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The Problem
A 72-year old female with a history of heart disease and atrial fibrillation was admitted to the hospital with pneumonia. Her prior medications included Warfarin 3mg daily, Lipitor 10mg daily, and Toprol XL 100mg daily. While in the hospital she was under the care of the hospitalist physicians. She received Pravachol instead of Lipitor as the hospital had a deal with the company to get Pravachol at much lower cost. Her PT (protime) became elevated while receiving the antibiotic Levofloxacin, and her Warfarin dose was decreased to 2mg daily. Upon discharge home, her physician wrote to D/C home on current meds, and she received a list and corresponding prescriptions for Coumadin 2mg by mouth daily, Pravachol 40mg by mouth daily, Toprol XL 100mg by mouth daily and Levoquin 500mg by mouth daily for 5 days. Ten days later she returned with severe body aches, weakness and bright red blood per rectum. Her laboratory evaluation revealed a hemoglobin of 8.6, CPK of 3200, and a PT of 44. Her bag of medications included Coumadin 2 mg daily, Warfarin 3mg daily, Pravachol 40 mg daily, Lipitor 10 mg daily, and Toprol XL 100 mg daily. When asked why she was taking the Warfarin and the Lipitor when they weren’t on her discharge list, she explained that they had been prescribed by her cardiologist who told her it was very important to keep taking these. Fortunately, her excess blood thinning and cholesterol lowering medications were stopped and she recovered completely. She was given a list of medications that also clearly specified which medications were to be stopped, and the information was communicated by phone and fax to the cardiologist with whom she was to follow up.

Unfortunately, scenarios like this one are far too common in our healthcare system. It has been estimated that approximately 7,000 of these deaths are attributable to medication errors. 1

Scope of the Problem
- Incidence rates of adverse drug events (ADEs) range from 2 to 7 per 100 admissions.2
- Preventable adverse drug events are associated with one out of five injuries or deaths from errors, and are a result of poorly designed systems, which often lack independent redundancies.3
- Medication errors are one of the leading causes of injury to hospital patients. Chart reviews reveal that over half of all hospital medication errors occur at the interfaces of care.4
- Up to 60% of patients will have at least 1 discrepancy in their admission medication history.5

Medication delivery in the hospital environment is a complex process consisting of prescribing, transcription, dispensing and administration. Errors can and do occur during any step of this process. Over half (56%) of medication errors occur during the prescribing process.6 Medication errors occur 46% of the time during transitions, admission, transfer or discharge from a clinical unit / hospital.7

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An important component of prescribing medication is accurate information on the patient’s current medications or the patient’s medication history. Obtaining an accurate list of medications is difficult in today’s complex and often fragmented healthcare environment. Compounding the difficulty of obtaining this list are the increasing age of the population, the volume of medications available and used, and the level of medical literacy. Computerized physician order entry (CPOE) is gaining momentum as a mechanism to reduce prescribing errors in American hospitals; however, in order to be effective, accurate medication lists will need to be obtained.

**The Solution**

**Standardize the Process**

A standardized process that identifies the medication name, dose, route and frequency (medication history) and assigns responsibility for obtaining this information establishes a consistent mechanism for medication information collection. Comparing a medication history with physician medication orders and resolving any discrepancies is crucial in preventing prescription errors at transition points (admission, transfer or discharge). This cost-effective and efficient process is referred to as medication reconciliation.

**Medication Reconciliation**

A formal three-step process that includes:

1. Obtaining a complete and accurate list of each patient’s current medications (including name, dosage, frequency and route)
2. Comparing the physician’s admission, transfer or discharge medication orders to that list
3. Resolving any discrepancies that may exist between the medication list and physician order before an adverse drug event (ADE) can occur

The three steps of the medication reconciliation process can prevent prescribing errors of omissions, wrong dosage or frequency of medications, and duplicate orders of the same classification of medications.

A common, successful strategy that hospitals have used for medication reconciliation is a standardized form. The form is often an admission intake, medication, or physician order form. The standardized form’s components are medication history or current medication list, the medication orders, the continuation or discontinuation of the medication, and the reason for a medication discontinuation. There are examples of these types of forms at the end of this chapter.

**Process Accountability**

The medication reconciliation process involves both the patient and the healthcare providers. The patient or the patient’s family is a primary source of his or her medication history. The healthcare providers, the nurse, pharmacist and physician, are involved in the steps of the process. The healthcare providers’ level of involvement will vary according to their process and institutional policy.

Assigning responsibility for each step of the three-step process is crucial to success. In the first step of the medication reconciliation process, the nurse commonly gathers the information from various sources and records a medication history. Pharmacists are used in less than 5% of American hospitals to record medication histories, despite pharmacists’ qualifications and expertise in the area of medication history taking. Physicians are solely responsible for writing the medication orders for the admission, transfer or discharge per their license.

The nurse, the physician and/or the pharmacist can do the second step in the reconciliation process which is comparing the medication order to the history and/or current medication list for transfers and discharge.

The third step, resolving any discrepancies that exist between the medication history (or current medication list for transfers and discharge) and the medication orders, can also be done by the nurse, the physician and/or the pharmacist.

External Support for the Process
There is widespread endorsement for a medication reconciliation process by healthcare quality and safety leaders and regulators.

The Agency for Healthcare Research and Quality (AHRQ) was directed by legislation from Congress to produce an annual report, the National Healthcare Quality Report, on healthcare quality in the United States. The 2004 report includes in its prescribing medications measure, “Percent of adults who report that usual source of care [providers] ask about prescription medications and treatments from other providers.” The emphasis is to have providers solicit information concerning medication history from patients.

The Institute for Healthcare Improvement (IHI), a private leader in the promotion of healthcare safety and quality, has endorsed medication reconciliation. The IHI included Prevention of ADE - Medication Reconciliation as one of the six initiatives for its 100,000 Lives Campaign.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) added medication reconciliation to the 2006 National Patient Safety Goals (NPSG). These goals are determined annually by the JCAHO Sentinel Event Advisory Group with recommendations from hospitals. They are top priorities for the prevention of adverse drug events and the promotion of safety in healthcare.

According to JCAHO’s 2006 NPSG, medication reconciliation should be done whenever the organization refers or transfers a patient to another setting, other services, practitioner or level of care within or outside an organization. At a minimum, medication reconciliation should be done any time the organization requires that the orders be rewritten. Orders may be rewritten when the patient is post-operative or changes service setting, provider or level of care.

<table>
<thead>
<tr>
<th>JCAHO 2006 NPSG</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOAL #8 - Accurately and completely reconcile medications across the continuum of care.</td>
</tr>
<tr>
<td>• Implement a process for obtaining and documenting a complete list of the patient’s current medications upon the patient’s admission to the organization and with the involvement of the patient. This process includes a comparison of the medications the organization provides to those on the list.</td>
</tr>
<tr>
<td>• A complete list of the patient’s medications is communicated to the next provider of service when a patient is referred or transferred to another setting, service, practitioner or level of care within or outside the organization.</td>
</tr>
</tbody>
</table>

JCAHO suggests developing a medication reconciliation form to be used as a template for gathering information about current medications as a method to standardize care and prevent errors. JCAHO’s full list of medications included in the reconciliation process are listed below.

<table>
<thead>
<tr>
<th>JCAHO List of Medications to Reconcile11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prescription Medications 8. Radioactive materials</td>
</tr>
<tr>
<td>2. Sample Medications 9. Respiratory therapy-related medications</td>
</tr>
<tr>
<td>3. Vitamins 10. Parenteral nutrition</td>
</tr>
<tr>
<td>5. Over-the-counter drugs 12. Intravenous solutions (plain or with additives)</td>
</tr>
<tr>
<td>6. Vaccines 13. Any product designated by the FDA as a drug</td>
</tr>
<tr>
<td>7. Diagnostic and contrast agents</td>
</tr>
</tbody>
</table>

Introduction Tool
- Medication Reconciliation at Transition Points

Medication Reconciliation at Transition Points

The medication reconciliation process should be done in sequence, starting with the admission process, then the transfer process, and then finally the discharge process. Each process relies on the process before it. To ensure that all the patient’s home medications are taken into consideration, it is important to check the home list at each step of the process, including admission, transfer and discharge. In addition to transfer and discharge, the list of current medications must be taken into account.

Where to reconcile?

Medication reconciliation is important at care transition points. Care transition points include:
1. Admission to the hospital
2. Transfers within the hospital (Intra-Hospital Transfer)
3. Discharge from the hospital

How to Reconcile?

The following recommendations can be used as a guide to develop your processes for each transition point.

Admission

Medication reconciliation on Admission to the hospital involves comparing the home medication list recorded on admission (called the medication history) to the physician admission medication orders. Any medications that appear on one list and not the other without documentation as to why they were added or removed are considered unreconciled and need to be clarified with the physician.
Medication Reconciliation at Transition Points

**Intra-Hospital Transfer**

Current Medication List (Medication Administration Record - MAR) + Medication (Home) History

MD Medication Transfer Orders → Reconcile Medications Here → Medication Administration Record (MAR)

Medication reconciliation on Intra-Hospital Transfer involves comparing the medication history and the current medication list (Medication Administration Record - MAR) to the physician transfer medication orders. Any medications that appear on one list and not the other, without documentation as to why they were added or removed, are considered unreconciled and need to be clarified with the physician.

**Discharge**

Admission Medication Reconciliation List + Medication (Home) History

Current Medication List (Medication Administration Record - MAR) → Reconcile Medications Here → MD Discharge Medication Orders

Medication reconciliation on Discharge from the hospital involves comparing the admission medication reconciliation list and the current medication list (Medication Administration Record - MAR) to the physician discharge medication orders. Any medications that appear on one list and not the other without documentation as to why they were added or removed are considered unreconciled and need to be clarified with the physician.

Adapted from Medication Safety: Focus Reconciliation Tool Kit. Reproduced with permission of The Carolinas Center for Medical Excellence © October 2005.
2 Assessment
Most who have attempted to implement a process to ensure medication reconciliation will agree that it is a journey. In 2006, American hospitals have embarked on this journey thanks to the Joint Commission on Accreditation of Healthcare Organization’s National Patient Safety Goals and to the Institute for Healthcare Improvement’s 100,000 Lives Campaign. Hospitals are finding that while the three-step process seems relatively straightforward and that it is very beneficial for their patients, it is also very difficult to accomplish.

Hospitals are at different points in the journey. Some may have not started to implement the process, while others may have implemented the process at one care transition point, but not at all care transition points. Still others may have implemented at all three care transition points, but the process is not being done the way it was designed or it is not consistently practiced with all patients.

A systematic assessment of medication reconciliation must be done to determine where your hospital is in the process. In the case of an organization that has not implemented a process at all, it is important to assess your current processes for medication history collection and determine if the physician orders and medication history are ever compared, and if the discrepancies between these two lists are being resolved. An assessment will help you target your improvement efforts and resources. It is important to have a more detailed understanding of the process in order to perform a systematic assessment.

Process Details

A systemic assessment requires a clear understanding of the process components and the sequence of the components. The process components consist of medication history collection, comparing this list to the physician orders and resolving any discrepancies that may exist.

The medication reconciliation process is implemented in order:
1. the admission transition of care,
2. the transfer transition of care, and
3. the discharge transition of care.

Step 1 - Medication History Collection

Person obtaining history
A nurse, a pharmacist, a physician, a pharmacy technician or any combination of these may obtain the medication history. Some organizations use a team approach with a pharmacist and a nurse. Some organizations use a triage approach, consulting a pharmacist to complete the medication history for patients that more than a specified number of medications, or if they are on certain high risk medications or with specific diagnoses.

Sources of medication history
The medication history can be obtained from a variety of sources.
- The patient
- A list the patient may have
- The medications themselves, if brought in from home
- A friend or family member
- A medical record
- The patient’s pharmacy
Process: (adapted from the IHI Getting Started Kit, updated 6/14/2006).
- Ask the patient if they have a medication list or if they brought in their home medications. If so, review the list with the patient. Inquire about each medication, asking when and why they take it.
- If no list is available and the patient is able to provide the information, use a script to ask about medications. An example script is available in tools and tips at the end of this chapter.
- If the patient is not able to provide this history, interview the patient’s family member or friend or call the patient’s primary care physician or pharmacy.
- Review the patient’s past medical record.

Suggest that the patient keep a list of all medications. Review this with the provider at each encounter with the hospital admission or bring in their home medications at each visit. Some hospitals provide patients with prepared durable bags for medications with the hospital logo printed on the side.

