins et al., 2008; Poon et al., 2006; Sinvani et al., 2013; Turchin, Gandhi, Coley, Shubina, & Broverman, 2007; Ziaeian, Araujo, Van Ness, & Horwitz, 2012).

Why MedRec is Important?

- Most common type of medical errors during hospitalization is medication errors
- Most frequently cited category of root causes for serious adverse event during hospitalization is ineffective communication
- Most vulnerable parts of a process:
  - Links between the steps (the “hand-overs”)

Why MedRec is Important?

- Identify and resolve any medication discrepancies that can causes medication errors
  - Around 50% of medication errors occur during the transition of care
  - Around 30% of these error has the potential to cause patient harm
- Improve communications between and among clinicians, patients, and informal caregivers
- Ensuring accurate, current and comprehensive medication information follows patients on transfer and discharge

RESEARCH ARTICLE

The impact of pharmacist-led medication reconciliation during admission at tertiary care hospital

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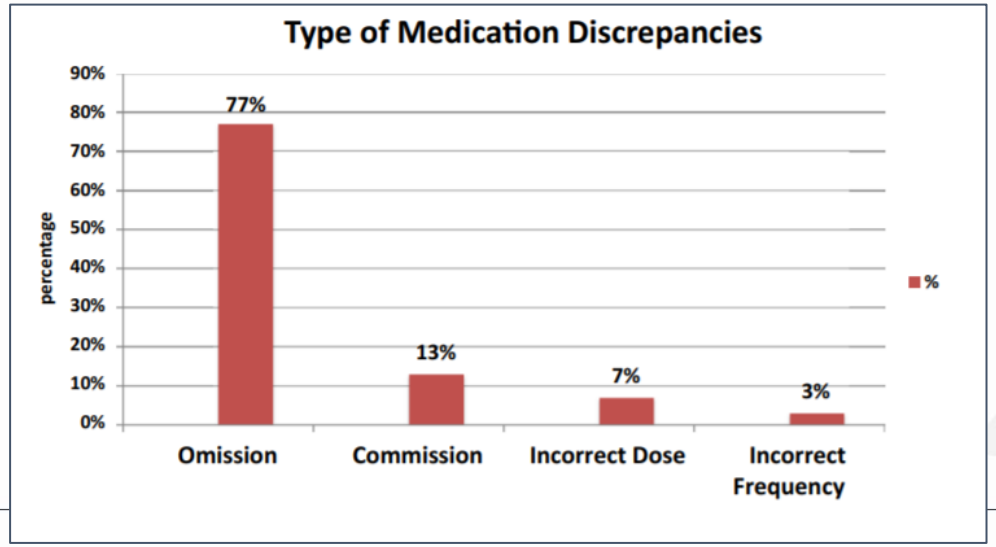
Frequency of medication discrepancies

One or more unintended medication discrepancies were noted in 48.3% of patients (138/286). Moreover, 35.3% of patients (101) had at least four unintended medication discrepancies, 8.4% (24 patients) had from five to seven unintended medication discrepancies, and 4.2% (12 patients) had eight to ten unintended medication discrepancies.



Accreditation body Requirements

CBAHI
المركز السعودي للاعتماد المنشآت الصحية
Saudi Central Board for Accreditation of Healthcare Institutions

❖ **MM.20**

Safe prescribing, ordering, and transcribing of medication orders are guided by a clear policy and procedure.

❖ **MM.20.3**

Medication reconciliation is conducted at the time of admission and discharge.

Requirements at Admission

❖ MMU.4

Prescribing, ordering and transcribing are guided by policies and procedures.

❖ MEs for MMU.4

5. Patient records contain a list of current medications taken prior to admission and this information is made available to the pharmacy and the patient's care providers.

6. Initial medication orders are compared to the list of medications taken prior to admission, according to the organization's established process.

Requirements at Discharge

❖ ACC.4.3

The complete discharge summary is prepared for all patients

❖ ME's

4. The discharge summary contains significant medications, including discharge medications

❖ ACC.4.3.1

Patient education and follow up instructions are given in a form and language the patient can understand

❖ ME's

1. Follow up instructions are provided in writing and in a form and language the patient can understand

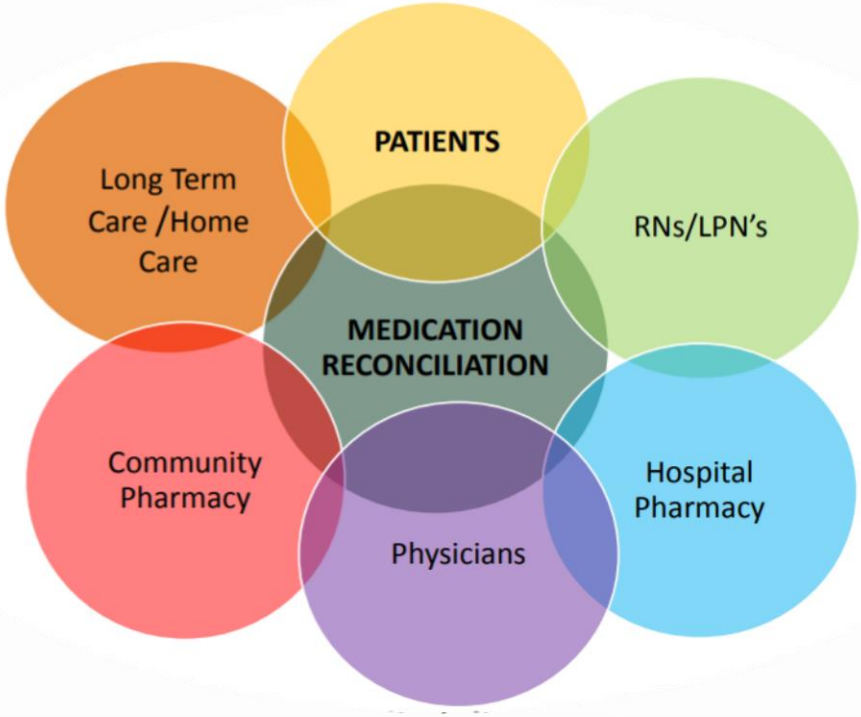
Module 2:

1.Components of Inpatient Medication Reconciliation

2. Case Scenario

3. Taking a “Best Possible Medication History

Who is Responsible for MedRec?

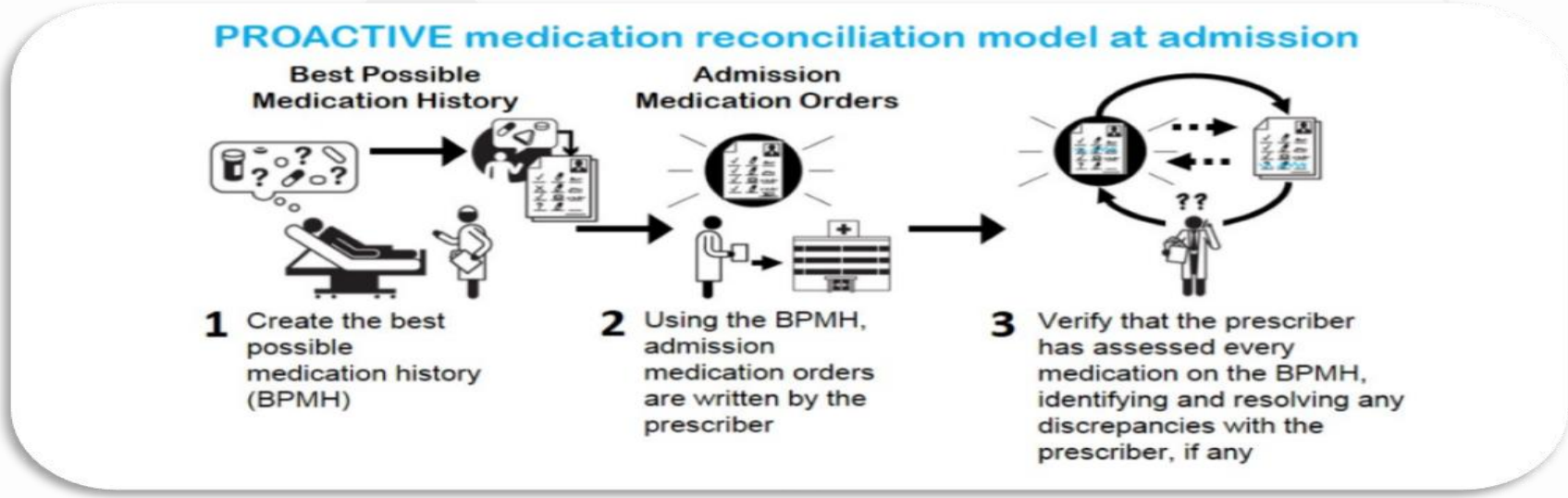


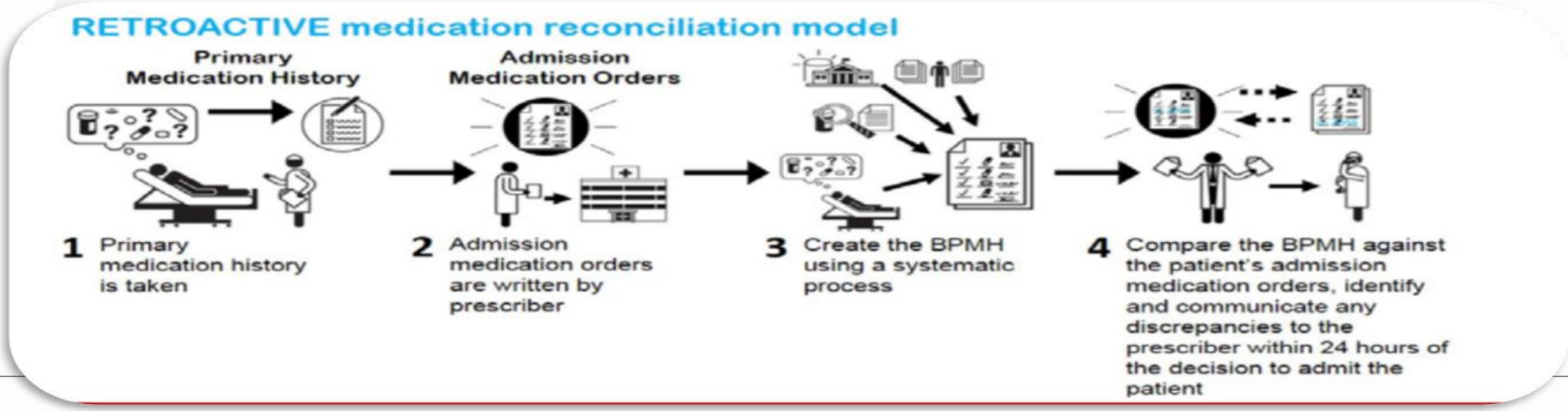
- Performing MedRec involves **multidisciplinaries** working together as a **TEAM** for the patient, as they move through the transitions of care.