Documentation:
- Document the medication history including all the prescription medications, over the counter and herbal medications on the history form, see JCAHO list from Chapter 1 in this tool kit.
- Document for each medication dose, route, frequency, when was the last dose and why the patient is taking it.
- Place the medication list in a readily accessible, consistent location in the medical record.

**Step 2 - Comparing Medication History & Orders**

Person comparing the history:
Typically a nurse or a pharmacist compares the medication history and the physician orders.

Process:
- Comparison should note omissions, (a medication that appears on the history but not on the order and has no documented reasons for discontinuation), or changes in dose, frequency or route.
- On admission, follow the steps above to collect the patient’s history.

On transfer and discharge, you must use the medication history taken on admission and the current list of medications, often referred to as the medication administration record (MAR) and compare this to the physician orders.

Documentation:
Documentation should note if a discrepancy exists and the type of discrepancy.

**Step 3 - Resolving Discrepancies**

Person resolving discrepancy:
Typically a nurse or a pharmacist will notify the physician who ordered the medication to resolve the discrepancy. It is the physician’s responsibility to resolve the discrepancy with an order or provide an explanation for the omission.

Process:
- The physician can be notified by phone, computer or page to resolve the discrepancies.

Documentation:
- Documentation to resolve the discrepancy will either be an explanation on the reconciliation form or in another location designated in your chart or a new physician order.
Assessment

The individuals involved in the medication reconciliation process (admission, transfer, or discharge) can provide a general understanding of how the steps of medication reconciliation are currently being carried out by using the Admission, Transfer or Discharge Medication Reconciliation Process Flow Chart located at the end of this section. The information source for the medication history, who records the information, where it is recorded, how the orders are written, who is reconciling the medications, and who is addressing the discrepancies is contained on the Flow Chart(s). Even if your organization has not yet implemented, it is a good idea to understand how processes are currently being done. To collect this information in a simple way use the graphic flow charts at the end of this chapter. Give a flow chart to a sample of nursing staff, pharmacists and physicians on your floor. Ask them to map out your current process as they practice and understand it by circling an item in each column and connecting the circles with a line. This will provide you a quick way to gather information and direct you to the next step of assessment.

In the final step of assessment, randomly select 10 - 20 charts and walk through the Medication Reconciliation Assessment Algorithm. Ask yourself if there is evidence (documentation) of reconciliation and if it is being done as it was intended.

Other Tips and Tricks
Learning from others who have implemented medication reconciliation is helpful for identifying potential barriers and strategies to overcome those barriers. At the end of this section, see the IHI Tips and Tricks as a reference for these “lessons learned.”

Assessment Tools & Tips
- Medication History Scripting & Tips for Collecting Guidelines (OSF)
- Admission Medication Reconciliation Process Map
- Transfer Medication Reconciliation Process Map
- Discharge Medication Reconciliation Process Map
- Medication Reconciliation Process Assessment Algorithm
- Unit Medication Reconciliation Evaluation Form
- IHI Tips and Tricks (IHI Getting Started Kit, v2.01, June 2006)
OSF SAINT FRANCIS MEDICAL CENTER
MEDICATION HISTORY SCRIPTING
& TIPS FOR COLLECTING GUIDELINES

Medication History Scripting
Medication Allergies
What medications are you allergic to? What did you experience last time it was given to you?

How long ago did this reaction occur? Have you received and tolerated the medication since then?

What other medications would you rather not receive because of a bad drug reaction (other than allergy)?

Current Prescription Medications
What prescription medications do you currently take? Why (or for what reason)?

Are there any that you take only sometimes or when you need it? What and how often?

Current Nonprescription Medications/Supplements
What over-the-counter or nonprescription medications/supplements do you take? Why (or for what reason)?

Are there any that you take only sometimes or when you need it? What and how often?

Compliance/Education Opportunity
How do you take your medicines (with food, morning, night, etc.)?

What barriers prevent you from taking your medications as prescribed? (time, money, etc.)

What medications have you recently stopped on your own? When and why?

Who assists you with your medications? Have you taken anyone else’s medications recently?

Do you bring your medications with you to your doctor’s office or carry a wallet med card?

Physician/Pharmacy
What pharmacy/pharmacies do you currently use?

Do you see more than one physician (cardiologist, endocrinologist, oncologist, family physician, etc.)?
OSF SAINT FRANCIS MEDICAL CENTER
MEDICATION HISTORY SCRIPTING
& TIPS FOR COLLECTING GUIDELINES

TIPS FOR COLLECTING

Things to remember when interviewing:
- Utilize open-ended questions (what, how, why, when) and balance with yes/no questions.
- Use nonbiased questions that do not lead the patient into answering something that may not be true.
- Pursue unclear questions until they are clarified.
- Ask simple questions, avoid using medical jargon, and always invite the patient to ask questions.
- Let pt know the importance of using one central pharmacy/pharmacist.
- Educate the pt on the importance of using a med wallet card and bringing their meds to the hospital, physician’s office, etc.
- When asking about all medications, be sure to get name, dosage form, dosage, dosing schedule, last dose taken – be as specific as possible about prn medications.
- Prompt the patient to try and remember patches, creams, eye drops, inhalers, sample meds, shots, etc, herbal, vitamins, minerals.
- When discussing allergies, educate pt on the difference between a side effect and a true allergy – rash, breathing problems, hives.
- Have pt describe how and when they take their medications (more vague responses may indicate noncompliance).

Steps to take if patient cannot remember a medication or if clarification is needed:
- Obtain a detailed description of the medication from pt or family member - dosage form, strength, size, shape, color, markings.
- Talk to any family members that are there or contact someone that could possibly bring in the medication or read it over the phone.
- Try calling the patient’s pharmacy to obtain a list of medications that patient has been regularly filling.
- Contact the patient’s physician/physicians to try and get an accurate listing of their current medications.
- Obtain previous medical records.
## Admission Medication Reconciliation Process

**Directions:** This is a graphic representation of a process map to illustrate your understanding of the admission medication reconciliation process. To complete this please circle items from each column and connect the circled items across the columns.

<table>
<thead>
<tr>
<th>Medication History Source FROM</th>
<th>Medication History Recorder WHO</th>
<th>Medication History Location WHERE</th>
<th>Reconciliation All sources of Information Reconciler WHO</th>
<th>MD ORDERS HOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Med Pocket Card or List</td>
<td>RN</td>
<td>RN Admission Sheet</td>
<td>RN</td>
<td>MD Hand Written In Chart</td>
</tr>
<tr>
<td>Patient Verbal</td>
<td>MD</td>
<td>MD Hx &amp; PE</td>
<td>MD</td>
<td>Automated Computer</td>
</tr>
<tr>
<td>Family</td>
<td>MD</td>
<td>MD Orders</td>
<td>Pharmacist</td>
<td>Automated Computer</td>
</tr>
<tr>
<td>Another Healthcare Facility</td>
<td>Pharmacist</td>
<td>Other (list):</td>
<td>Other (list)</td>
<td>Other (list)</td>
</tr>
<tr>
<td>Medical Record History</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Prescription Bottles</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Other (list)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication History Source FROM</td>
<td>TRANSFER Medication MD Orders HOW</td>
<td>Transferring Unit (MAR) Reconciled with Transfer Orders Reconciler WHO (Preop)</td>
<td>Accepting Unit (MAR) Reconciled with Transfer Orders Reconciler WHO (Post-op)</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>RN Admission Sheet</td>
<td>MD Hand Written In Chart</td>
<td>RN</td>
<td>RN</td>
<td></td>
</tr>
<tr>
<td>MD Hx &amp; PE</td>
<td></td>
<td>MD</td>
<td>MD</td>
<td></td>
</tr>
<tr>
<td>Medication Administration Record</td>
<td></td>
<td>Pharmacist</td>
<td>Pharmacist</td>
<td></td>
</tr>
<tr>
<td>MD Orders</td>
<td></td>
<td>Automated Computer</td>
<td>Automated Computer</td>
<td></td>
</tr>
<tr>
<td>Reconciliation Form</td>
<td></td>
<td>Other (list)</td>
<td>Other (list)</td>
<td></td>
</tr>
<tr>
<td>Automated Computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medications in unit dose drawer</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other (list)</td>
<td></td>
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</tbody>
</table>

Directions: This is a graphic representation of a process map to illustrate your understanding of the transfer medication reconciliation process. To complete this please circle items from each column and connect the circled items across the columns.

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## DISCHARGE MEDICATION RECONCILIATION PROCESS

Directions: This is a graphic representation of a process map to illustrate your understanding of the discharge medication reconciliation process. To complete this please circle items from each column and connect the circled items across the columns.

<table>
<thead>
<tr>
<th>Medication History Source FROM</th>
<th>Discharge Medications Written WHERE</th>
<th>Discharging Unit Reconciled Discharge Medication Reconciler WHO</th>
<th>Patient Education Medication List Educator WHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reconciliation Form</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>RN Admission Sheet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MD Hx &amp; PE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication Administration Record</td>
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<td></td>
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<tr>
<td>MAR</td>
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<td></td>
<td></td>
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<tr>
<td>MD Orders</td>
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<tr>
<td>Automated Computer</td>
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<td></td>
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<tr>
<td>Medications in unit dose drawer</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other (list)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Discharge Summary</td>
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<td></td>
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<tr>
<td>Automated Computer</td>
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<tr>
<td>Other (list)</td>
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<td></td>
</tr>
<tr>
<td>RX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescriptions</td>
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<td></td>
<td></td>
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<tr>
<td>MD Discharge Sheet</td>
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<td></td>
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<tr>
<td>RN</td>
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<td>MD</td>
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<tr>
<td>Pharmacist</td>
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<td>MD</td>
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<td></td>
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<tr>
<td>Other (list)</td>
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<td>Other (list)</td>
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<tr>
<td>Other (list)</td>
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</tr>
</tbody>
</table>
Medication Safety Reconciliation Algorithm

1. **Admission** Medication Reconciliation Process Evident?
   - Yes
   - No

2. Is the **admission** reconciliation process done the way it was designed?
   - Yes
   - No

3. **Transfer** Medication Reconciliation Process Evident?
   - Yes
   - No

4. Is the **transfer** reconciliation process done the way it was designed?
   - Yes
   - No

5. **Discharge** Medication Reconciliation Process Evident?
   - Yes
   - No

6. Is the **discharge** reconciliation process done the way it was designed?
   - Yes
   - No

Move to periodic surveillance
# Unit Medication Reconciliation Evaluation

Using the list below, carefully evaluate your unit's processes related to medication reconciliation. Base your evaluation on your current unit practices and NOT solely on your policies and procedures. Components checked as "NO" identify possible areas for improvement in your unit's medication reconciliation process.

<table>
<thead>
<tr>
<th>Our unit has a process to</th>
<th>ADMISSION</th>
<th>TRANSFER</th>
<th>DISCHARGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect medication histories</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Reconcile MD orders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eliminate discrepancies</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Tips and Tricks: Adverse Drug Events
(Medication Reconciliation)

During the past 18 months, more than 3,000 hospitals across the US have been working hard to implement the six Campaign interventions. Here are some of the "tips and tricks" for successful testing and implementing of each intervention that we have gathered from our site visits to Campaign hospitals, our Campaign calls, and our Discussion Groups on IHI.org.

General tips for implementing medication reconciliation:

- Put the patient first.
- Take the time to understand the existing medication process in your organization to determine how medication reconciliation fits in.
- Implementing medication reconciliation surfaces defects in the medication system. Determine how many existing safe practices should be in place before implementing a successful medication reconciliation process.
- Senior leadership and clinical leadership must support the hospital's efforts to implement medication reconciliation.
- Test different processes; one process may not work for all patients and situations.
- Do not let "waiting to develop the perfect system" slow you down.
- Be aware that there may be additional work for staff.
- Reducing rework may offset some of the time invested in medication reconciliation at admission.
- Use clinical judgment to determine when medication reconciliation applies.
- Use stories of errors and rework to engage staff.
- Develop reliable processes that do NOT rely on vigilance and hard work to ensure their success.
- Take advantage of habits and patterns.
- Contact other hospitals for ideas that you can test in your own hospital.

Tips for collecting an accurate medication list:

- Collect the best list you can. Learn why the list is not complete and work on how to address these gaps.
- List the source of information; this may be useful in determining the reliability of the medication list.
- Defer to the person who is in the best position to collect this information—nurses, pharmacists, pharmacy technicians, residents or physicians.
- Involve pharmacists with high-risk patients or those with complex medication regimens.
IHI 100kLives Campaign, Getting Started Kit: Prevent Adverse Drug Events (medication Reconciliation, How-to Guide, v2.01, updated 6/14/06)

- Develop a standard interview sheet to improve the information collected.
- Segment patients: collect medication histories from pre-op patients during pre-op screening.
  One process may not work for all patients.
- In all cases, interview the patient to confirm the dose and the frequency for each medication the patient is taking.
- If a patient has a caregiver, interview that individual to obtain a medication history.
- Clarify responsibilities for completing this process.
- Collaborate with other health care facilities to develop a common format for a patient’s own medication list.
- Engage patients:Inform them of the importance of carrying this information with them as they visit different care providers.

Tips for streamlining the process on admission:

- Incorporate the medication history into existing forms.
- Determine if the medication history form can be used as an order form.
- Use technology to download information from an electronic health record.

Tips for completing medication reconciliation on transfer:

- Identify when medication reconciliation applies:
  - Any time the organization requires that orders be rewritten
  - Any time the patient changes service, setting, provider or level of care and new medication orders are written
  - For transitions not involving new medications or rewriting of orders, the organization determines whether reconciliation must occur.
- Develop policies and procedures to guide staff.
- Ensure that the original medication list is available at the time of transfer.
- Identify who is responsible for completing medication reconciliation.
- Develop a process to assist specialists ordering medications with which they have little familiarity.

Tips for completing medication reconciliation on discharge:

- Print medications from the pharmacy profile onto a form that can be used as a discharge order.
- Involve pharmacists in discharge reconciliation.
- Develop a process to assist specialists ordering medications with which they have little familiarity.
IHI 100kLives Campaign, Getting Started Kit: Prevent Adverse Drug Events
(medication Reconciliation, How-to Guide, v2.01, updated 6/14/06)

Tips for completing medication reconciliation for patients undergoing ambulatory procedures and emergency department:

- Determine if medication reconciliation applies.
- Differentiate the need for a medication history and the need for medication reconciliation.
- Segment the patient population: one process may not work for all patients.
- Review JCAHO’s description of “minimal medication use”.
- Adopt one form to begin medication reconciliation in the ED that can be used whether or not the patient is admitted.

Tips for working with others:

- Engage physician offices, asking that they keep the patient’s medication list current.
- Develop a standardized medication list for your region or state.
- Involve patients in developing the form.
- Publicize the importance of medication reconciliation on local cable TV outlets, church bulletins, senior center newsletters, and local press.
- Use “brown bag” events to review medications. Provide each patient with an up-to-date medication list.
- Work with community pharmacies to improve communication about medication histories.
3 The Project
Before you begin a performance improvement project, it is important to understand the basic tasks involved and decide who will manage the project. While a dedicated project team, including the direct care providers, is desirable to conduct the performance improvement project, the resources are not always available to do this. The team leader initially may need to devote more time than other members of the team to facilitate the project. Additionally, it is important to estimate resource consumption of other team members to ensure the clear expectations of time commitments. This chapter is designed to guide you through the planning stage.

### Manage your project

Two of the most important elements of an effective project are a clear plan to determine resources required and a realistic schedule. You may want to ask yourself the following questions:

1. **How many resources are available to conduct this project?**
2. **Who within the hospital is available to work on this project?**
3. **When do I need to have the medication reconciliation process in place?**

Before you decide on a budget and the project’s scope, we recommend that you read this entire Tool Kit since it outlines the tasks that need to be accomplished.

Your project plan is unique to your facility. It is dependent on where and how you receive your customers. It is also dependent on your current systems, size, culture and adaptability. All these factors determine the number of tests of change and how quickly the plan can be implemented. In the first six weeks of the project, you will understand your current process, develop ideas to change or create a new process, and perform two tests of change. The timeline below is a guideline to help plan the tasks that will need to be completed.

<table>
<thead>
<tr>
<th>Project Planning Time Line</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment - Ch. 2</strong></td>
</tr>
<tr>
<td>Assess your admission medication reconciliation process</td>
</tr>
<tr>
<td>Assess your transfer medication reconciliation process</td>
</tr>
<tr>
<td>Assess your discharge medication reconciliation process</td>
</tr>
<tr>
<td>Learn other’s barriers and strategies</td>
</tr>
<tr>
<td>Review process details</td>
</tr>
<tr>
<td><strong>The Project - Ch. 3</strong></td>
</tr>
<tr>
<td>Management - scope, resources, schedule</td>
</tr>
<tr>
<td>Form project team</td>
</tr>
<tr>
<td>Communicate and engage others</td>
</tr>
<tr>
<td><strong>Performance Improvement Model - Ch. 4</strong></td>
</tr>
<tr>
<td>Select a pilot or test area(s) (unit or floor)</td>
</tr>
<tr>
<td>Collect baseline data</td>
</tr>
<tr>
<td>Run a test of change</td>
</tr>
<tr>
<td>Evaluate - data</td>
</tr>
<tr>
<td>Re-run test of change</td>
</tr>
<tr>
<td><strong>Spreading and Formalizing Your Changes - Ch. 5</strong></td>
</tr>
<tr>
<td>Determine spread plan</td>
</tr>
<tr>
<td>Determine education plan</td>
</tr>
<tr>
<td>Determine communication plan</td>
</tr>
<tr>
<td>Formalizing process</td>
</tr>
</tbody>
</table>

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*Note: The table above is a simplified representation of the project planning timeline.*
Form a project team and schedule regular meetings

Who are the best people to work on the project team? The project team is vital to the success of your project. An effective team will include representatives from every phase of the process, including nurses, pharmacists and physicians. To ensure that the process can spread successfully in your organization, it is also important to include representation from quality improvement or another administrative professional that will address the organization as a whole. In addition to having diverse professionals on your team, you will want to identify the roles of the team members. This may be based on their skills inventories. Successful project teams have identified roles, such as a team leader or facilitator, a recorder and a meeting time keeper. Additionally, you may choose to assign a task based on profession or duties. At the end of this chapter, there are tools to help with recording skills inventories and assigning team roles and tasks.

The project team’s responsibilities

The project team is responsible for a variety of duties. Highlights of some of these project duties include:

- **Planning** - Determining the scope of the project based on available resources and planning project tasks
- **Selecting the Project Location and Communication** - Determining where the pilot or test project will be done, gathering of initial baseline information, how the project will be communicated and who will be responsible for the communication that is carried out
- **Selecting and Testing Change Ideas** - Reviewing the data, making recommendations for process changes and assuring that the changes are tested effectively
- **Collecting Data** - Assigning responsibility to individual(s) for data collection
- **Spreading New Process** - Developing spread plan, including education and communication
- **Formalizing Process** - Assigning responsibility to an individual(s) to formalize process in the organization

Team Meetings

The project team meetings should be considered sacred time and used as a time to brainstorm, discuss findings and determine a common direction. Some teams choose to do meetings electronically or over the telephone. Regardless of how you decide to conduct your regularly scheduled team meetings, you should use agreed-upon ground rules.

Communication and Engaging Others

Communication, early and frequently, is essential to the success of any quality improvement project. Communication will need to include education on the problem and the solution, and must target a specific audience.

Engage Leadership

Leadership is paramount in setting and communicating the vision for the entire organization. John P. Kotter, a well-known author and Harvard business professor, wrote in his book Leading Change that “Leadership should estimate how much communication of the vision is needed, and then multiply that effort by a factor of ten” (Kotter, 1996). Therefore, early engagement of senior administrative and physician leadership is one of the most important determinants for project success.

The methods of communication and education can be verbal and or written and should be targeted to the administrative audience. It should convey a concise message outlining the cost of the problem (medication errors) and the solution (medication reconciliation). When examining costs and benefits it is important to keep in mind the four sectors of the hospital’s business: financial, customer, learning and growth (employee development), and the internal business (mission, service or product). While all four quadrants of the hospital business are important from the leadership perspective, they may have a greater perceived obligation to the financial aspects of the hospital business. Therefore, your message should be delivered with great emphasis on financial costs. Tools at the end of this chapter can assist you in communicating the message to the senior leadership.

The financial costs of placing a medication reconciliation process in place can be broken down into two parts. The first part is the project costs. These are the costs associated with establishing a team, running pilot projects to test and tweak the process, educating the various stakeholders, purchasing items that you may need to run the pilots and
later, spreading and formalizing the process so it is incorporated into routine operations. This tool kit offers a sample white paper proposal to help you estimate project costs. It does not address operational costs. These costs are beyond the scope of the tool kit and vary greatly depending on your organization.

The second part of the financial costs associated with establishment of a medication reconciliation process at each care transition point is the costs of on-going operations. To determine these costs, you must have an understanding of who will be responsible for each step of the process, how much time each step will require. It is important to note that many hospitals have placed the medication reconciliation process into routine operations without any additional staff. To do so these organizations have carefully assessed their current processes, eliminated steps (for example a medication history in an admission assessment located elsewhere in the medical record) that are no longer needed and been very creative in addressing their barriers. Creative ideas such as using a consulting pharmacist for specified criteria, redistributing workload of team members to accomplish, etc. You can hypothesize what this may look like for your hospital based on similar hospitals strategies and added costs.

To balance expenditure, it is necessary to examine the benefits. The data collected in this project can assist you. Also, identifying the rate of ADEs prior to the implementation and then a year after the implementation. Additionally, you can examine the length of stay associated with ADEs. The financial costs can then be estimated. Some may argue that tying these indicators to financial costs is a stretch. However, the financial cost of care will be reduced if your process allows you to deliver better, more efficient and safer care. Until your team collects data for several months, however, documenting the benefits may be difficult. In the meantime, you may project the benefits by applying your hospital’s financial data to outcomes in published studies. (See the reference section in Chapter 1 - Introduction).

**Engage Physicians**

Many physicians shutter at the term medication reconciliation. They have been asked to change their processes and sometimes adopt new ones that seem far too complex. The process should be designed to reduce their workload, eliminate steps if possible and fit into the regular workflow (IHI Getting Started Kit v2.01). As with senior leadership engagement, physician engagement is very important to the success of your project. If there is a physician leader that is also a senior administrative leader that you previously engaged, it is recommended to ask her/him to champion this effort. In any case, identifying one or more physician leaders - either formal leaders or respected “thought leaders” - to champion the initiative will make your efforts much easier.

In targeting physicians, a concise message in many different formats and venues will be important. Most physicians in today’s environment are feeling overwhelmed. A message that conveys the importance of medication reconciliation to the safety of their patients should be emphasized. It will be important to deliver a balanced message that stresses that the aim of medication reconciliation is not to question their ability to order medications for their patients, rather medication reconciliation is a safety net put in place to assure that the patient receives exactly the medications that they need. Assure the physicians that they are a very important part of this safety process for the care of their patients.

Sharing the outcome data, such as the percent of admissions (or transfers, or discharges) with any unreconciled medications, percent of unreconciled medications or unreconciled medications per 100 admissions (or transfers or discharges) can assist you in helping build the case for medication reconciliation. Until your hospital data is available, you may need to share study data with the physicians. But perhaps the most effective and inspiring way to evoke change is to share the individual stories of patients with the physicians. The physician is the key player in this initiative and therefore must be involved in developing a process that works.

**Engage Staff**

As with educating the senior leadership and physicians, communication with the staff is very important. The staff, like the physicians, will need to participate in process development. They are the keys to the success of the team, as they will more than likely be involved in either the collection of the history or in the comparing and notifying the physician of discrepancies. A clear understanding of the purpose of medication reconciliation and their contribution to the process is very important.

In targeting the message to staff you will need to keep in mind that they, like physicians, are inundated with tasks
and responsibilities. Asking them to learn about a new program, let alone participate in a pilot project or development of the process, may seem too much for some. Therefore, the message to the staff will place a great emphasis on the enhancement of their work environment and care and service delivered to their patients. It will be important to deliver a balanced message that stresses the aim of medication reconciliation is not to question the care that she/he has been delivering, or to take over her/his responsibilities to safe medication administration, but rather to put a safety net in place to deliver the right medication to the patient every time.

It is also important to communicate to the staff that while this may seem like more time on the forefront, medication reconciliation has actually saved time with errors and complications later on in a patient’s admission.