Multidisciplinary approach

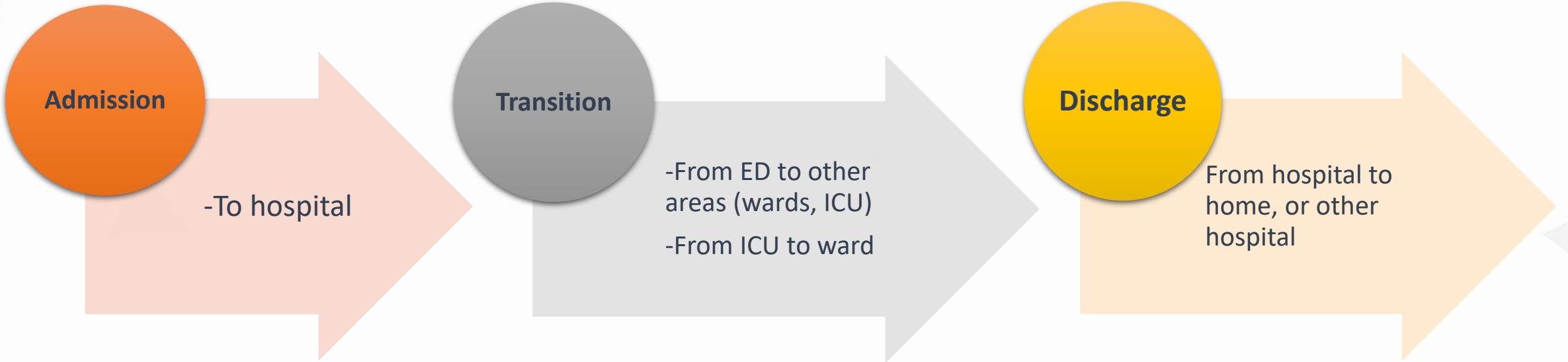
- **Admission**
  - Admitting physician responsible for documenting and comparing home medication list and deciding what medicines to continue
  - Nurse and pharmacist review list
- **Transfer**
  - Physicians on transferring and accepting teams review medications, dosages, and when administered
- **Discharge**
  - Physician & Pharmacist compare outpatient list and inpatient list
    - Is any medicine missing?
    - Is it intentional?
  - Review medicine instructions with patient

How MedRec can be done ?





When MedRec should be done ?



Interviewing the Patient

Best Possible Medication History (BPMH)

Institute of Safe Medication Practice Canada, 2007

BPMH:

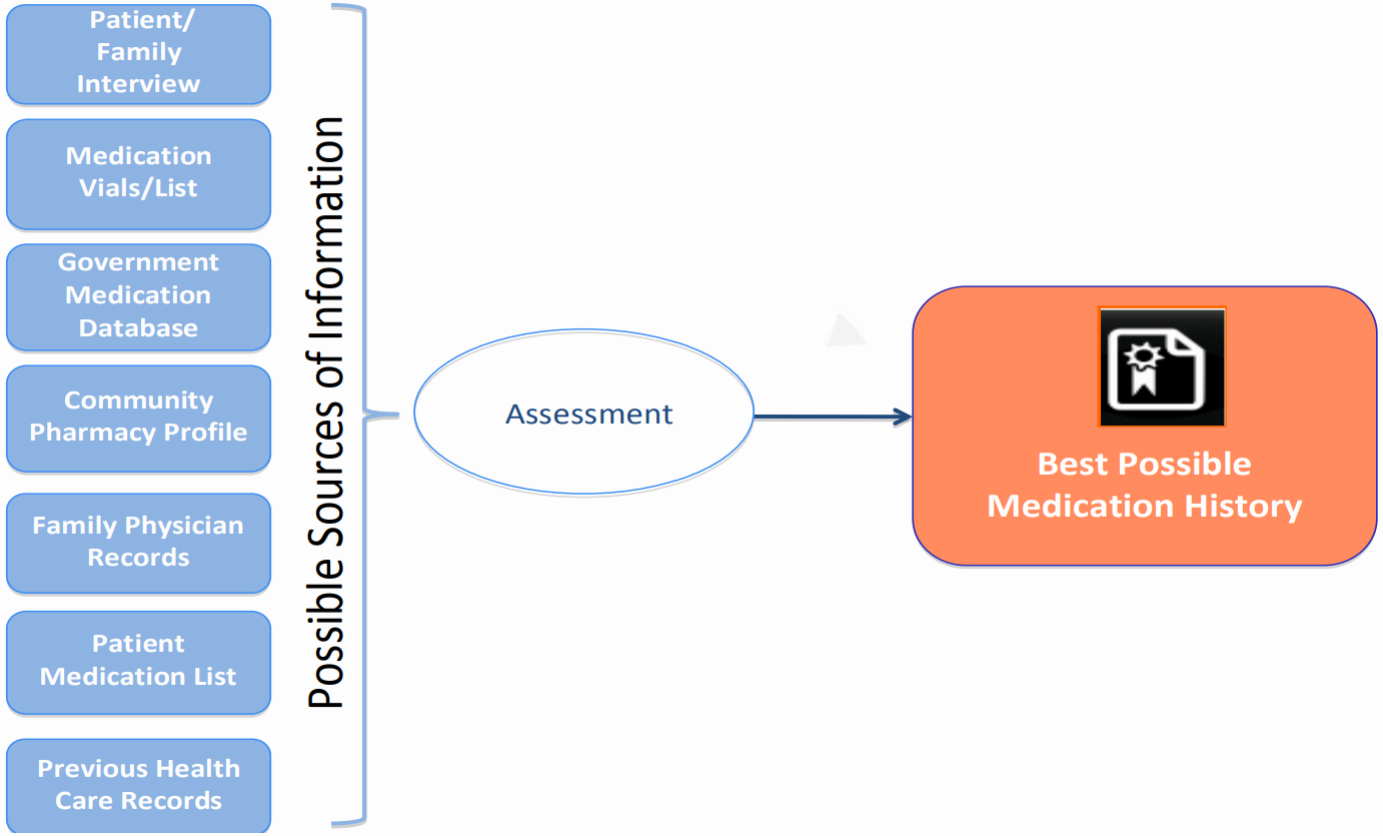
An accurate and complete medication history list using

- ✓ a systematic process of interviewing the patient and caregiver
- ✓ review at least 2 reliable sources of information to obtain and verify all patient's medications

(prescribed and non-prescribed)

SOURCES OF MEDICINES INFORMATION

Try to use at least two sources of information when possible



BPMH versus a Primary Medication History

Primary Medication History is often:	BPMH is:
Created quickly to capture a list of medications (e.g. at triage)	Created using a systematic process and is a more thorough medication history (e.g. at admission)
Created without using at least one other reliable source of information	Created using at least one other reliable source of information including a patient interview, electronic medication dispensing record, medication vials, referring healthcare facilities MAR, community pharmacy records
Missing necessary and/or essential elements of medication information. This can be unsafe to use when creating medication orders	A **complete and accurate** list of medications that reflects medication use prior to admission which can be used to safely create (and later re-assess) medication orders

TAKING A "BEST POSSIBLE MEDICATION HISTORY"

- **Time-saving tips:**
  - Start with easily accessible sources
    - Outpatient medication list
    - Recent hospital discharge orders
  - If patients use a list or have pill bottles, seem reliable, and data are not dissimilar from the other sources (or the differences can be explained), you can be done
  - If patients are not sure, or are relying on memory only, or cannot "clean up" the discrepancies among lists, then go further
    - Call family
  - If still not clear, have family bring in pill bottles from home

TAKING A "BEST POSSIBLE MEDICATION HISTORY"

- **Ask about adherence**
  - When did you take the last dose of that medication?
  - Tell me about any problems that you've had taking these medications as prescribed?
  - Many patients have difficulty taking their medications exactly as they should every day. In the last week, how many days have your missed a dose of your

Who’s Job is it?

WHO CAN DO THE INTERVIEW FOR MEDREC ?

- Physicians
- Pharmacists
- Nurses
- Pharmacy Technician
- Pharmacy interns

- The Key : you need an excellent communicator

PHARMACISTS AND MEDREC INTERVIEW

- Pharmacists have distinct knowledge, skills, and position in the medication use process to facilitate and implement effective medication reconciliation tools for patient and interdisciplinary use.
- According to studies comparing: Pharmacist- versus other professions who initiated admission medication reconciliation:
  - Pharmacists documented significantly more admission medication changes compared with physicians
  - Pharmacists routinely compile more accurate medication histories than physicians or nurses.
- Often best to target "high-risk" patients—those most at risk of an adverse drug event during transitions of care

A FORMAL MEDREC PROCESS (4 STEPS)

1	Obtain	• Collecting information to compile a list of patient current medications (dose, route, frequency)
2	Verify	• Confirming the accuracy of information to achieve a (BPMH), and use at least 2 reliable sources
3	Reconciliation	• Comparing BPMH with new prescribed medicines at every transfer of care ---> to identify and resolve discrepancies
4	Communicate & Document	• Supplying accurate list of medications to the next care provider and patient on discharge

Obtain

1. COLLECT INFORMATION

- Gather an accurate as possible medication history list → a list of patient current medications including (dose, route, frequency)

Best Possible Medication History Interview Guide

Introduction

- Introduce self and profession.
- I would like to take some time to review the medications you take at home.
- I have a list of medications from your chart/file and want to make sure it is accurate and up to date.
- Would it be possible to discuss your medications with you (or a family member) at this time?
  - Is this a convenient time for you? Do you have a family member who knows your medications that you think should join us? How can we contact them?

Medication Allergies

- Are you allergic to any medications? If yes, what happens when you take (allergy medication name)?

Information Gathering

- Do you have your medication list or pill bottles (vials) with you?
- *Use show and tell technique when they have brought the medication vials with them*
  - How do you take (medication name)?
  - How often or When do you take (medication name)?
- *Collect information about dose, route and frequency for each drug. If the patient is taking a medication differently than prescribed, record what the patient is actually taking and note the discrepancy.*
- Are there any prescription medications you (or your physician) have recently stopped or changed?
- What was the reason for this change?

Community Pharmacy

- What is the name and location of the pharmacy you normally go to? *(Anticipate more than one).*
  - May we call your pharmacy to clarify your medications if needed?

Over the Counter (OTC) Medications

- Do you take any medications that you buy without a doctor's prescription? *(Give examples, i.e., Aspirin).* If yes, how do you take (OTC medication name)?

Vitamins/Minerals/Supplements

- Do you take any vitamins (e.g. multivitamin)? If yes, how do you take (vitamins name(s))?
- Do you take any minerals (e.g. calcium, iron)? If yes, how do you take (minerals name(s))?
- Do you use any supplements (e.g. glucosamine, St. John's Wort)? If yes, how do you take (supplements name(s))?

Eye/Ear/Nose Drops

- Do you use any eye drops? If yes, what are the names? How many drops do you use? How often? In which eye?
- Do you use ear drops? If yes, what are the names? How many drops do you use? How often? In which ear?
- Do you use nose drops/nose sprays? If yes, what are the names? How do you use them? How often?

Inhalers/Patches/Creams/Ointments/Injectables/Samples

- Do you use inhalers?, medicated patches?, medicated creams or ointments?, injectable medications (e.g. insulin)? For each, if yes, how do you take (medication name)? *Include name, strength, how often.*
- Did your doctor give you any medication samples to try in the last few months? If yes, what are the names?

Antibiotics

- Have you used any antibiotics in the past 3 months? If so, what are they?

Closing

This concludes our interview. Thank you for your time. Do you have any questions?

If you remember anything after our discussion please contact me to update the information.

Note: *Medical and Social History, if not specifically described in the chart/file, may need to be clarified with patient.*

Adapted from University Health Network

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Prevent Adverse Drug Events through Medication Reconciliation

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Top 10 Practical Tips

How to Obtain an Efficient, Comprehensive and Accurate Best Possible Medication History (BPMH)

1. **Be proactive.** Gather as much information as possible prior to seeing the patient. Include primary medication histories, provincial database information, and medications vials/ lists.
2. **Prompt questions about non-prescription categories:** over the counter drugs, vitamins, recreational drugs, herbal/traditional remedies.
3. **Prompt questions about unique dosage forms:** eye drops, inhalers, patches, and sprays.
4. **Don't assume patients are taking medications according to prescription vials** (ask about recent changes initiated by either the patient or the prescriber).
5. **Use open-ended questions:** ("Tell me how you take this medication?").
6. **Use medical conditions as a trigger** to prompt consideration of appropriate common medications.
7. **Consider patient adherence with prescribed regimens** ("Has the medication been recently filled?").
8. **Verify accuracy:** validate with at least two sources of information.
9. **Obtain community pharmacy contact information:** anticipate and inquire about multiple pharmacies.
10. **Use a BPMH trigger sheet** (or a systematic process / interview guide). Include efficient order/optimal phrasing of questions, and prompts for commonly missed medications.