Studies can be shared with this group until outcome data becomes available. Once the outcome data (such as the percent of admissions [or transfers, or discharges] with any unreconciled medications, unreconciled medications per 100 admissions [or transfers or discharges] and percent of unreconciled medications) becomes available, even in the pilot group, it should be shared with all staff members. Printing your online run charts will assist you as you communicate your progress during the project. As with physicians, sharing specific patient examples [stories] can be a very powerful motivator.

Engage and Educate the Patients and Families
Patients can and should play a major role in the medication reconciliation process. As the only constant player in the process, the patients have the ability to ensure that their list is updated with every visit to their providers. Education and communication with patients and families will need to explain the purpose of medication reconciliation and their role in the process. There are many examples of medication lists and wallet cards that are being used. There is a copy of one from OSF Saint Francis Medical Center and one that has been developed and endorsed by the North Carolina Medical Society in the back of this chapter.

Frequent Ongoing Communication with All Audiences
To effectively lead change, we must communicate our message again and again and again. We may start to think that everyone already knows what we are going to say because we have shared it so many times before. According to Kotter in Leading Change “The most carefully crafted messages rarely sink deeply into the recipient’s consciousness after only one pronouncement. Our minds are too cluttered and any communication has to fight hundreds of other ideas for attention…effective information transfer almost always relies on repetition.” (Kotter, 1996). Communication informs all audiences of why the effort is important and invites participation. Common communication methods are newsletters, posters in common areas, staff meeting agenda items, and face-to-face meetings. There are examples of a communication newsletter, poster and a communication checklist at the end of this chapter. Additionally, there is a power point slide presentation to help communicate your message. The presentation can be adapted to a specific audience (leadership, physicians, pharmacy/nursing staff) by removing or revising slides.

The Project Tools
- Medication Reconciliation Proposal for Hospital Leadership (management tool)
- Form a Project Team (management tool)
- Team Meeting Form (management tool)
- Communication Checklist (communication tool)
- Communication Flyer (communication tool)
- Communication Newsletter (communication tool)
- Medication Reconciliation Presentation (communication/education tool)
Medication Reconciliation Proposal for Hospital Leadership

To:  
Senior Leadership

From:  
Quality Improvement Director or Chair Medication Safety Committee

Background: The 1999 IOM report, To Err is Human, estimated that 44,000 to 98,000 Americans die each year as a result of medical errors. It is further estimated that approximately 7000 of these deaths are attributable to medications (Michels, 2003). Additional studies have shown that preventable adverse drug events are the result of poorly designed systems that often lack independent redundancies and often occur at the interfaces or transitions of care (Fronovost, 2003 and Rozich, 2004). Medication delivery in the hospital environment is a complicated process consisting of prescribing, transcription, dispensing and administration. Errors can and do occur at any step of this complex process. The majority, 56%, occur during the prescribing process (Michels, 2003).

Proposed Solution: To prevent adverse drug events during the prescribing process, a formal three-step process is recommended. The process includes 1) creating a standardized process to collect an accurate medication list for each patient, 2) comparing this list to the physician admission, transfer or discharge medication orders, and 3) resolving any discrepancies that exist between the medication list and the physician order. This standardized process is often referred to as medication reconciliation.

Project Plan: Upon leadership approval, a project team will be formed. The project team will consist of quality improvement staff, pharmacy staff, nursing staff and physicians. The team’s aims will be to work with frontline staff to:

- Assess our current processes for each of the three steps of medication reconciliation at each care transition point (admission, transfer and discharge)
- Identify gaps in the processes.
- Redesign with direct care provider input the processes to achieve the aim
- Spread the process throughout the hospital providing education and training for all staff
- Evaluate the outcomes
### Proposed Project Expenses

#### Direct Expenses – Personnel

<table>
<thead>
<tr>
<th>Project Personnel</th>
<th>Project Role</th>
<th>Total Number of Hours (Weeks # 1–6 of Project)</th>
<th>Total Number of Hours (Weeks # 7–27 of Project)</th>
<th>Total Project Hours</th>
<th>Personnel Cost (Cost/Hour)</th>
<th>Projected Total Project Direct Costs (Personnel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Improvement Professional</td>
<td>Project Manager</td>
<td>60</td>
<td>152</td>
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<tr>
<td>Week 7-26= ____ hours per week</td>
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<tr>
<td>Staff Nurse</td>
<td>Team Member</td>
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<tr>
<td>Week 1-6 = ____ hours per week</td>
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<td>Week 7-26= ____ hours per week</td>
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<tr>
<td>Nurse Manager</td>
<td>Team Member</td>
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<td></td>
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<tr>
<td>Week 1-6 = ____ hours per week</td>
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<tr>
<td>Week 7-26= ____ hours per week</td>
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<td></td>
</tr>
<tr>
<td>Pharmacist</td>
<td>Team Member</td>
<td></td>
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<tr>
<td>Week 1-6 = ____ hours per week</td>
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<td>Week 7-26= ____ hours per week</td>
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<tr>
<td>Information Support (IS)</td>
<td>Team Member</td>
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<td>Week 7-26= ____ hours per week</td>
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</tbody>
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### Proposed Project Expenses (continued)

#### Direct Expenses - Non-personnel

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Items</th>
<th>Cost per Item</th>
<th>Projected Total Project Direct Costs (Personnel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>AxB=C</td>
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</tr>
<tr>
<td>Forms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Supplies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posters</td>
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</table>
Form a Project Team

Develop Team

<table>
<thead>
<tr>
<th>Team Name:</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Team Purpose:</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Team Goal:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

❑ Recruit other staff members who are key to this project

- Think about your facility and the different units/floors or departments and how medication reconciliation may apply.
- Consider the possible process variations that exist throughout your hospital. Your facility may have units where transfer is the only transition point that may exist, for example an ICU. Take a process inventory for your facility.
- If you have tried to initiate medication reconciliation in your facility, think of the variation that may exist in adopting a medication reconciliation process.
- Choose people to sit on your team that will be accountable to spread the process throughout your organization and ones specific to the floor where you will initiate the project.
- Utilize Admission, Transfer or Discharge Medication Reconciliation Process Flow Diagrams to assist you in understanding how current processes may exist.
- A physician champion is imperative to the project’s success. Engage a physician in the beginning of this project.

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- Your team should include people involved in every phase of the process. Consider possible process variations that occur on different shifts, such as nights and weekends.
- Record this information in the table below.

<table>
<thead>
<tr>
<th>Name</th>
<th>Role or Title</th>
<th>Skill Inventory</th>
<th>Email</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff RN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QI Coordinator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit Manager</td>
<td></td>
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</tr>
</tbody>
</table>

1 - i.e. facilitator for groups, authority within facility to make changes, able to communicate well with staff, data collection and/or analysis

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Project Team Meeting

Team Meetings

- Set-up regular team meetings
  - Regular team meetings present opportunities to brainstorm, discuss ideas and make decisions. Meetings also ensure that all responsibilities and duties do not fall to one person.
  - Use contact information from list above to create an email list.
  - Use email list to set regular (at least twice a month) meeting times.
  - Keep meeting duration to no longer than one hour.
  - Establish a consistent meeting time, day and place.

These meetings will occur for the duration of the project and subsequently only as needed. While in-person meetings are encouraged, sometimes in a hospital setting these are difficult to schedule. You could use online meetings or telephone conference calls as other alternatives. All team members are very busy with the regular duties, respecting their time is very important, therefore meeting time should be used wisely. Physician team members are particularly difficult to participate in team meetings, yet their involvement is imperative to the success of the project. Respecting their time by grouping agenda items that you need physician input on at the beginning of the meeting. If the physician is unable to attend the meeting, make sure the minutes are forwarded to him/her with the list of action items that they need to follow-up on.

MEETINGS
Frequency:
Day:
Time:
Place:

- Establish Team Ground Rules
  - In addition to meeting schedule the team should discuss:
    - Attendance expectations
    - Assignment completion expectations

Success Tip: Continue to Monitor
After project completion, facilities are encouraged to periodically monitor the progress of implemented interventions. Successful and sustainable interventions depend on constant evaluation of your process. A current quality improvement or safety committee that meets regularly may appropriately take on monitoring duties after the project has ended.

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Communicate Project to All Hospital Staff

Communication and education, early and frequently throughout the project, is essential to success. It informs healthcare workers of why the effort is important, and invites participation. Listed below are key participants that should be included in education and communication of this project. Those directly involved in the process (for example the nursing staff, unit manager, pharmacist, and physicians) should have constant input regarding potential changes to the process and the effectiveness of those changes.

1. Targeted Improvement Area (nursing unit or floor): Direct Care Providers
   - [ ] Staff meeting agenda item
   - [ ] Send newsletter
   - [ ] Place posters in targeted and high-traffic areas, such as nursing floors, lounges, dictation areas, restrooms, etc.

2. Hospital wide: Staff and management of all disciplines throughout hospital
   - [ ] Send newsletter
   - [ ] Place posters in targeted and high-traffic areas, such as nursing floors, lounges, dictation areas, restrooms, etc.
   - [ ] Encourage all groups affected to make project a standing agenda item

3. Administrator: Director, VP, CEO
   - [ ] Face-to-face meeting
   - [ ] Review newsletter
   - [ ] Encourage reporting to the Hospital Board the purpose of the project and your hospital’s plan of participation; offer to present at a Hospital Board meeting

4. Physicians: Involvement at all levels of the hospital is important to project success. Physicians should be encouraged to participate on the improvement team and communicate to peers.
   - [ ] Send newsletter
   - [ ] Place posters in high-traffic areas, such as nursing floors, lounges, physician lounges, medical information management and dictation areas
   - [ ] Others - group meetings

Success Tip: Communication & Education are Key
Encourage all team members to share project information with their respective departments.

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Hospital Name Here is participating in a Medication Reconciliation Project. We need YOUR support and participation to reconcile medications to ensure medications are not omitted, duplicated, have interactions, or have name/dose/route confusion.

Help Us Reduce Medication Errors

Did you know?

- Incidence rates of adverse drug events (ADEs) range from 2 to 7 per 100 admissions.
- Preventable ADEs are associated with 1 out of 5 injuries or deaths from errors, and are a result of poorly designed systems, which often lack independent redundancies.
- Medication errors are one of the leading causes of injury to hospital patients, chart reviews reveal that over half of all hospital medication errors occur at the interfaces of care.
- Up to 60% of patients will have at least 1 discrepancy in their admission medication history.

We need your help. An effective process:

- Collects an accurate and complete list of each patient’s medications on admission.
- Compares the physician’s admission orders to that list.
- Resolving any discrepancies that may exist between the two medication lists before an adverse drug event (ADE) can occur.
- Reconciles medication at each transition point, admission, transfers and discharges.

For more information, contact ____________________________.
Newsletter

[Name of hospital] is working toward medication error reduction.

[Name of hospital] has signed onto a new initiative to improve care and quality of life for their patients. The purpose of the (enter specific name here) North Carolina Medication Reconciliation project is to improve patient safety related to medication errors through the redesign of systems of care and development of a standardized process. A modified collaborative was started on (enter date here) with the North Carolina Center for Hospital Quality and Patient Safety and The Carolinas Center for Medical Excellence, (enter any additional partners here) in (enter town here), NC. This modified collaborative will finish in (enter date here).

Studies involving US hospitals have reported incidence rates of adverse drug events (ADEs) range from 2 to 7 per 100 admissions. Preventable adverse drug events are associated with one out of five injuries or deaths from errors, and are a result of poorly designed systems, which often lack independent redundancies. Chart reviews reveal that over half of all hospital medication errors occur at the interfaces of care and 60% of patients will have at least one discrepancy in their admission medication history. Research has shown that effective medication reconciliation process can significantly reduce the number of medication discrepancies. An effective process includes:

1. Collection of accurate and complete list of each patient’s medications on admission.
2. Comparison of the physician’s admission orders to that list.
3. Resolution of any discrepancies that may exist between the two medication lists before an (ADE) can occur.
4. Reconciliation medication at each transition point, admission, transfers and discharges.

"In order to be successful, quality improvement must be a facility-wide effort, involving all levels of our staff," said (name of hospital CEO or CNO). "The quality improvement concept involves more than just a few people; it’s a philosophy that reflects what our patients and their families can expect when placing their trust in us."

For more information, contact (name of project leader).

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Improved Medication Management: Med Rec as the Safety Net

Medication Reconciliation Presentation
General Hospital
100 Hospital Avenue
Hospital, USA

Medication Reconciliation

- What is the problem?
- What is the solution?
- How do we do this?
Medication Reconciliation Presentation

What is the Problem?