2. Confirm the Accuracy of the History

Verify

- Use at least two reliable sources of information to obtain and verify the medication history

- Achieve a Best Possible Medication History (BPMH)

Sources Of Medicines Information

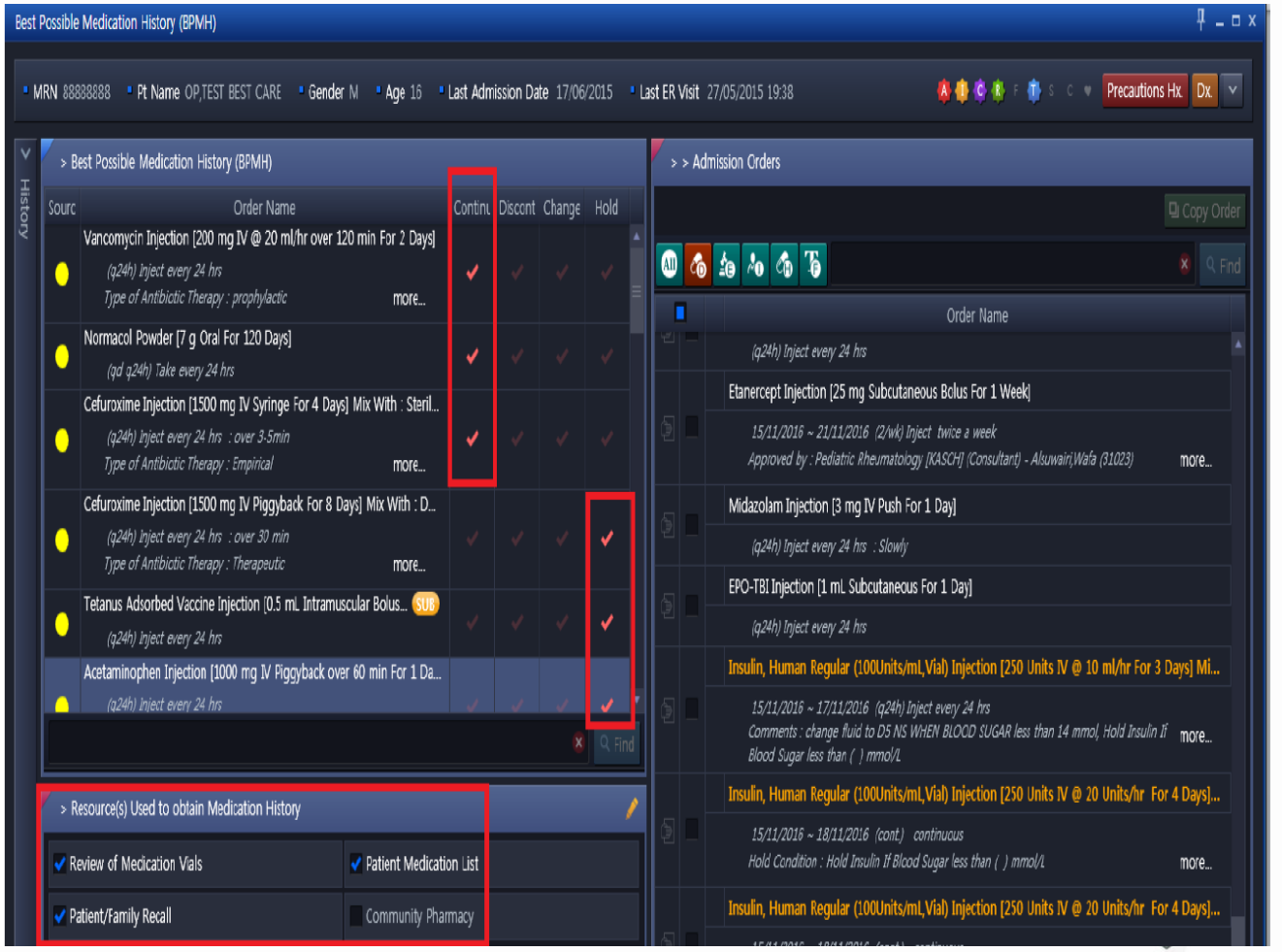
- Try to use at least two sources of information when possible and explore discrepancies between them
  - Patient (via interview)
  - Patient-owned medication lists
  - Family members and other caregivers
  - Pill bottles
  - Pharmacy(ies) where patient fills prescriptions
  - Medication lists and/or notes from outpatient providers
  - Discharge medication orders from recent hospitalizations
  - Transfer orders from other facilities

Reconciliation

3. Compare the BPMH with Prescribed Medicines

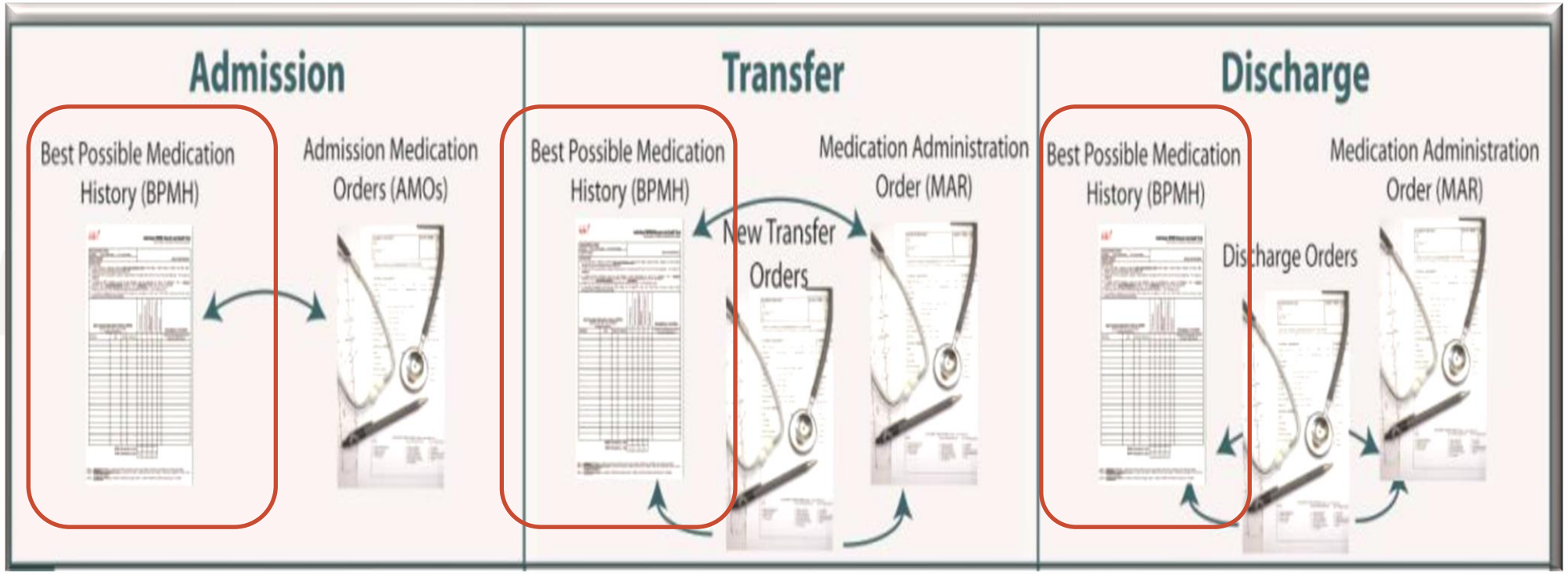
Use the BPMH when determining the medications to be prescribed on admission:-

- Decide and document the plan for each medicine e.g. (continue, discontinue change, withhold)



Reconciliation

Compare BPMH and current medications at every transfer of care (Admission, Transfer, Discharge)



Communicate & Document

4. Provide accurate medication information

- **Between units, hospitals and at discharge with the following considerations:**
  - Are all medications prescribed are still needed?
  - Do any pre-admission medicines withheld/changed need to be recommenced/changed back?
  - Are the changes, including reasons clearly documented?
  - Is the list complete and clear for your patient, your team and the next care provider?

Identifying and Resolving Discrepancies

Discrepancies found between admission medication orders and the BPMH can be divided into three main categories:

- Documented Intentional The prescriber has made an intentional choice to add, change or discontinue a medication based on the patient's plan of care and their choice is clearly documented.

- Undocumented intentional The prescriber has made an intentional choice to add, change or discontinue a medication but this choice is not clearly documented which need clarification. Intentional discrepancies include new medication orders prescribed for the first time based on the patient's diagnosis or clinical status.

- Unintentional

Examples of Documented Intentional

- A patient is admitted with pneumonia and started on oral antibiotic which he/she was not on at home. This is clearly documented on the chart and is considered as an intentional discrepancy.
- A patient was on an herbal supplement and this supplement was discontinued by the prescriber due to a drug-drug interaction with a blood thinner and this was clearly documented.

Examples of Undocumented Intentional

- A *patient was on an antihypertensive medication at home, but the patient's surgeon did not order the anti-hypertensive medication upon admission due to concerns about preoperative hypotension; however, the reason for not ordering the antihypertensive medication was not documented in the medication record.*

An unintentional discrepancy

- The prescriber unintentionally changed, added or omitted a medication the patient was taking prior to admission.

- **Unintentional discrepancies have the potential to become medication errors that may lead to adverse events.**

- Unintentional discrepancies fall into 2 main categories:
  - **Omission**
  - **Commission**

Type of unintentional discrepancy	Description	Example
Omission	Patient was not ordered a pre-admission medication. There is no clinical explanation or documentation for the omission.	A patient was on aspirin at home but it was not ordered on admission. When the clinician clarifies with the prescriber, it is evident that the prescriber was not aware that the patient was on this medication. A clarification order was written to restart the patient's aspirin 100 mg po daily.
Commission	Incorrect addition of a medication not part of the patient's pre-admission medication and there is no clinical explanation or documentation for adding the medication to the patient's therapy.	A patient was on a blood pressure medication at home but it was discontinued by the family prescriber 2 months ago. The blood pressure pill was brought in with the patient's other medications and inadvertently ordered upon admission. Clarification with the prescriber reveals that the prescriber was not aware of the recent discontinuation of the medication and an order was written to discontinue the medication.

The Intent and Value of Medication Reconciliation is in Having "An Accurate Medication List."


MEDICATION RECONCILIATION
THE WRONG WAY


MEDICATION RECONCILIATION
THE RIGHT WAY

Case Example: Medication Reconciliation on Admission

- A 40 years-old patient presented with complaints of chronic left upper arm pain and swelling. Patient's past medical history included: end-stage renal disease (ESRD), multiple deep vein thromboses (DVTs), hypertension (HTN), bone fractures secondary to renal bone disease, anemia, and hypothyroidism.
- On admission, the physician interviewed the patient to obtain a history and physical.
- The patient had brought in prescription bottles to the hospital and the physician recorded all the medications and doses.
- The physician then placed the admitting medication orders.

- Following the physician-patient interview, a pharmacist interviewed the patient to obtain a medication history.
- The pharmacist also referenced the patient’s medication bottles previously used by the physician.