Adverse Drug Events (ADE)

- Incidence rates of adverse drug events (ADEs) range from 2 to 7 per 100 admissions. (Kaushal & Bates)
- Preventable adverse drug events are associated with one out of five injuries or deaths from errors, and are a result of poorly designed systems, which often lack independent redundancies. (Pronovost)
- Medication errors are one of the leading causes of injury to hospital patients. Chart reviews reveal that over half of all hospital medication errors occur at the interfaces of care. (Rozich)
- Up to 60% of patients will have at least 1 discrepancy in their admission medication history. (Cornish)
ADE at Care Transitions
Causal Components

- No clear process owner
- No standardized process
- No accurate sources of information
- No consistent place to record information
- Increasing elderly population, with increased medication use

What is the Solution?
Medication Reconciliation Presentation

Improved Medication Management

Medication Reconciliation

Med Rec: The Three-Step Process

1. Collect an accurate medication history
2. Compare this history to the physician orders (at all transition points - admission, transfer, discharge)
3. Resolve any discrepancies between the lists (on transfer and discharge the medication history + the current medication list (MAR) I compared to the physician orders)
Medication Reconciliation

Med Rec: The Process Owners

- Depends on your available resources
- Involves pharmacy and nursing
- Must involve physicians (physician orders)
- Should always involve the patient if patient is able
- Must assign responsibility for each step

Medication Reconciliation Outcomes

- A series of interventions including medication reconciliation introduced over a seven month period successfully decreased the rate of medication errors by 70% and adverse drug events by 15%. (Whittington)

- Utilization of pharmacy technicians to initiate the reconciling process by obtaining medication histories for a scheduled surgical population reduce potential adverse drug events by 80% within three months of implementation. (Michels)

(IHI, www.ihi.org)
Medication Reconciliation

- A JCAHO 2006 and 2007 National Patient Safety Goal
- IHI 100k Lives Campaign initiative
- The RIGHT thing to do

Incremental Work

- Have we not always collected a medication history?
- Have we not always been concerned about drug interactions and therapeutic duplications?
- Have we not provided medication discharge counseling?
- **If not, why not?**
  
  (OSF St. Francis Medical Center, D. Taylor)
How Do We Do This?

The Model for Improvement

Plan-Do-Study-Act
“PDSA”
Medication Reconciliation Presentation

The Model for Improvement

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in improvement?

Act | Plan
---|---
Study | Do

Create a Project Team

Team members
- Quality Improvement Professional
- Pharmacist(s)
- MD Champion(s)
- Staff Nurse(s)
- Unit Manager(s)
Project Resources

- Project Team
  - Project Manager ~ 8 to 10 hrs/wk for first six wks
    ~ 24 to 36 hrs/month for remainder of project
  - Team Members ~ 1 to 4 hrs/wk for first six wks
    (depending on role)
    ~ 4 to 12 hrs/month for remainder of project

- Direct Staff
  - Dependent on number of pilot revisions, service variations and size of hospital

The "RIGHT THING TO DO" Engagement

Impacts all four business quadrants
- Product/service/quality
- Financial
- Customer satisfaction
- Workload (eventually)
“This Is Hard Work”

- Asking people to change what they have been doing
- Trying to develop the all-perfect, all-encompassing process
- Trying to use a form to do something that will not fit into our system
- Trying to get staff to do something that they may consider as not safe or comfortable

(OSF Saint Francis Medical Center, D. Taylor)

What If We Called It...

- Improved communication?
- Better handoffs?
- Providing optimum care?
- Improved medication management?
- What we should have been doing all along?

(OSF Saint Francis Medical Center, D. Taylor)
Support from all needed

- Leadership
- Physicians
- Pharmacists
- Nursing Staff
- Patients

Medication Reconciliation Project Team will:

- Communicate Project Milestones
- Share Project Data
- Share Project Success Stories
Leadership Support

- We realize that there are a lot of competing priorities
- We realize that resources are limited
- We realize that balancing customer, employee, financial and quality/product/service is challenging

Leadership Support Requested

- Resources for Project Team (time to do project, communication and education tools)
- Communication of Initiative (to staff, Board)
- Prioritization Improvement Project
- Endorsement, back-up of initiative
Physician Support

- We realize you are busy and have limited time.
- We will do our best to minimize added work.
- Medication Reconciliation is not to question your ability to write medication orders.
- Medication Reconciliation a safety net to assure in our complex systems that your patients receive the medications that they are intended to receive.

Physician Support Requested

- Familiarize yourself with the medication reconciliation process.
- Assist in development and implementation of the process
- Assist in development and approval of new forms
- Endorse the Initiative.
- Give us constructive feedback so that we make things better for your patients.
Medication Reconciliation Presentation

Nursing and Pharmacy

- We realize you are busy and have limited time.
- We will do our best to minimize added work.
- We realize that you have collected this information in the past, yet it was not consistently utilized by the team to provide better care for your patients.
- We realize that coming up with an accurate list is difficult.
- Medication Reconciliation is a safety net to assure in our complex systems that your patients receive the medications that they are intended to receive.

Staff Support Requested

- Familiarize yourself with the medication reconciliation process.
- Volunteer to Participate in project teams.
- Help design the process.
- Help design the forms.
- Endorse Initiative.
- Provide feedback.
"Reconciliation Is A Major Step In The Provision Of Safe And Effective Drug Therapy"

Expanding Pharmacy's Reach Across The Care Continuum
Rita Shane And William A. Gouveia

(OSF Saint Francis Medical Center, D. Taylor)
4 Performance Improvement
You have now read about the problem (adverse drug events), the solution (medication reconciliation), medication reconciliation process specific details, communication strategies and planning and managing your project. It is now time for the project team to determine the unit or floor to start the performance improvement project. The unit or floor can be determined by your assessment, some baseline data collection, and/or by the receptiveness of the unit/floor staff to change.

The Model for Improvement was first published in 1992 by Langley, Nolan, et al, in “The Improvement Guide: A Practical Approach to Enhancing Organizational Performance.” This model provides a framework for developing, testing and implementing changes in the way we do things. It is a simple approach that is highly effective and reduces the risk associated with changing something we do by utilizing small tests of change. The model is also referred to as rapid cycle of change.

The model consists of two parts the “thinking” part and the “doing” part.

The “thinking” part consists of three questions:
1. What are we trying to accomplish? (GOAL)
2. How will we know that change is an improvement? (DATA)
3. What changes can we make that will result in improvement? (DO SOMETHING DIFFERENT)

What are we trying to accomplish? GOAL
The goal should be specific and measurable; for example, reduce the number of unreconciled medications at transfer by 25% in the next two months. After setting the goal, you will review and clarify the current processes and decide which test population to use to initiate the test cycle. For example, this could be the next 5 to 10 patients admitted to the pre-selected floor, or maybe the next 5 to 10 patients of Dr. Smith. Additionally, you will need to assign responsibility for facilitating the test of change, evaluating the test of change and reviewing the charts to gather data on the changes.

Are we making a difference? DATA
To understand if you are making an improvement it is necessary to collect data. Data includes chart audits and information obtained from those that were involved in the “doing” part or the PDSA. At the end of this chapter, there is a detail data section that will explain the data we are collecting for this project.

What are the possible ideas for change? DO SOMETHING DIFFERENT
By brainstorming, the team will determine possible change ideas to eliminate medication discrepancies between the medication histories and current medication list and the admission, transfer or discharge orders. One change idea to test will be identified. The detailed plan for the test, including the day, time, the location and the people involved, will be planned.

The second part of the model for improvement, the “doing” part, consists of four components, plan, do, study, act, or PDSA. We refer to these cycles as test cycles.
Plan
The plan should include the objective, any predictions, the plan to carry out the cycle (who, what, where, when) and the plan for data collection. Data collection will be discussed in detail at the end of this chapter. The detailed plan for the test of change should be shared with all involved in the process and the plan will be executed.

Do
This is actually carrying out the plan, documenting the observations and recording the data. Obtaining feedback from all involved in the test of change will determine the success of the new process (elimination of discrepancies) or if additional tests of change need to be explored.

Study
Analyze the data by comparing it to the predictions and summarize what was learned.

Act
You will want to re-run the test of change with a new or modified change idea if the evaluation of your first test of change reveals problems. These tests may need to be re-run more than once as you improve your process to eliminate discrepancies between the medication histories or current lists and the admission, transfer or discharge orders. Once you determine that your improved process is effective, the new process will need to be tested with an expanded population. For example, expand the test beyond Dr. Smith’s patients to all the patients admitted on the surgical floor.

Data Collection - Measuring Your Medication Reconciliation Success
You will need to measure data before you start your performance improvement cycles, baseline data, and then continue measuring as you refine the process with additional tests of change. This will help you understand the impact of your changes and determine if additional changes are needed.

Measuring your medication reconciliation success requires a review of charts to identify discrepancies. Discrepancies in medication orders between the outpatient and inpatient settings and the admission orders, between the medication history and current medication list and the intra-hospital transfer orders, or between the medication history and current medication list and the discharge orders, need to be measured. A clear definition of a discrepancy or unreconciled medications is necessary.

Data to Collect
The goal of your data collection is to be robust enough to demonstrate if improvements have been obtained, yet simple enough to collect so it is not burdensome. Keeping this in mind, data points for this Tool Kit have been kept to a minimum.

You will need to collect initial baseline data and ongoing data throughout the project. The data you will need to collect each month are an identifier (the review number and the patient/record number), the total number of medications on the chart, the number of unreconciled medications, and if there was evidence of reconciliation. This data are collected on a tally sheet located at the end of this section. Simple calculations are used to determine the process and outcome measures. This project has been set up for you to enter your monthly tallies into a secure on-line data submission form that will automatically calculate your measures. Alternatively, after the completion of the project you can tally your monthly data and then calculate the measures manually using the sheet at the end of this chapter.

Unreconciled Medication or Medication Discrepancy
Compare the medication orders to any available information about the medication that the patient was taking. Any discrepancies between the medication orders and the medication lists (history or MAR) should be included as an error. Note some clinical judgment is required. For example, it is not an error if the patient is admitted for low blood sugar and insulin orders are discontinued.
**Process Measure**

Changes in processes are necessary to improve outcomes. The medication reconciliation process measure used in this toolkit is the percent of admissions with documentation of reconciliation. The process measure can apply to the other transition points such as transfer or discharge by collecting data for each of those processes.

**PROCESS MEASURE**

Percent of Reconciled Admissions = \( \frac{\text{Total # of Records Reviewed with Evidence of Reconciliation}}{\text{Total Number of Records Reviewed}} \)

**Outcome Measures**

You need to understand if the changes that you have made to your process are impacting the number of medications reconciled at transition points. To do so, you will need to collect and analyze outcome data. There are three different outcome measures that you will collect: percent of unreconciled medications, unreconciled medications per 100 admissions, and percent of admissions with unreconciled medications. Again, these outcome measures can be altered to address the different transition points by substituting transfer or discharge for admission.

**OUTCOME MEASURES**

1. Percent of Unreconciled Medications
   \[
   \frac{\text{Number of Unreconciled Medications on Reviewed Records}}{\text{Total Number of Medications on Reviewed Records}}
   \]

2. Percent of Admissions with Any Unreconciled Medications
   \[
   \frac{\text{Total Number of Records Reviewed with any Unreconciled Medications}}{\text{Total Number of Records Reviewed}}
   \]

3. Unreconciled Medications per 100 Admissions
   \[
   \frac{\text{Number of Unreconciled Medications on Reviewed Records} \times 100}{\text{Total Number of Records Reviewed}}
   \]

**Performance Improvement Tools**

- PDSA Worksheet (performance improvement)
- Medication Reconciliation Data Collection Form (data collection)
- Medication Reconciliation Measure Calculation Form (data collection)
### PDSA

<table>
<thead>
<tr>
<th>Model for Improvement</th>
<th>Team Name: ____________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDSA Planning Worksheet</td>
<td>Cycle: __________________ Date: __________</td>
</tr>
</tbody>
</table>

#### PLAN
Objective for this cycle:

Questions:

Predictions:

Plan for change or test: who, what, when, where:

Plan for collection of data: who, what, when, where:

#### DO
Carry out the change or test. Collect data and begin analysis. Describe observations, problems encountered, and special circumstances.

#### STUDY
Complete analysis of data. Summarize what was learned.

#### ACT
Are we ready to make a change? Plan for the next cycle.
# Medication Reconciliation Data Collection Form

Unreconciled Medications for Month / Year ______/______

Care Transition Process Data, circle one: Admission  Transfer  Discharge

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Number</td>
<td>Patient / Record Number</td>
<td>Number of Medications on Chart</td>
<td>Number of Unreconciled Medications</td>
<td>Evidence of Reconciliation (Yes or No)</td>
</tr>
<tr>
<td>1</td>
<td></td>
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<td></td>
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<tr>
<td>2</td>
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<td>20</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Records Reviewed</td>
<td>Total Number of Records Reviewed with any Unreconciled Medications</td>
<td>Total Number of Medications on Reviewed Records</td>
<td>Total Number of Unreconciled Medications on Reviewed Records</td>
<td>Total Number of Reviewed Records with Evidence of Reconciliation</td>
</tr>
<tr>
<td>Number of last record reviewed (column A)</td>
<td>Count the number of rows where column D is greater than 0</td>
<td>Add column C together</td>
<td>Add column D together</td>
<td>Count of “Yes’s” in column E</td>
</tr>
</tbody>
</table>

Prepared By: ___________________________  Date: ____________

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Medication Reconciliation Measure Calculation Form

<table>
<thead>
<tr>
<th>Measures to Track</th>
<th>Directions</th>
<th>Calculation</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process 1:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of Reconciled Admissions</td>
<td>J / F</td>
<td>____ / ____</td>
<td>____</td>
</tr>
<tr>
<td><strong>Outcome 1:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of Unreconciled Medications</td>
<td>I / H</td>
<td>____ / ____</td>
<td>____</td>
</tr>
<tr>
<td><strong>Outcome 2:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of Admissions with Unreconciled Medications</td>
<td>G / F</td>
<td>____ / ____</td>
<td>____</td>
</tr>
<tr>
<td><strong>Outcome 3:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unreconciled Medications per 100 Admissions</td>
<td>((I / F) \times 100)</td>
<td>((____ / ____ \times 100)</td>
<td>____</td>
</tr>
</tbody>
</table>

Prepared By: ____________________________ Date: __________

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5 Spread and Formalize
Spreading and formalizing your changes is an important part of implementation of a new process. It is necessary to achieve an overall improvement with medication reconciliation. Medication reconciliation cannot be done in isolation.

As your patient flows through your hospital, the reconciliation that occurred on admission will be used in transfer reconciliation and, likewise, in discharge reconciliation. To achieve successful communication of the patient's medications at transition points, it is necessary to spread the process throughout the organization. To ensure consistency, it is necessary to formalize the process.

**Spreading**

After you have made changes to your process and tested and measured the changes to ensure improvements have yielded an increase in reconciled medications, you are ready to spread your refined process.

Spreading your process to different areas of the hospital will require a plan. The project team should decide the order in which to spread, who will be responsible for the spread, and the actual dates/times for implementation. Spread should occur on similar units first. As you introduce the process to the new unit or floor, you will need to educate the staff and solicit feedback. Below is an example of a typical hospital spread plan.

<table>
<thead>
<tr>
<th>Unit Floor</th>
<th># Bed</th>
<th>Similar Unit</th>
<th>Service Type</th>
<th>Nurses Commonly Float</th>
<th>#1 Admitting MD</th>
<th>Pharmacist</th>
<th>Nurse Mgr</th>
<th>Spread Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 East</td>
<td>24</td>
<td>3 East</td>
<td>Medicine</td>
<td>3 East</td>
<td>Brown</td>
<td>Hall</td>
<td>Harvey</td>
<td>Pilot</td>
</tr>
<tr>
<td>3 West</td>
<td>32</td>
<td>3 East</td>
<td>Surgery</td>
<td>4 East + 3 East</td>
<td>Smith</td>
<td>Banks</td>
<td>Roberts</td>
<td>2</td>
</tr>
<tr>
<td>CCU</td>
<td>8</td>
<td>SICU</td>
<td>ICU</td>
<td>SICU</td>
<td>Doe</td>
<td>Pill</td>
<td>Nurse</td>
<td>4</td>
</tr>
<tr>
<td>5 East</td>
<td>32</td>
<td>4 East</td>
<td>Pediatrics</td>
<td>none</td>
<td>Goss</td>
<td>Peters</td>
<td>Scott</td>
<td>5</td>
</tr>
<tr>
<td>3 East</td>
<td>24</td>
<td>4 East</td>
<td>Med/Surg</td>
<td>4 East</td>
<td>Brown</td>
<td>Hall</td>
<td>Williams</td>
<td>1</td>
</tr>
<tr>
<td>SICU</td>
<td>8</td>
<td>CCU</td>
<td>ICU</td>
<td>CCU</td>
<td>Smith</td>
<td>Pill</td>
<td>Edwards</td>
<td>3</td>
</tr>
</tbody>
</table>

As you introduce the process to the new unit or floor, you will need to educate the staff and solicit feedback. At the end of this chapter, the Spread Process Checklist and Medication Reconciliation Process Inventory will assist you with planning your spread.
**Formalizing**

The final step to ensure that your process will be consistently and widely used is to write or revise your existing policies and procedures and removing all evidence of old processes. Your processes should outline the medication reconciliation process in your organization and the roles and responsibilities of staff. You will also need to provide ongoing education of the process for new members of the staff and hold existing staff accountable for the new process by incorporating this into yearly competency training and performance evaluations. Lastly, you will need to continue to monitor the effectiveness of the new process. These steps will assist you in formalizing your process. At the end of this section there is an example of a Formalizing the Process Checklist and Medication Reconciliation Procedure(s).

---

**Communicate Project to Others**

**Spreading**
- Meet with leadership and medical executive committee
- Meet with departments affected the most
- Send newsletters, post posters

**Formalizing**
- Post permanent reminders of the new process
- Communicate success of the new process

---

**Spreading and Formalizing Changes Tools**

- Spreading Checklist
- Hospital Implementation Plan Worksheet
- Formalizing Checklist
- Example Procedure for Documentation Form
- Example Documentation Form
- Example Procedure for Order Form
- Example Order Form
- Patient Health Snapshot (Patient Care Card)
Spread Process Check List

Spread process to similar types of nursing units/floors. Request an evaluation of the process.

☐ Educate widely on findings of test (e.g., display graphs from the monitoring tool).

<table>
<thead>
<tr>
<th>✓ Check</th>
<th>TASK</th>
<th>PERSON RESPONSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Face-to-face meeting with administrator</td>
<td></td>
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<tr>
<td></td>
<td>Face-to-face meeting with physician champion</td>
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<tr>
<td></td>
<td>Schedule meetings with large groups (physicians, departments most</td>
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<tr>
<td></td>
<td>affected)</td>
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<tr>
<td></td>
<td>Report to board/executive committee</td>
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<tr>
<td></td>
<td>Team members report back to respective groups and committees</td>
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</tr>
<tr>
<td></td>
<td>Update posters</td>
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<tr>
<td></td>
<td>Send newsletter update hospital wide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elicit ongoing feedback from all staff affected</td>
<td></td>
</tr>
</tbody>
</table>
Spread Process Check List

☐ Set start date for educating and initiating the new process to additional nursing units / floors.

<table>
<thead>
<tr>
<th>DATE</th>
<th>NURSING UNIT/FLOOR</th>
<th>PERSON RESPONSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Success Tip: Remember to Continue to Monitor!

After project completion, facilities are encouraged to periodically monitor the progress of implemented interventions. Successful and sustainable interventions depend on constant evaluation of your process. A current quality improvement or safety committee that meets regularly could assume monitoring duties after the project has ended.

Adapted from Medication Safety: Focus Reconciliation Tool Kit. Reproduced with permission of The Carolinas Center for Medical Excellence © October 2005
<table>
<thead>
<tr>
<th>Unit Floor</th>
<th># Bed</th>
<th>Similar Unit</th>
<th>Service Type</th>
<th>Nurses Commonly Float</th>
<th># 1 Admitting MD</th>
<th>Pharmacist</th>
<th>Nurse Mgr</th>
<th>Spread Order</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Formalize New Process of Care

- Write or revise policies/procedures.
- Remove all evidence of old processes. Make it difficult to do things the 'old way'.
- Make the new standard part of performance evaluations.
- Post permanent reminders of the new process.
- Continue monitoring effectiveness of the process.
- Communicate success of new process.
- Reward successes, efforts of staff:

<table>
<thead>
<tr>
<th>✓ Check</th>
<th>TASK</th>
<th>PERSON RESPONSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Food/party</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recogriton of key areas and staff</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Token gifts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Letters to supervisors/administration</td>
<td></td>
</tr>
</tbody>
</table>
EXAMPLE: Medication Reconciliation DOCUMENTATION Form

EXAMPLE Policy/Procedure: Medication Reconciliation DOCUMENTATION Form

NOTE: This is a sample only; your unit or hospital processes are unique. This requires testing of processes.

Place Your Hospital Information Here

Manual:__________________
Section:__________________
Date Written:_____________
Last Review Date:__________

TITLE: MEDICATION RECONCILIATION DOCUMENTATION

PURPOSE: Medication Reconciliation is intended to eliminate prescribing medication errors at care transitions (admission, intra-hospital transfers, discharge) by generating a complete and accurate list of patient medications and communicating that list to the next provider of care.

SCOPE: Medication Reconciliation will occur with all patients in our hospital across the care continuum.

PROCEDURE: The medication reconciliation process will involve the patient (patient’s family), the nurse, physician and the pharmacist.

Detailed Guidelines for Medication Reconciliation:
The medication reconciliation process will occur for all outpatient status (ED) and inpatient status patients. The Medication Reconciliation Documentation Form will be used to reconcile medications at care transitions. Medications that require documentation of reconciliation include:

<table>
<thead>
<tr>
<th>Prescriptions</th>
<th>Radioactive Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Medications</td>
<td>Respiratory Therapy Related Materials</td>
</tr>
<tr>
<td>Vitamins</td>
<td>Parental Nutrition</td>
</tr>
<tr>
<td>Nutriceuticals</td>
<td>Blood Derivatives</td>
</tr>
<tr>
<td>Over-the-Counter Drugs</td>
<td>Intravenous Solutions (plain or with additives)</td>
</tr>
<tr>
<td>Diagnostic and Contrast Agents</td>
<td>Any Product Designated by the FDA as a Drug</td>
</tr>
<tr>
<td>Vaccines</td>
<td></td>
</tr>
</tbody>
</table>

All medication reconciliations should minimally include the medication name, dose, route and frequency.

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EXAMPLE: Medication Reconciliation DOCUMENTATION Form

Outpatient (ED):
The emergency room nurse will record the patients home medication list on the Medication Reconciliation Documentation Form and place this in the medical record in the physician order section. If the patient is admitted the admission medication orders will also be written on the Medication Reconciliation Documentation Form. Reconciliation of the two medication lists will be done by the emergency room nurse if the patient stays in the emergency room and receives ordered medications prior to bed assignment. Otherwise the reconciliation is done by the admitting floor nurse.

Admissions:
A Medication Reconciliation Documentation Form will be completed within 24 hours of admission to document that a comparison between the admission medication history and the admission medication orders has occurred. The medication list and the orders will be reconciled and discrepancies resolved. The nurse, physician and pharmacist will each be involved in the medication reconciliation process.

- **Admitting Nurse:** The admitting nurse will record a medication history from the patient/ patient’s family member, or patient medication list on the Medication Reconciliation Documentation Form and sign, date and time the entry. (This does not need to be re-documented on the admission history form, write “see medication reconciliation order sheet” on the admission form.)

  The nurse will compare the patient’s admission medication orders to the medication history. If there is no discrepancy the nurse will check “NO” in the “Discrepancy” column on the Medication Reconciliation Documentation Form. If there is a discrepancy between the medication history and the physician medication orders the nurse will check “YES” column in the “Discrepancy” column on Medication Reconciliation Documentation Form and describe the discrepancy under “Discrepancy Comments.”

  The nurse will notify the physician to resolve the discrepancies and document the physician response under the column “Documentation of Physician Response”. The nurse upon reconciling each medication and documenting the physician response will initial the row and sign her name, date and time on the bottom of the form.

- **Admitting Physician:** The admitting physician will write the admission medication orders after reviewing the medication history.

  If the nurse finds a discrepancy between the physician order and the medication history the physician will be notified to resolve those discrepancies with a clarifying medication order.