Physician H&P	Admitting Orders	Pharmacist Interview
Prednisone 1mg Daily	***Prednisone 1mg Daily***	***Prednisone 2mg Daily***
Synthroid 0.025mg Daily	***Synthroid 0.025mg Daily***	***Synthroid 0.1mg Daily***
Sirolimus 6mg Daily	***Sirolimus 5mg Daily***	***Sirolimus 6mg Daily***
Warfarin 7.5/5 Daily, alternating schedule	Hold Warfarin	***Warfarin 7.5mg MWF, 5mg Tu/Th/S/S***
Nifedipine XL 60mg Daily	***Nifedipine XL 60mg Daily***	***Nifedipine XL 60 mg BID***
Enalapril 10mg Daily	Enalapril 10mg Daily	Enalapril 10mg PO Daily
Furosemide 40mg Daily	Furosemide 40mg Daily	Furosemide 40mg Daily
Calcitriol 0.5mcg Daily	***Calcitriol 0.5mcg Daily***	***Calcitriol 1mcg in AM and 0.5mcg in PM***

Case Discussion

- This case highlights the importance of obtaining a complete and accurate history on admission to the hospital and reconciling the home medication list with the admission orders.
- When a patient is admitted to the hospital, he or she is often overwhelmed with everything that is going on.
- Engaging the patient in a dialogue about their medication regimen may ensure a more comprehensive medication history than asking close-ended questions.

- If a patient brings in prescription bottles and/or a medication list, we have a good start to obtaining a complete and accurate medication history but it should not stop there.
- It is very important to go over the prescription bottles and/or medication list with the patient and/or patient's family.
- It is essential to remember that the bottles or medication list may not be updated to reflect how the patient is currently taking their medications.
- For example in that case , the patient's medication bottle read Nifedipine XL 60mg daily which the physician documented in the H&P and ordered on admission.

- When the pharmacist interviewed the patient, he specifically asked the patient if they were still on that same dose of Nifedipine XL and the patient responded that the dose had recently been increased to Nifedipine XL 60mg twice daily.
- A good rule of thumb is that information about a patient's medications found in previous medical records, on prescription bottles or on a patient's own medication list are a great place to start when compiling a medication history but
- you must always verify with the patient or the patient's family that the information is up to date before making any assumptions about what the patient was taking prior to admission.

What have we learned from this case ?

- Obtaining a complete and accurate medication history on admission is an important step in making sure patient's home medications are documented and ordered appropriately
- There can be multiple information sources to obtain a patient's medication history but it is imperative that the information is only used as a starting point and does not replace a conversation with the patient and/or patient's family to obtain the most up to date medication information
- After obtaining the complete and accurate medication history, it is important to compare that information to current inpatient orders to verify that all medications were ordered appropriately

Challenges in Medication Reconciliation

- Often, no clear owner of this process
- Time constraints
- Difficult to identify accurate sources of information
- Poor health literacy
- Patients don’t know or can’t tell us what they are taking.
- Patient does not want to admit what they have been taking
- Labels on bottles are often outdated or incorrect
- Patient may take medication differently than prescribed
- Medication lists are often inaccurate

Patient Education

- Patients should participate in the medication reconciliation process
- Encourage patients to keep an up-to-date list of medications and understand why they take each
- During the discharge process, medical staff should ensure that patients are educated about any changes in medication regimen

Implementing Medication Reconciliation Strategies

Module 3: Implementing Medication Reconciliation Strategies

1. Strategies for Medication Reconciliation
2. Best Practices in Medication Reconciliation
3. Implementing the WHO High5s for Medication Reconciliation
4. Using Process Improvement Methodology

1. Strategies for Reconciliation

- It is important to understand the existing processes that may interface with medication reconciliation in the organization.
- There should be uniformity in:
  - basic steps in the process and their interdependencies
  - minimum documentation and measurement requirements
- It may be possible to allow flexibility in:
  - assignment of tasks to specific professional disciplines
  - format of the documentation and quality improvement assessment

2. Best Practices in Medication Reconciliation

Given the number of disciplines involved in the medication-use process including participation by physicians, nurses, and pharmacists

Process must be clearly defined by a multi-disciplinary team and responsibilities for each component of the process assigned to the parties involved

2. Best Practices in Medication Reconciliation (cont.)

No single universal process will meet needs of all patients entering a hospital.

- Limited number of different processes will likely need to be developed based on patient population and point of entry into hospital

Successful implementation will require significant training, education, and support from clinical leaders.

- Willingness to engage in continuous improvement and monitoring for compliance are likely success factors

2. Best Practices in Medication Reconciliation (cont.)

- Medication reconciliation widely embraced as an important patient safety strategy worldwide
- The **World Health Organization** prioritized it as one of its top five patient safety goals

Joint Commission Summary of Safe Practice Recommendations for Reconciling Medications at Admission

- **Collect complete and accurate pre-admission medication lists**
  - Collect a complete list of current medications (including dose and frequency) for each patient on admission.
  - Validate the pre-admission medication list with the patient (whenever possible).
  - Assign primary responsibility for collecting the preadmission list to someone with sufficient expertise, within a context of **shared accountability (the ordering prescriber, nurse, and pharmacist must work together to achieve accuracy).**

Joint Commission Summary of Safe Practice Recommendations for Reconciling Medications at Admission

- **Write accurate admission orders**
  - Use the pre-admission medication list when writing orders.
  - Place the reconciling form in a consistent, highly visible location within the patient chart (easily accessible by clinicians writing orders)
- **Reconcile all variances**
  - Assign responsibility for identifying and reconciling variances between the pre-admission medication list and new orders to someone with sufficient expertise.
  - Reconcile patient medications **within specified time frames**

Joint Commission Summary of Safe Practice Recommendations for Reconciling Medications at Admission

- **Provide continuing support and maintenance**
  - **Adopt a standardized form** to use for collecting the pre-admission medication list and reconciling the variances (includes both electronic and paper-based forms).
  - Develop clear policies and procedures for each step in the reconciling process.
  - **Provide access to drug information and pharmacist advice at each step in the reconciling process.**

Joint Commission Summary of Safe Practice Recommendations for Reconciling Medications at Admission

- Improve access to complete medication lists at admission
- Provide orientation and ongoing education on procedures for reconciling medications to all healthcare providers.
- Provide feedback and ongoing monitoring (within context of non-punitive learning from mistakes/near misses).

3. Implementing the WHO High5s for Medication Reconciliation

- An up-to-date and accurate patient medication list is essential to ensure safe prescribing in any setting
- A formal structured process for reconciling medications should be in place cross all interfaces of care
- Medication reconciliation on admission is the foundation for reconciliation throughout the episode of care
- Medication reconciliation is integrated into existing processes for medication management and patient flow
- The process of medication reconciliation is one of shared accountability with staff aware of their roles & responsibilities
- Patients and families are involved in medication reconciliation

4. Using Process Improvement Methodology

Project Work Plan

A 

Develop a task list

B 

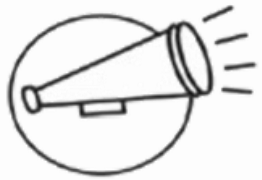
Identify milestones and target dates

C 

Identify dependencies and time frames

D 

Identify deliverables and due dates

E 

Develop communication plan

F 

Assign resources

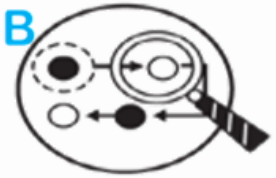
4. Using Process Improvement Methodology, cont.

Risk Assessment of the proposed process

A

Describe the process

B



Identify potential process breakdowns

C

Identify effects of breakdowns on patients

D

Prioritize breakdowns / failures

E

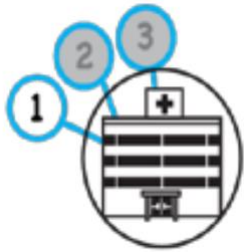
Determine why

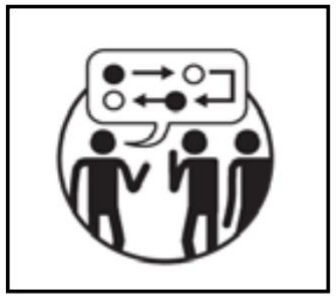
F

Implement controls to minimize risk

4. Using Process Improvement Methodology, cont.

Pilot test of the medication reconciliation process





ENGAGE REPs TO PARTICIPATE IN THE TEST DESIGN

TRAIN PARTICIPANT STAFF

IMPLEMENT AND MEASURE

ANALYZE PILOT TEST DATA

DETERMINE THE SEQUENCE AND TIMING OF SPREAD

Medication Reconciliation: Staff Training & Competency Program for Healthcare Professionals

World Health Organization
Regional Office for the Eastern Mediterranean

WHO Collaborating Center on
Patient Safety Policies and Strategies

المركز السعودي لسلامة المرضى
SAUDI PATIENT SAFETY CENTER

Module 4:

Medication Reconciliation: Staff Training & Competency Program for Healthcare Professionals

1. Design a process for Medication Reconciliation
2. Develop the tools
3. Develop the policies and procedures
4. Train the staff
5. Monitor the process- look for opportunities for improvement.

1. Design a process for Medication Reconciliation

1. Identify an Oversight Group for the project (governing body or senior leadership group).
2. Assign a senior administrative leader to provide direct oversight of the implementation activities, assignment of staff, allocation of time for staff to do the work, and allocation of other resources. The senior leader should understand that there are resource implications to implementing the MedRec SOP. This individual should have direct accountability for outcomes related to medication reconciliation.

OVERSITE OF THE IMPLEMENTATION

A

Identification of the oversight group

B

Assign a leader for direct oversight

C

Assign professional discipline teams

D

Assign a facilitator

1. Design a process for Medication Reconciliation, Cont,

3. Assign representatives of the professional disciplines involved in medication management—at a minimum, physicians, nurses, and pharmacists—to guide the design, testing, and roll-out of the medication reconciliation process and to serve as role models and “champions” of the new process for their respective disciplines.
4. Assign a facilitator—a person with knowledge of the medication management process and quality improvement methods and with project management skills—to develop and manage the project work plan.

OVERSITE OF THE IMPLEMENTATION

A

Identification of the oversight group

B

Assign a leader for direct oversight

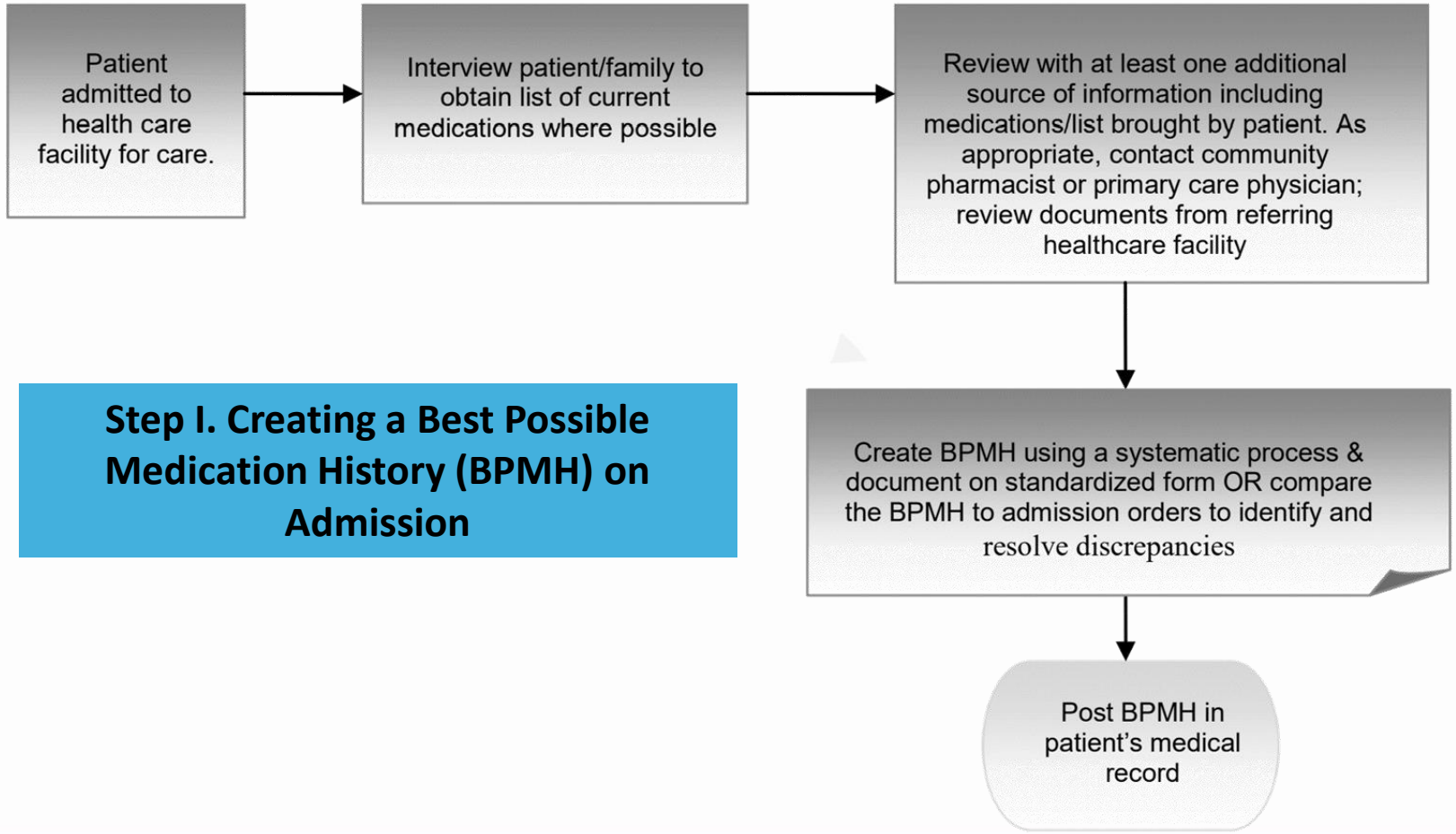
C

Assign professional discipline teams

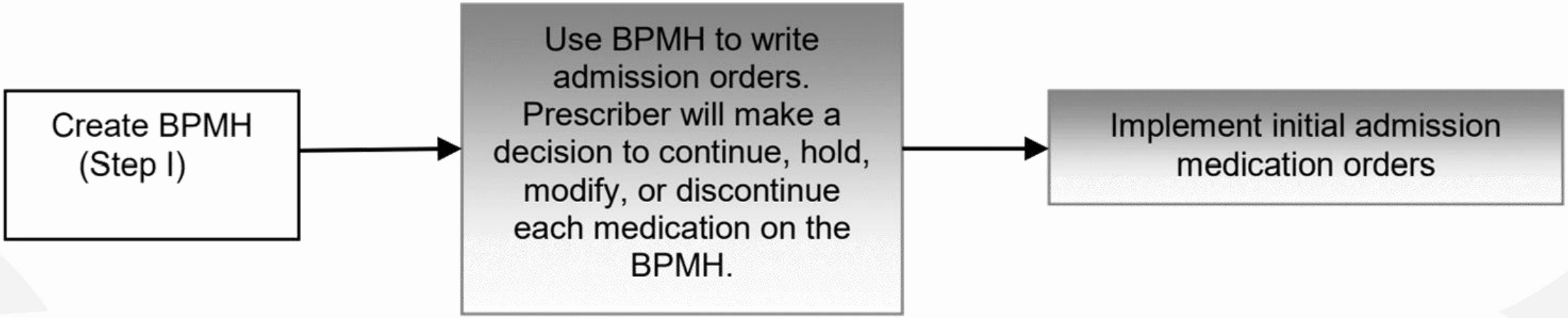
D

Assign a facilitator

1. Design a process for Medication Reconciliation, Cont,



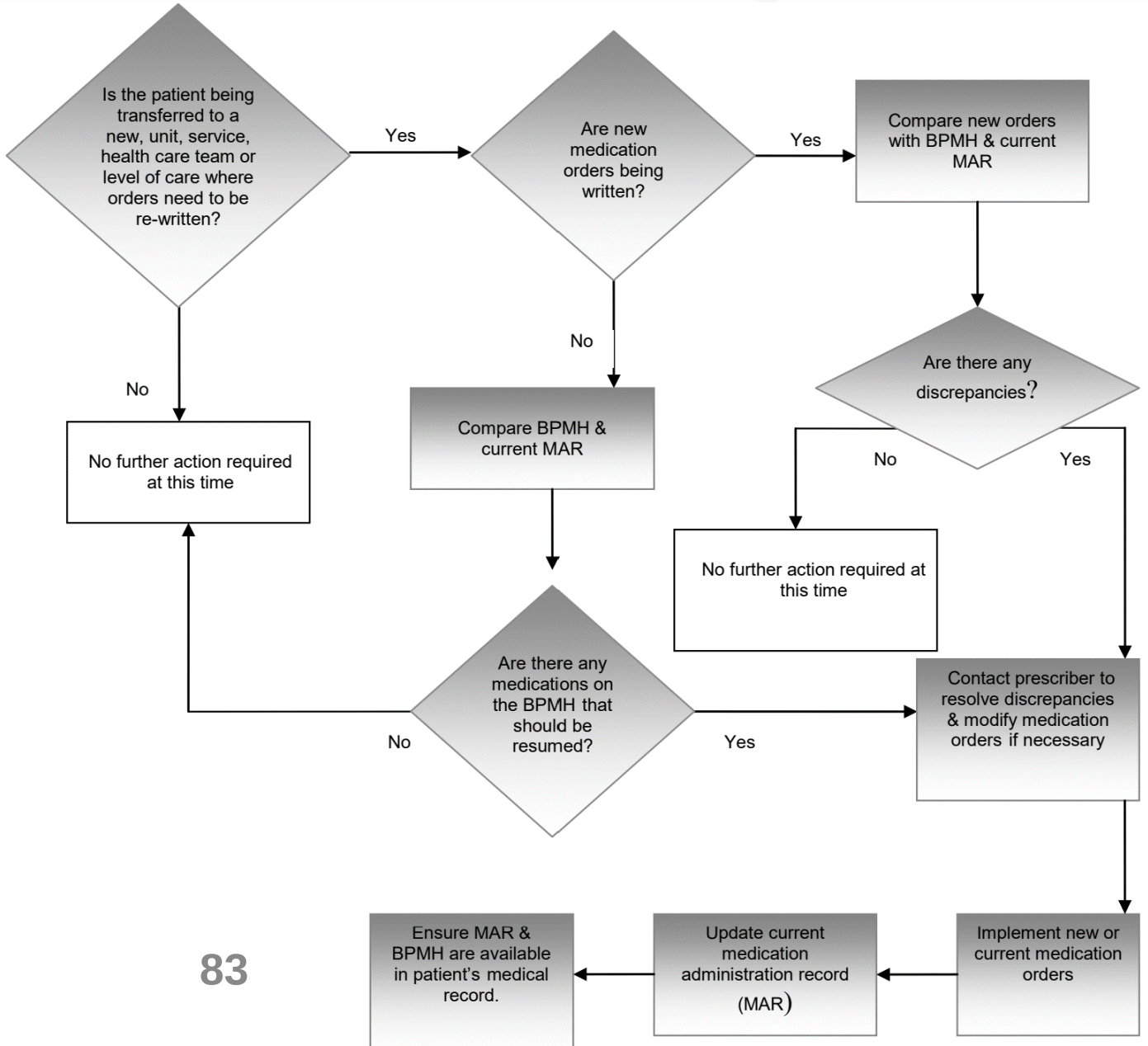
1. Design a process for Medication Reconciliation, Cont,



Step II. Medication Reconciliation at Admission (Proactive Model)

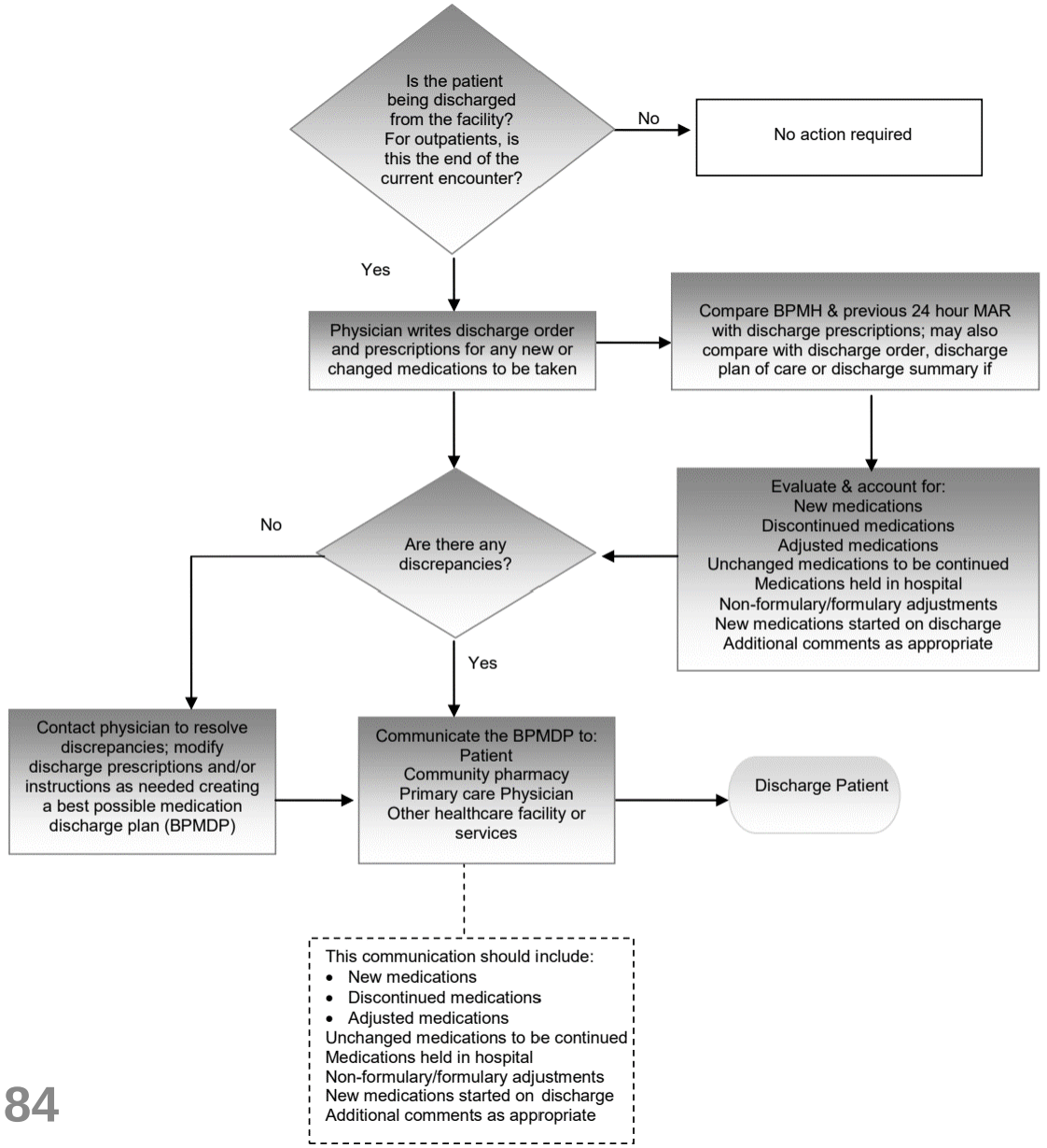
1. Design a process for Medication Reconciliation, Cont,