- **Pharmacist:** The pharmacist will review the completed Medication Reconciliation Documentation Form and will notify the physician if any additional discrepancies exist. A Medication Administration Record (MAR) will be generated by pharmacy from the reconciled medication order list once it has been verified. The pharmacist will sign and date the form indicating that he has reviewed the reconciled medication list.

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EXAMPLE: Medication Reconciliation DOCUMENTATION Form

Transfers:
A Medication Reconciliation Documentation Form, will be completed within 24 hours of the patient transfer to document current medication list (MAR), transfer medication orders and transfer medication reconciliation.

- **Transferring Nurse:** The transferring nurse will record from the MAR the patient’s current medication list (medication name, dose, route, frequency) on the Medication Reconciliation Documentation Form.

- **Accepting Physician:** The accepting physician will write the transfer medication orders after reviewing the MAR and the medication history that was collected on admission. If the accepting nurse finds a discrepancy between the transfer medication order and the MAR and the medication history the accepting physician will be notified to resolve those discrepancies with a clarifying medication order.

- **Accepting Nurse:** The accepting nurse will document the transferring medication orders on the Medication Reconciliation Documentation Form and reconcile them by comparing MAR (current medication list) that was recorded by the transferring nurse and the medication history.

If the accepting nurse finds that the patient’s medications are unchanged from the transfer medication history (Medication Administration Record- MAR) and the physician medication orders, the nurse will check “NO” in the “Discrepancy” column on the Medication Reconciliation Documentation Form. If there is a discrepancy between the medication history and the physician medication orders the nurse will check “YES” column in the “Discrepancy” column on Medication Reconciliation Documentation Form and describe the discrepancy under “Discrepancy Comments.”

The accepting nurse will notify the accepting physician to resolve the discrepancies and document the physician response under the column “Documentation of Physician Response”. The nurse upon reconciling each medication and documenting the physician response will initial the row and sign her name, date and time on the bottom of the form.

- **Pharmacist:** The pharmacist will review the completed Medication Reconciliation Documentation Form and will notify the physician if any additional discrepancies exist. A Medication Administration Record (MAR) will be generated by pharmacy from the reconciled medication order list once it has been verified. The pharmacist will sign and date the form indicating that he has reviewed the reconciled medication list.

Discharges:
A Medication Reconciliation Documentation Form will be completed at the time of discharge to document and communicate the patient’s discharge medication list. The list will contain:
1. Medications from the admission medication history list
2. Current medication list (MAR)
3. Discharge medication orders
4. Discharge medication reconciliation

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EXAMPLE: Medication Reconciliation DOCUMENTATION Form

- **Discharging Physician:** The discharging physician will write the discharge medication orders on a physician order.

  If the discharging nurse finds a discrepancy between the admission medication history list, the MAR (current medication list) and the discharge medication orders the discharging physician will be notified to resolve those discrepancies with a clarifying medication order.

- **Discharging Nurse:** The discharging nurse will compare the discharge medication orders with the current list of medications on the medication administration record (MAR) and will review these with the medication history list that was obtained on admission.

  The nurse will document on the Medication Reconciliation Documentation Form any additional medications that are appear on the MAR that the physician did not order on discharge. The nurse will check “YES” in the “Discrepancy” column on the Medication Reconciliation Documentation Form for all the additional medications that were recorded and describe the discrepancy under “Discrepancy Comments.”

  The discharging nurse will notify the discharging physician to resolve the discrepancies and document the physician response under the column “Documentation of Physician Response”. The nurse upon reconciling each medication and documenting the physician response will initial the row and sign her name, date and time on the bottom of the form.

- **Discharging Pharmacist:** The discharge pharmacist will compare the reconciled admission medication list to the discharge list on the Medication Reconciliation Documentation Form. The pharmacist will document any additional medications that appear on the reconciled admission medication list on the Medication Reconciliation Documentation Form.

  The pharmacist will note discrepancies by checking “YES” in the “Discrepancy” column on the Medication Reconciliation Documentation Form for all the additional medications that were recorded and describe the discrepancy under “Discrepancy Comments.” The pharmacist will notify the physician of the discrepancies that exist to clarify the orders.

  The pharmacist will record the complete reconciled discharge list in the hospitals medication system and will save this as an archive file. The pharmacist will generate a “Patient’s Snap – Shot” for the patient to retain as their medication list. A copy of the complete Medication Reconciliation Documentation Form will be placed in the patient’s medical record in the order section.

- **Discharging Nurse:** The nurse will educate the patient on the medications that they will be taking once discharged and give the patient a copy of the “Patient’s Snap – Shot” from the pharmacist containing the medication list.

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Medication Reconciliation Documentation Form

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Route</th>
<th>Freq</th>
<th>Discrepancy</th>
<th>Discrepancy comments (i.e. wrong dose, not ordered)</th>
<th>Initial</th>
<th>Documentation of Physician Response</th>
<th>Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td>Ordered as written</td>
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<td>No</td>
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<td>Discontinued</td>
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<td></td>
<td>Changed use order sheet</td>
<td></td>
</tr>
</tbody>
</table>

Initials  Signature  Date  Time  Initials  Signature  Date  Time  Initials  Signature  Date  Time  Initials  Signature  Date  Time

Instructions

This medication reconciliation documentation form is to be completed at care transitions (admission, transfer or discharge). It can be used for multiple care transitions by drawing a line between transitions (entries). Upon completion, place in front of chart for the patient’s entire hospital stay. This is NOT a Physician Order Form. This is a documentation record for medication reconciliation.

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EXAMPLE: Medication Reconciliation ORDER Form

EXAMPLE Policy/Procedure: Medication Reconciliation ORDER Form
NOTE: This is a sample only; your unit or hospital processes are unique. This requires testing of processes.

Place Your Hospital Information Here

<table>
<thead>
<tr>
<th>Manual:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Section:</td>
<td></td>
</tr>
<tr>
<td>Date Written:</td>
<td></td>
</tr>
<tr>
<td>Last Review Date:</td>
<td></td>
</tr>
</tbody>
</table>

TITLE: MEDICATION RECONCILIATION ORDER

PURPOSE: Medication Reconciliation is intended to eliminate prescribing medication errors at care transitions (admission, intra-hospital transfers, discharge) by generating a complete and accurate list of patient medications and communicating that list to the next provider of care.

SCOPE: Medication Reconciliation will occur with all patients in our hospital across the care continuum.

PROCEDURE: The medication reconciliation process will involve the patient (patient's family), the nurse, physician and the pharmacist.

Detailed Guidelines for Medication Reconciliation:
The medication reconciliation process will occur for all outpatient status (ED) and inpatient status patients. A one time, separate, Medication Reconciliation Order Form will be used to reconcile and order medications at care transitions. Medications that require documentation of reconciliation include:

<table>
<thead>
<tr>
<th>Prescription Medications</th>
<th>Radioactive Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Medications</td>
<td>Respiratory Therapy Related Materials</td>
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<td>Over-the-Counter Drugs</td>
<td>Intravenous Solutions (plain or with additives)</td>
</tr>
<tr>
<td>Diagnostic and Contrast Agents</td>
<td>Any Product Designated by the FDA as a Drug</td>
</tr>
<tr>
<td>Vaccines</td>
<td></td>
</tr>
</tbody>
</table>

All medication histories and orders should minimally include the medication name, dose, route and frequency.
EXAMPLE: Medication Reconciliation ORDER Form

Outpatient (ED):

The emergency room nurse will record the patients home medication list on the Medication Reconciliation Order Form and place this in the medical record in the physician order section. If the patient is admitted the admission medication orders will also be written on the Medication Reconciliation Order Form. Reconciliation of the two medication lists will be done by the emergency room nurse if the patient stays in the emergency room and receives ordered medications prior to bed assignment. Otherwise the reconciliation is done by the admitting floor nurse.

Admissions:

A Medication Reconciliation Order Form, a one time order sheet will be completed within 24 hours of admission to document admission medication history, admission medication orders and admission medication reconciliation. The nurse, physician and pharmacist will each be involved in the medication reconciliation process.

- **Admitting Nurse**: The admitting nurse will record a medication history from the patient/ patient’s family member, or patient medication list on the Medication Reconciliation Order Form and sign, date and time the entry. (This does not need to be re-documented on the admission history form, write “see medication reconciliation order sheet” on the admission form.)

  If the patient’s medications are unchanged from the admission medication history and the physician medication orders, the nurse will check “NO” in the “Discrepancy” column on the Medication Reconciliation Order Form. If there is a discrepancy between the medication history and the physician medication orders the nurse will check “YES” column in the “Discrepancy” column on Medication Reconciliation Order Form and describe the discrepancy under “Discrepancy Comments.”

- **Admitting Physician**: The admitting physician will record the admission medication orders on the Medication Reconciliation Order Form. To order the physician will check either “Order as Written” if he/she wants to order the medication that is written on that row. The physician will check “Do Not Order” if he does not wish to order the medication on that row. The physician will check “Change order sheet” column if he/she does not wish to order the medication on that row and wants to order another medication or dose, route, frequency. Upon completion of each row the physician will sign date and time the order.

- **Admitting Nurse and Physician**: Upon completion of the form the last provider (nurse or physician) is responsible for placing the form in the front of the Physician Order Section of the medical record.

- **Pharmacist**: The pharmacist will review the completed Medication Reconciliation Order Form and will notify the physician if any additional discrepancies exist. A Medication Administration Record (MAR) will be generated by pharmacy from the reconciled medication order list once it has been verified.
EXAMPLE: Medication Reconciliation ORDER Form

Transfers:

A Medication Reconciliation Order Form, a one time order sheet, will be completed on transfer to document current medication list (MAR), transfer medication orders and transfer medication reconciliation.

- **Transferring Nurse:** The transferring nurse will record from the MAR the patient’s current medication list (medication name, dose, route, frequency) on the Medication Reconciliation Order Form.

- **Accepting Physician:** The accepting physician will write the transfer medication orders on the Medication Reconciliation Order Form. The physician will check either “Order as Written” if he wants to order the medication that is written on that row. The physician will check “Do Not Order” if he does not wish to order the medication on that row. The physician will check “Change use order sheet” column if he/she does not wish to order the medication on that row and wants to order another medication or dose, route, frequency.

- **Accepting Nurse:** The accepting nurse will reconcile the medications. The accepting nurse will compare the transfer medication orders with the current list of medications on the medication administration record (MAR) and with the admitting medication history list. If the patient’s medications are unchanged the nurse will check “NO” in the “Discrepancy” column on the Medication Reconciliation Order Form. If there is a discrepancy between the medication history and the physician medication orders the nurse will check “YES” column in the “Discrepancy” column on Medication Reconciliation Order Form and describe the discrepancy under “Discrepancy Comments.”

- **Pharmacist:** The pharmacist will review the completed Medication Reconciliation Order Form and will notify the physician if any additional discrepancies exist. A Medication Administration Record (MAR) will be generated by pharmacy from the reconciled medication order list once it has been verified.

- **Accepting Nurse and Physician:** Upon completion of the form the last provider (nurse or physician) is responsible for placing the form in the front of the Physician Order Section of the medical record

Discharges:

A Medication Reconciliation Order Form, a one time order sheet, will be completed on discharge to document and communicate the patient’s discharge medication list. The list will contain:

1. Medications from the admission medication history list
2. Current medication list (MAR)
3. Discharge medication orders
4. Discharge medication reconciliation
EXAMPLE: Medication Reconciliation ORDER Form

- **Discharging Physician:** The discharging physician will write the discharge medication orders on the *Medication Reconciliation Order Form.*

- **Discharging Nurse:** The discharging nurse will compare the discharge medication orders with the current list of medications on the medication administration record (MAR) and with the admitting medication history list. The nurse will document on the *Medication Reconciliation Order Form* any additional medications that appear on the MAR that the physician did not order on discharge. The nurse will check “YES” in the “Discrepancy” column on the *Medication Reconciliation Order Form* for all the additional medications that were recorded and describe the discrepancy under “Discrepancy Comments.” The nurse will notify the physician of the discrepancies that exist to clarify the orders.

- **Discharging Pharmacist:** The discharge pharmacist will compare the reconciled admission medication list to the *Medication Reconciliation Order Form.* The pharmacist will document any additional medications that appear on the reconciled admission medication list on the *Medication Reconciliation Order Form.* The pharmacist will note discrepancies by checking “YES” in the “Discrepancy” column on the *Medication Reconciliation Order Form* for all the additional medications that were recorded and describe the discrepancy under “Discrepancy Comments.” The pharmacist will notify the physician of the discrepancies that exist to clarify the orders. The pharmacist will record the complete reconciled discharge list in the hospital’s medication system and will save this as an archive file. The pharmacist will generate a “Patient’s Snap – Shot” for the patient to retain as their medication list. A copy of the complete *Medication Reconciliation Order Form* will be placed in the patient’s medical record in the order section.