Step III. Medication Reconciliation at Internal Transfer

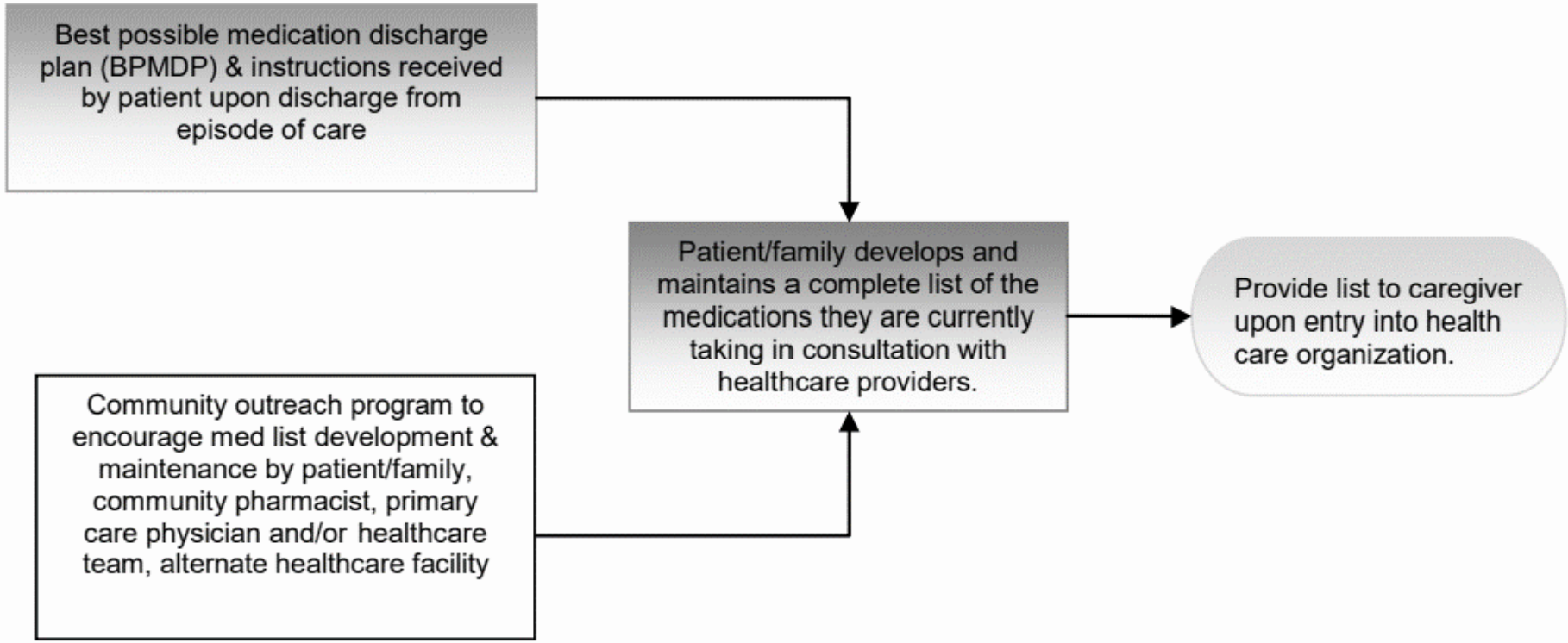


1. Design a process for Medication Reconciliation, Cont,

Step IV. Medication Reconciliation at Discharge

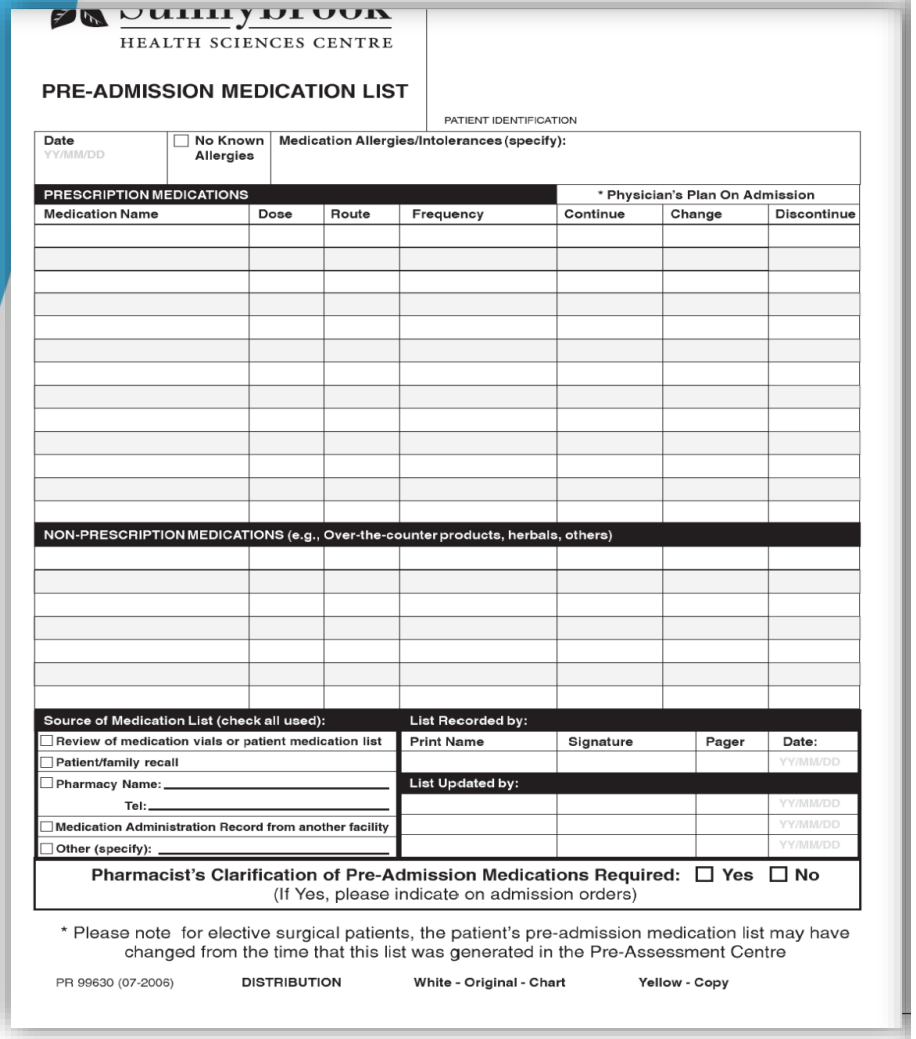


1. Design a process for Medication Reconciliation, Cont,



Step V. Patient Involvement Post-Discharge & Prior to Next Episode of Care

2. Develop the tools



HEALTH SCIENCES CENTRE

PRE-ADMISSION MEDICATION LIST

PATIENT IDENTIFICATION

Date YY/MM/DD	☐ No Known Allergies	Medication Allergies/Intolerances (specify):

PRESCRIPTION MEDICATIONS — * Physician's Plan On Admission

Medication Name	Dose	Route	Frequency	Continue	Change	Discontinue

NON-PRESCRIPTION MEDICATIONS (e.g., Over-the-counter products, herbals, others)

Source of Medication List (check all used):	List Recorded by:			
☐ Review of medication vials or patient medication list	Print Name	Signature	Pager	Date:
☐ Patient/family recall				YY/MM/DD
☐ Pharmacy Name: _____ Tel: _____	List Updated by:			
				YY/MM/DD
☐ Medication Administration Record from another facility				YY/MM/DD
☐ Other (specify): _____				YY/MM/DD

Pharmacist's Clarification of Pre-Admission Medications Required: ☐ Yes ☐ No
(If Yes, please indicate on admission orders)

* Please note for elective surgical patients, the patient's pre-admission medication list may have changed from the time that this list was generated in the Pre-Assessment Centre

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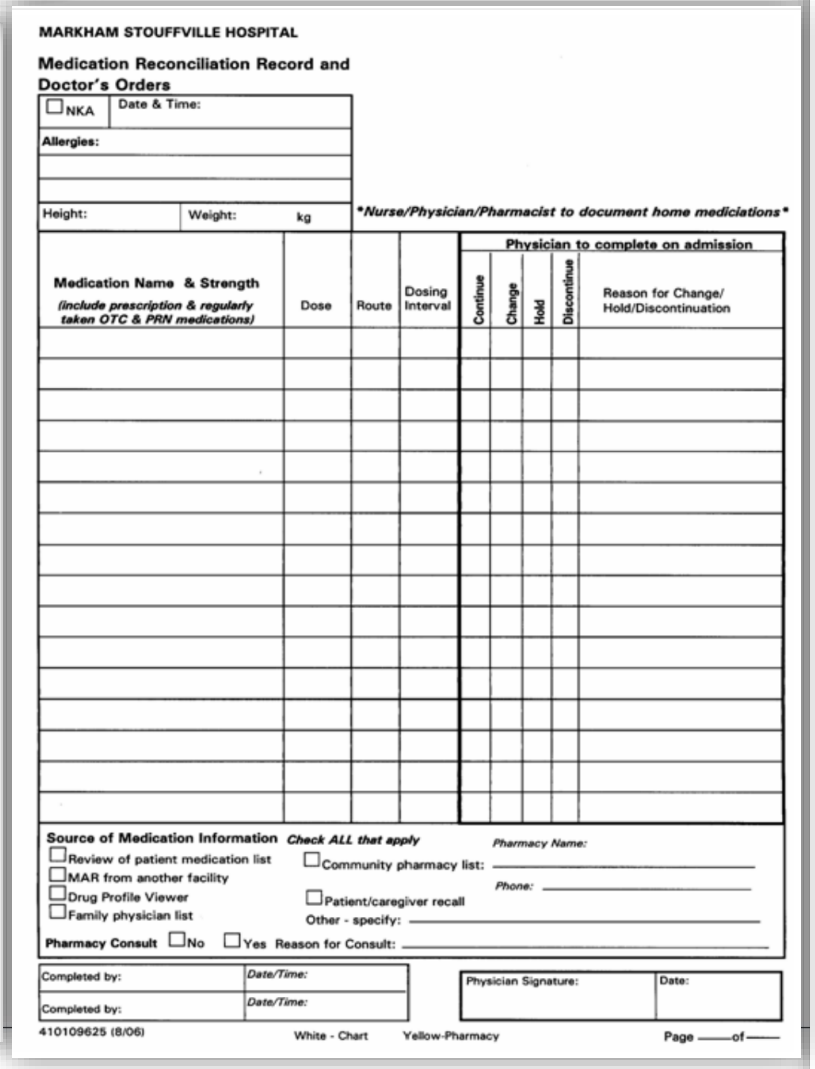

MARKHAM STOUFFVILLE HOSPITAL

Medication Reconciliation Record and Doctor's Orders

☐ NKA | Date & Time:

Allergies:

Height: | Weight: kg

Nurse/Physician/Pharmacist to document home medications

Medication Name & Strength (include prescription & regularly taken OTC & PRN medications)	Dose	Route	Dosing Interval	Physician to complete on admission: Continue	Change	Hold	Discontinue	Reason for Change/ Hold/Discontinuation

Source of Medication Information *Check ALL that apply*

☐ Review of patient medication list
☐ MAR from another facility
☐ Drug Profile Viewer
☐ Family physician list
☐ Community pharmacy list: Pharmacy Name: Phone:
☐ Patient/caregiver recall
Other - specify:

Pharmacy Consult ☐ No ☐ Yes Reason for Consult:

Completed by:	Date/Time:	Physician Signature:	Date:
Completed by:	Date/Time:		

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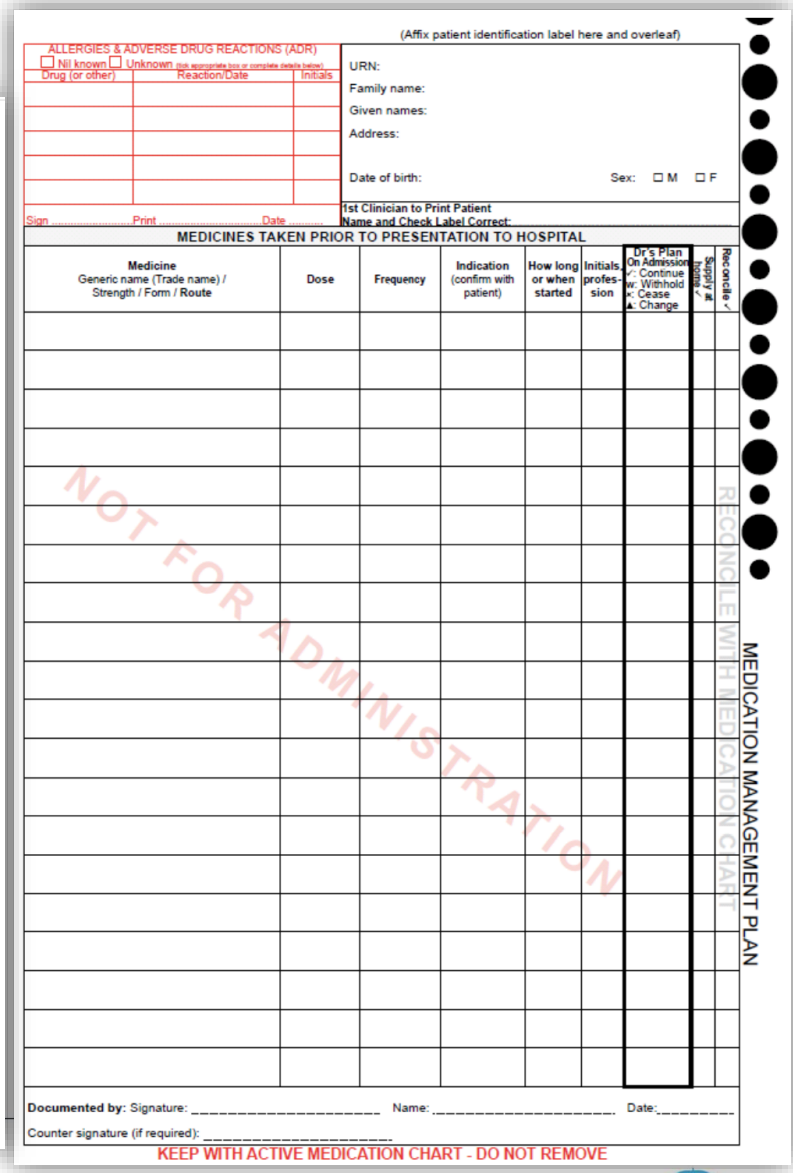


(Affix patient identification label here and overleaf)

ALLERGIES & ADVERSE DRUG REACTIONS (ADR)
☐ Nil known ☐ Unknown (tick appropriate box or complete details below)

Drug (or other)	Reaction/Date	Initials

Sign _____ Print _____ Date _____

URN:
Family name:
Given names:
Address:
Date of birth: Sex: ☐ M ☐ F

1st Clinician to Print Patient Name and Check Label Correct:

MEDICINES TAKEN PRIOR TO PRESENTATION TO HOSPITAL

Medicine Generic name (Trade name) / Strength / Form / Route	Dose	Frequency	Indication (confirm with patient)	How long or when started	Initials profes-sion	Dr's Plan On Admission ✓: Continue w: Withhold ×: Cease ▲: Change	Supply at home ✓	Reconcile ✓

NOT FOR ADMINISTRATION

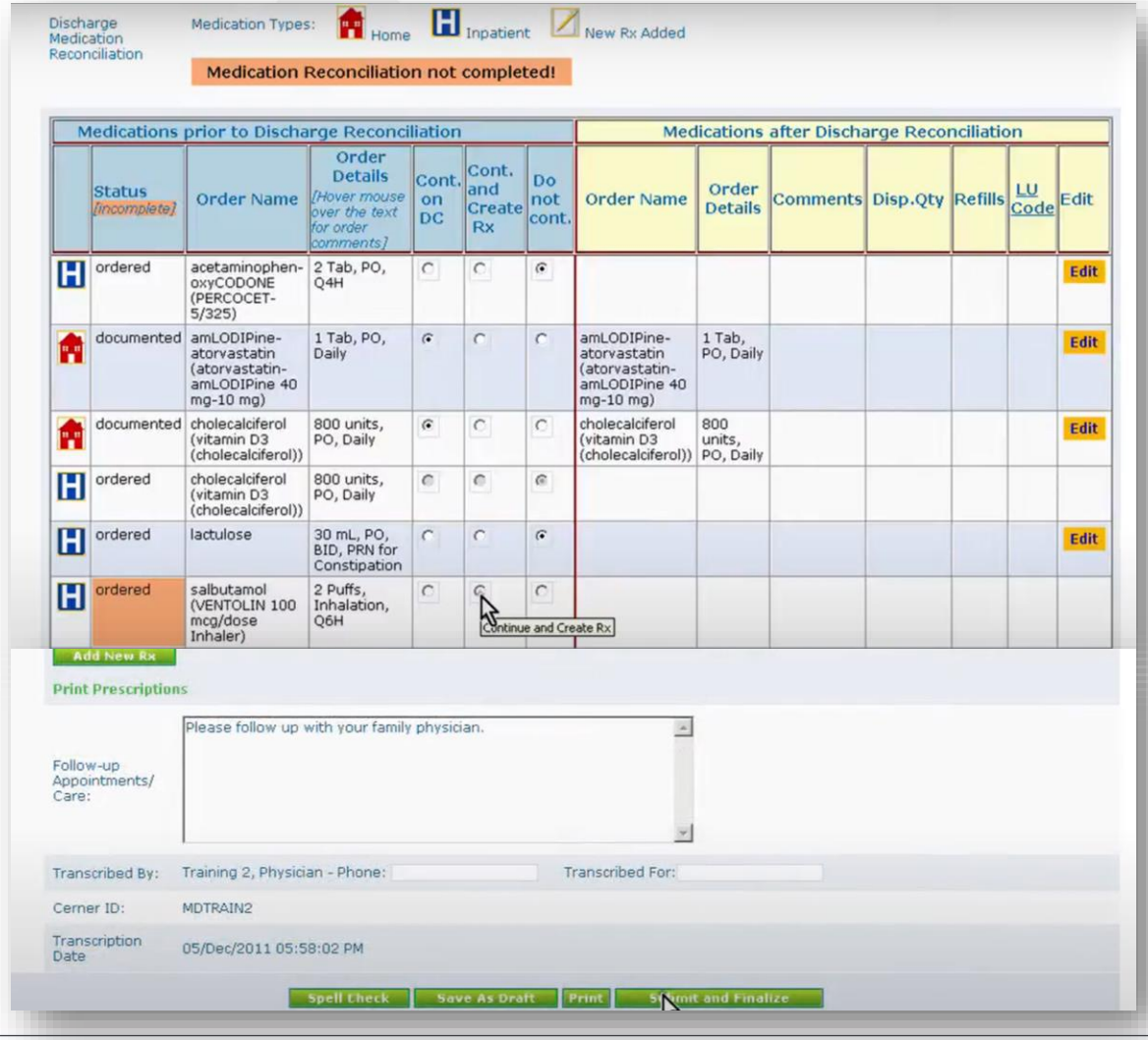
RECONCILE WITH MEDICATION CHART

MEDICATION MANAGEMENT PLAN

Documented by: Signature: _____ Name: _____ Date: _____
Counter signature (if required): _____

KEEP WITH ACTIVE MEDICATION CHART - DO NOT REMOVE

2. Develop the tools, cont.



3. Develop the policies and procedures

Step of process	Detail	Who?	When?	Tools	Input	Output
Obtain best possible medication history (BPMH) on admission	Gather sources of information available as a starting point; interview patient using open ended questions and a systematic process (e.g. BPMH interview guide); the BPMH forms the basis for reconciliation across the continuum of care. It involves documentation of all medications a patient is currently taking at home including drug name, dose, frequency & route of administration. Types of medications include ALL: prescribed and non-prescribed medications (i.e. prescriber did not advise patient to take it), prescription, non-prescription (over the counter - OTCs), herbals and medications taken on an as-needed basis.	Patient/family; ED nurse (e.g. triage); admitting nurse; pharmacist; pharmacy tech; physician.	Ideally, before admission orders written—at least within 24-48 hours of admission *Note*: It will be important to identify criteria for when the BPMH should be obtained more urgently and within what time frame.	Standardized form developed by organization; paper-based or electronic	Patient's list/wallet card; patient and/or family interview; medications brought by pt (e.g. examination of vials); primary care physician, community pharmacist, referring health care facility	Complete and accurate history of patient's preadmission medications in a consistent place in the patient's health record
Use the BPMH to create admission orders (Proactive Model)	This may be accomplished with the use of a form or electronic system where the prescriber will clearly indicate whether each medication on the BPMH is to continue, hold or discontinue, modify	Pharmacist, nurse or pharmacy tech in collaboration with Physician	At the time admission orders are written. (within 24 hours of admission)	Standardized form developed by organization; pre-printed or electronic	BPMH Admission orders (paper based or electronic)	Complete & accurate admission orders
OR	OR		OR	OR		
Compare BPMH with admission orders, identify discrepancies and revise admission orders as appropriate. (Retroactive Model)	Look for any discrepancies between the BPMH and admission orders		When admission orders are written or as soon as possible thereafter. (within 24 hours of admission)	Standardized form developed by organization; pre-printed or electronic		
Measurement of MR 2, MR 3, MR 4: (for selected sample of 30 eligible patients who have received medication reconciliation within 24 hours on admission)	Look for any outstanding discrepancies between the BPMH, other sources of information & the admission orders.	Independent Observer (pharmacist, nurse, other)	After medication reconciliation process is complete.	Patient Level: Independent worksheet to identify medication discrepancies (see Volume 2.)	BPMH, other sources of information and admission orders.	Complete and accurate medication orders

4. Train the Staff

A comprehensive staff education program -key success factors
All staff involved in the medication reconciliation process need to be trained in their areas of responsibility:

- training all new staff; and
- providing ongoing training

4. Train the Staff, cont.

Competency Development

- **Knowledge/Skills/Abilities:**
  - ✓ Understanding of medication reconciliation procedures
  - ✓ Ability to conduct patient medication history interview
  - ✓ Ability to use all available resources to gather patient medication history information
  - ✓ Ability to identify medication discrepancies
  - ✓ Ability to document in the record
  - ✓ Ability to troubleshoot discrepancies identified

4. Train the Staff, cont.
Competency Development Cont..

- **Prerequisites(i.e. necessary) background knowledge/skills/abilities required of staff prior participation:**
  - ✓ Knowledge and understanding of patient interview technique
  - ✓ Foundational understanding of required components for a complete and accurate medication history.
- **Training and education that will be needed** (didactic and experiential):
  - **Didactic:** Independent review of guidance documents regarding Medication Reconciliation procedures. Trainer available for questions.
  - **Experiential:**
    - Observe trainer complete one medication reconciliation
    - Perform medication reconciliation assessment with trainer

4. Train the Staff, cont.

How Competency will be Assessed/Measured

- **Observation:**
  - ✓ Demonstrate proper method of obtaining a complete medication list utilizing all appropriate resources
  - ✓ Demonstrate knowledge of how to conduct a medication history interview
  - ✓ Demonstrate knowledge of how to identify medication discrepancies
  - ✓ Demonstrate knowledge of who to identify to communicate and troubleshoot identified discrepancies
- **Method of assessment:** Direct observation trainer completing medication reconciliation
- **Performance threshold:** Successfully complete ≥ 90% of medication reconciliation competency checklist.

Assessor should be a qualified trainer

4. Train the Staff, cont.
Competency Example

- Successful completion of medication reconciliation training series, consisting of:
  - How to contact an outside pharmacy to collect information
  - How to conduct a patient/family medication history interview
  - Where to look for medication related information in the medical record and electronic systems
  - How to document the Home Medication list in the medical record
- Successful completion of prospective preceptor review of at least one admission medication reconciliation, including the following components:
  - Patient/family interview
  - Outside pharmacy inquiry
  - Documentation of home medication list in medical record

Medication History Patient Interview Checklist

- ❑ Introduce yourself with name and role
- ❑ Verify armband
- ❑ Acknowledge visitors
- ❑ Inquire about preferred pharmacy
- ❑ Check and clarify allergies (including reaction)
- ❑ Review medications (*Strength ,Dose ,Frequency ,Last Dose*)
- ❑ Inquire about other Prescription Medications
- ❑ Inquire about over the counter medications, herbals, and supplements
- ❑ Engage patient regarding any concerns about their medications (cost, side effects, forget, getting to pharmacy)

Techniques for Patient Interviews

- ✓ Patient informed of importance
- ✓ Privacy, sensitivity and confidentiality
- ✓ Ask if the patient maintains a list of medications
- ✓ Ask to see containers for each
- ✓ Ask about medical conditions patient has and meds
- ✓ Open-ended questions
- ✓ Develop a script of probing questions to insure consistency in process

5. Monitor the process

Performance Measures – quantitative measurement of processes and outcomes associated with the SOP.

MANAGE THE PROCESS USING QUALITATIVE & QUANTITATIVE MEASUREMENT

Event Analysis – identification and analysis of any adverse events directly associated with/related to the SOP or its implementation

IDENTIFY AND ANALYZE ADVERSE EVENTS

5. Monitor the process, cont.

MR 1. Percent of Patients with Medications Reconciled within 24 hours of the decision to admit the patient (on admission)

$$= \frac{\text{Number of eligible patients receiving medication reconciliation within 24 hours}}{\text{Number of eligible patients admitted}} \times 100$$

MANAGE THE PROCESS USING QUALITATIVE & QUANTITATIVE MEASUREMENT

MR 2. The Mean Number of Outstanding Unintentional Medication Discrepancies Per Patient

$$= \frac{\text{Number of outstanding unintentional discrepancies}}{\text{Number of eligible patients*}}$$

* refers to all eligible patients (in a random sample of at least 30 patients) who have received formal medication reconciliation within 24 hours of admission

IDENTIFY AND ANALYZE ADVERSE EVENTS

5. Monitor the process, cont.

MR 3. Percent of **Patients** With at Least One Outstanding Unintentional Discrepancy

$$= \frac{\text{Number of patients with at least one outstanding unintentional discrepancy} \times 100}{\text{Number of eligible patients *}}$$

* refers to a random sample of at least 30 patients who have received formal medication reconciliation within 24 hours of admission

Outstanding Discrepancies: Medication discrepancies which are identified by the independent observer. It does not include medication discrepancies identified by the team or medication discrepancies in the process of being resolved

MANAGE THE PROCESS USING QUALITATIVE & QUANTITATIVE MEASUREMENT

IDENTIFY AND ANALYZE ADVERSE EVENTS

Challenges and Lessons learned

Challenges in Medication Reconciliation

- Often, there is no clear owner of this process
- Staff do not have the time to complete each of the steps in the process (Time constraints)
- Accurate sources of information may be difficult to identify
- Patients with poor health literacy
- Often, patients don’t know or aren’t in a position to tell us what they are taking.
- The patient may not want to admit what they have been taking

Challenges in Medication Reconciliation, Cont.

- Labels on bottles are often outdated or incorrect
- Patient may take medication differently than prescribed
- Medication lists are often inaccurate
- Patients often forget several types of medication such as:
  - Medications that are not taken daily. (Once weekly, once monthly, or prn meds)
  - Medications that are kept in the refrigerator such as insulin
  - Medications that require frequent dose changes such as warfarin
  - Pain medications that were recently prescribed.
  - Medications that are not taken by mouth such as creams, patch, implant or lung treatments

Challenges in Medication Reconciliation, Cont.

Sources of Confusion for Patients Regarding Medications

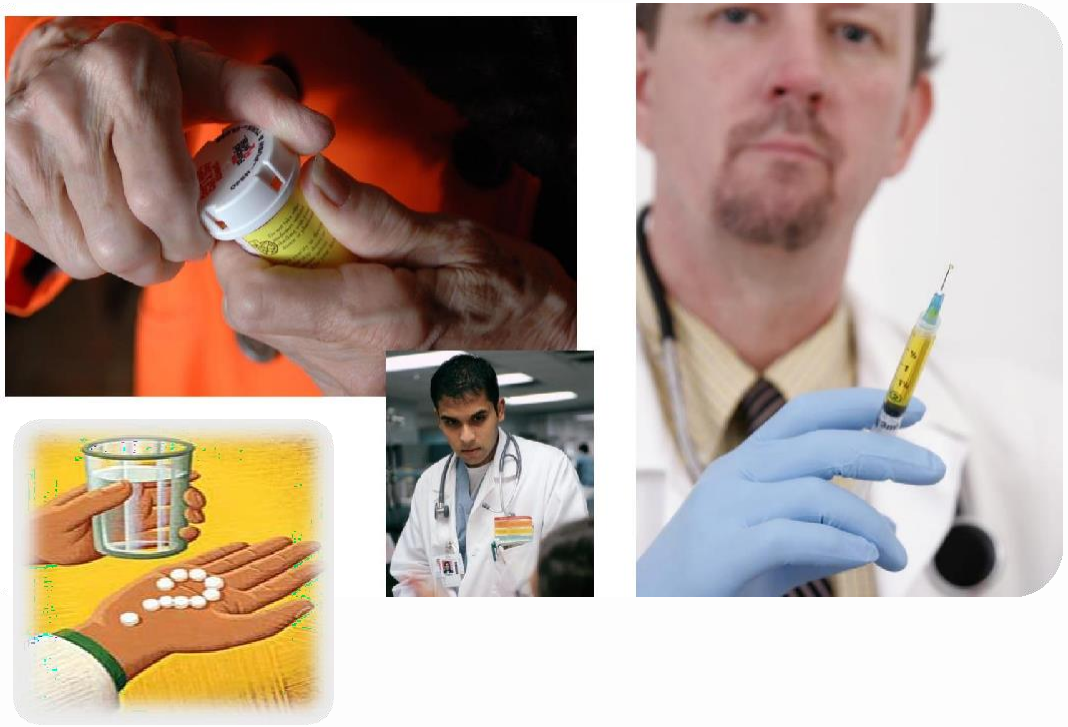
- Multiple names for a single drug
- Failing to instruct patient about medications taken at home that weren't written for at discharge
- Switches to “formulary” versions when admitted
- Changing the dosage strength or frequency without sufficient understanding by the patient as to why

Challenges in Medication Reconciliation, Cont.

- Stress of transitioning through the healthcare system
- Language barriers; cultural beliefs
- Relationship with the healthcare clinician who is obtaining the history
- Interviewer's skill level

Challenges in Medication Reconciliation, Cont.

So many doctors, so little communication...



Voice of the Provider

- "…med rec done in the ER is of poor quality or non-existent…I am admitting a patient who has multiple meds including warfarin. The patient and family have no idea of what meds are as she was recently discharged from x Hospital. Someone from the ER told them they have a full list of meds from the system and not to worry about bringing in a list. The medication reconciliation was never done in the ER in spite of having a list. By the time I logged into the system, there was a downtime…The nightmare would have been avoided if ED promptly documented the meds."

Voice of the Nurse

Medication Reconciliation is. . .

- “Time consuming”
- “Labor intensive”
- “Uncertain.

The patients rarely know what they are taking”

- “Very confusing.

Most patients do not know what they are taking so 60%-70% of the time, the Med Rec in [our EMR] does not match. Also there are meds in the med rec that the patient cannot confirm they are taking.”

Lessons Learned with Medication Reconciliation

Don't Let "Perfect" Get in the Way of "Good"

- Creating the “Best Possible Medication History” (BPMH)
  - Do one's best
  - Get as much information as possible
  - Clarify as much as possibly unclear information
  - Use this information
  - On to the next patient

Lessons Learned with Medication Reconciliation, Cont.

Health Information Technology

- In addition to personal health records, information technology has been utilized in many different ways to improve the medication reconciliation process:
  - Tracking medications across sites of care
  - Allowing for an active comparison of medications and clarification of discrepancies
- These IT interventions have shown variable effectiveness in improving medication reconciliation

Lessons Learned with Medication Reconciliation, Cont.

"Hospital-based medication reconciliation at care transitions frequently identifies unintended discrepancies, but many have **no clinical significance. . . Bundling** medication reconciliation with other interventions aimed at improving care coordination at hospital discharge holds more promise."

Kwan JL, Lo L, Sampson M, and Shjania K. Medication reconciliation during transitions of care as a patient safety strategy. Annals of Internal Medicine. 2012;158:397-403.

Lessons Learned with Medication Reconciliation, Cont.

Approaches to Medication Reconciliation

- "bundled" Medication reconciliation with other interventions:
  - Individualized counseling of patients
  - Coordination of follow-up appointments
  - Post-discharge telephone calls
  - Involvement of a care coordinator/nurse discharge advocate

Lessons Learned with Medication Reconciliation, Cont.

- Process is involves interprofessional collaboration among pharmacists, nurses, and physicians
- Integrating medication reconciliation into discharge summaries
- Combining reconciliation with medication counseling with patients

Fernandes O, Shojania KG. Medication reconciliation in the hospital: what, why, where, when, who and how? Healthc Q. 2012;15:42-49. http://www.ncbi.nlm.nih.gov/pubmed/22874446

Lessons Learned with Medication Reconciliation, Cont.

Patient and Family Engagement

- Providing information about the medications patient is taking
  - Encourage patients to keep an up-to-date list of medications and understand why they take each
- Keeping them informed about changes to the medication regimen
- Education about medications, desired effects and side effects
- During the discharge process, medical staff should ensure that patients are educated about any changes in medication regimen
- Encouraging them to voice concerns they might have, timely, and through what method


من المهم إحضار قائمة الأدوية
الخاصة بك في كل زيارة للمستشفى
الأدوية بوصفة
أعشاب
spsc_sa
spsc.sa
spsc.gov.sa
It is very important to bring your
medication in every visit to the hospital
Prescription medicine
Non-Prescription medicine
Traditional medicine
Vitamins
المركز السعودي لسلامة المرضى
SAUDI PATIENT SAFETY CENTER

المصدر: المعهد الكندي لسلامة المرضى

More Lessons Learned

1. Medication reconciliation issue is not going away
2. Data drives change
3. The admission process is complex. The discharge process is twice as complex
4. No one likes to be asked the same question twice . . . . . including patients
5. Accept no list at face value and no list is perfect
6. There is no quick fix
7. Communicate, communicate, communicate
8. Be flexible-LISTEN to the concerns of staff
9. Data collection is labor intensive
10. Multidisciplinary support is essential
11. To be successful, absolutely must demonstrate the value! This is not just filling out another piece of paper…

This is Hard Work ….
What if We Called it

Asking people to change what they have been doing.

Improved Communication

Providing Optimum Care

Improved Medication Management

It is The Right Thing to Do !

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Thank you