- **Discharging Nurse:** The nurse will educate the patient on the medications that they will be taking once discharged and give the patient a copy of the “Patient’s Snap – Shot” from the pharmacist containing the medication list.
### Medication Reconciliation Order Form

**Admission** | **Transfer** | **Discharge**
---|---|---

**Instructions**

This **one time** combined medication list (history), physician order and reconciliation form is to be completed at care transitions (admission, transfer or discharge). Upon completion, place in **Physician Order** section in chart. MD orders section (below) should only be completed by a provider licensed to prescribe (i.e. MD, NP, etc.).

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Route</th>
<th>Freq</th>
<th>Discrepancy</th>
<th>Discrepancy comments (i.e. different dose, not ordered)</th>
<th>MD orders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**History taken:**

Signature | date/time | Signature | date/time
---|---|---|---

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## Patient Recommendations**

| Patients 65 and older | | Patients with diabetes: |
|-----------------------|--------------------------|
| Get the pneumococcal vaccine (pneumonia shot) | Have a dilated eye exam performed annually by a professional |
| **Patients 50 years and older** | Check your feet daily and during doctor visits |
| Get the flu shot annually | Have your urine checked annually for microalbumin |
| Have your blood pressure taken and discussed with your doctor | Get a blood test for sugar control every 3–6 months (HbA1c) |
| **Women:** | Have your cholesterol and lipids checked each year |
| Get a mammogram every 1–2 years | Maintain blood pressure less than 130/80 |
| **Men:** | Get a PSA test if you are between 40 and 50 years of age |
| Undergo a digital rectal exam every three years or at your doctor's recommendation | Get an annual flul shot |
| Get a breast exam annually by 40 years of age | Get a PSA test for prostate cancer (PSA) with your doctor if you are 50 or older |
| Get a bone density screening test by age 65 | **Patients with heart disease (heart attack/ coronary disease):** |
| **All Women:** | Keep blood pressure less than 140/90 |
| Avoid smoking or using tobacco products | Take aspirin or alternative for platelets* |
| Avoid using tobacco products | Take a statin drug for cholesterol* |
| Keep blood sugars in a good control | Know your lipid profile (your cholesterol level) |
| Ask your doctor about how to take | Take a beta blocker if you have had a heart attack in the past* |
| **Patients who will be undergoing major surgery:** | **Patients with heart failure:** |
| Avoid smoking before surgery if there is time | Know your ejection fraction (EF) or if your heart function is decreased |
| Keep blood sugars in a good control | Take an ACE inhibitor or a similar medication if your heart function is decreased* |
| Ask your doctor about how to stop smoking before surgery | Weigh yourself at each office visit and daily at home |
| Ask your doctor about medications and resources to help you quit | **Patients with asthma:** |
| Ask your doctor about medications and resources to help you quit | Take an inhaled corticosteroid or alternative long-acting agent if symptoms are persistent* |
| Ask your doctor about medications and resources to help you quit | Talk with your doctor about any increase in your symptoms or need for increased use of medication |

## Patient Health Snapshot

| Name: |  |
| Address: |  |
| Telephone: |  |
| Email: |  |
| Birthdate: |  |
| Primary physician: |  |
| Physician's Phone: |  |
| Other physicians: |  |

This pamphlet was created to help patients take a more active role in their healthcare by keeping track of:

- past and present health issues
- routine health maintenance activities
- medications, doses, and reasons for taking them
- testing and procedures

and may be used as a tool for:

- initiating discussion with your physicians
- communicating health information easily with other healthcare providers

Please bring this with you to all healthcare visits and hospitalizations.

**More pamphlets are available at [www.ncmsprc.org](http://www.ncmsprc.org) under Patient Resources.**
6 Reference Materials

Medication Reconciliation


Adverse Drug Events and Medication Errors


U.S. Pharmacopeia. Miscommunication leads to confusion and errors: cause of errors, case illustration, and suggestions to minimize errors in communication. USP Patient Safety CAPSLink Newsletter, December 2003. See also other issues analyzing errors submitted to their medication error database.

**Website Resources**

Agency for Healthcare Research and Quality (AHRQ)  
www.ahrq.gov/qual/errorsix.htm

American Society of Health-System Pharmacists  
www.ashp.org

The Carolinas Center for Medical Excellence  
www.thecarolinascenter.org

Institute for Healthcare Improvement (IHI)  
www.ihi.org

Institute for Safe Medication Practices  
www.ismp.org
Examples

Medication Reconciliation Policies/Procedures and Forms (see attached pages)


Carolinias HealthCare System  
Carolinias Medical Center  
Policy & Clinical Practice Guidelines 

MEDICATION RECONCILIATION 

Page 1 of 9 
Written: 3/06  
Revised 8/06 

I. POLICY 
Medication reconciliation shall be initiated at the time of entry into the healthcare setting and completed within 24 hours for patient admissions. Medication reconciliation shall also be completed upon transfer to and from progressive and intensive care, upon return from the operating room and upon discharge from the hospital. 

II. SUMMARY 
This policy explains the process for medication reconciliation and defines the guidelines for documentation of patient medication reconciliation upon entry into the hospital or ambulatory care setting, during transfers involving different levels of care, and at the time of discharge. 

III. DEFINITION 
Medication reconciliation is the process of identifying the most accurate list of all medications a patient is taking upon entry into the healthcare system (including name, dosage, frequency, and route) and using this list to provide correct medications as the patient transitions through various levels of care within the system. 

Medication reconciliation requires collection of an accurate list of home medications that serves as a reference throughout the patient encounter. The list is updated as necessary upon discharge from the institution, and continuity of care is provided by communicating this updated list of medications to the patient and the next provider(s) of care. During the patient encounter, every attempt should be made to document the rationale for deviations from the patient’s usual medication regimen. 

IV. INTERVENTIONS (Inpatients) 
A. Admission 
   1. Home medication history/ pre-admission history and allergy history are taken and recorded on the Carolinas Healthcare System Medication Reconciliation (Admission/Discharge) Form. 
      a. History may be obtained by the RN/LPN, Pharmacist or Physician. 
         1. If the physician or physician-extender obtains the list of home medications, the admitting nurse is responsible for adding the allergy, primary care provider, height and weight information at the top of the Form.
MEDICATION RECONCILIATION

b. History may be obtained from the patient, significant other, transfer paperwork from another facility, medication bottles, primary care provider, or an outside pharmacy.

c. Medication history involves patient/caregiver and includes prescription medications, over-the-counter medications and herbals.

2. Admission orders for home medications are written by the physician, either on the Physician’s Order form or on the Medication Reconciliation (Admission/Discharge) Form.

   a. If the Medication Reconciliation (Admission/Discharge) Form is used, the physician should circle “yes” or “no” to indicate which medications should be continued. This may also be accomplished via a verbal order.

      1. The Physician should sign the Medications Ordered section of the Form, including the date and time.

   b. Any orders for new medications or changes to existing medications should be written on a Physician’s Order form.

   c. In the event the Medication Reconciliation (Admission/Discharge) Form is not used to order medications, a physician signature is required in the Medications Reviewed section within 24 hours, to acknowledge that the Medication Reconciliation (Admission/Discharge) Form has been reviewed.

3. The RN/MD will compare the Medication Reconciliation Form with the admission orders.

   a. Differences between Medication Reconciliation Form and the admission orders will require follow-up with/by the physician to complete the Medication Reconciliation process.

4. Comments and/or Explanation of Medication Reconciliation should be used to indicate why a medication is not being ordered, that the frequency has changed, the dose has changed, or the route modified upon admission. Any other information that may be helpful may be written in this section.

   a. If an error is noted on the Form, it should be crossed through with a single line and rewritten below the last medication on the list.

      1. The correction will contain the date/time and name of the person making the addendum.

      2. A note should be written in the Comment section of the erroneous entry i.e. “see addendum below.”

   b. Active orders that are in need of correction should be corrected by obtaining a new order from the physician.

      1. Record the new order on the Physician Order Form.

5. The Medication Reconciliation (Admission/Discharge) Form is scanned/faxed to Pharmacy.

   a. When the Medication Reconciliation (Admission/Discharge) Form is scanned to Pharmacy as a reference, the date/time and initials
MEDICATION RECONCILIATION

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of the person scanning the form are placed in the designated section of the form (including page 2 if applicable).

b. If the Form is used to order medications, the date/time and initials of the person scanning the form are placed in the designated section of the form (including page 2 if applicable).

6. The original document is placed in the medical record, “Physician Order” section, as the first document in this section. The Form will be placed in a sheet protector to separate the Form from other documents in this section of the chart and should remain in the chart at all times.

7. Pharmacy will enter patient demographic information into the pharmacy computer system.

8. Pharmacy will process medication orders submitted on the Medication Reconciliation (Admission/Discharge) Form and/or physician order form.

9. Nursing will generate an admission MAR, transcribe/verify orders onto the MAR and administer medications according to physician orders.

B. Transfer

1. Medication Reconciliation Transfer/Post-op Form is utilized to reconcile and order medications upon transfer into and from progressive care and intensive care and for patients returning from surgery.
   a. Medication Reconciliation Transfer/Post-op Form is a list of all active medications and on hold medications.
   b. The physician is responsible to review this document and indicate “YES” or “NO” to authorize the medication upon transfer to the new care setting.
   c. Any changes to current medication should be written on a Physician Order Form.
   d. When completed, the form is scanned/faxed to the Pharmacy for order processing.
      1. The sending unit should scan/fax the Transfer/Post-op Form to prevent delays in processing the new medication orders.
   e. The RN/LPN updates the MAR and administers the medications per the written physician order.
      1. RN/LPN transcribes new orders onto the MAR and discontinues medications per physician orders.
      2. Medications are administered according to physician orders.

C. Discharge

1. Medications will be reconciled by the physician at the time of discharge and properly documented as part of the discharge process.
MEDICATION RECONCILIATION

2. The physician will obtain the Medication Reconciliation (Admission/Discharge) Form completed upon admission and compare this list with the current medications i.e. MAR, Pharmacy Profile (if available) or the Medication Reconciliation Transfer/Post-op Form and indicate "YES" or "NO" on the original Medication Reconciliation (Admission/Discharge) Form. The "Continue at Discharge" field is located on the right hand margin of the Medication Reconciliation (Admission/Discharge) Form.
   a. All medications are to be reconciled. New and/or revised medications should be added to the bottom section of the Medication Reconciliation Form (page 2).
   b. Discharge physician signature is required. Special circumstances occur in which the physician is not available to sign the document. In this event, the discharge nurse is to contact the physician for discharge medication reconciliation and record this as verbal/telephone order on the Medication Reconciliation Form.
      1. The discharge physician signature is required on each page.

3. The nurse transfers the discharge medication orders onto a Patient Discharge Medication Instructions Form and reviews this information with the patient, significant other or responsible party to reflect the current list of medications.
   a. Nurse to document admission medications to be discontinued upon discharge.
   b. Provide the original document to patient, significant other with instruction to keep this Form at all times and share with future care providers.
   c. Fax the Discharge Medication Instructions to the next providers of care which may include: primary care provider, physicians with whom follow-up appointments are scheduled, skilled nursing facilities and others.
   d. Scan the Form to the Inpatient pharmacy.

4. Move the Medication Reconciliation (Admission/Discharge) Form to the "History & Physical" section of the medical record.

5. File a copy of the Patient Discharge Medication Instructions in the medical record, H&P section of the chart.

V. INTERVENTIONS (Emergency Department)

1. The Medication Reconciliation (Admission/Discharge) Form may be completed as described in section IV A above.

2. Alternatively, home medication history/allergy history may be taken and recorded on the physician flowsheet.
MEDICATION RECONCILIATION

a. History may be obtained by RN/LPN
b. History may be obtained from the patient, significant other, transfer paperwork, EMS, medication bottles, prior records or primary care provider.
c. Medication history involves patient/caregiver and includes prescription medications, over-the-counter medications and herbals.
d. If the patient/caregiver are unclear on medication names/dosages, etc., this is noted in the medication section.
e. If the patient provides a complete list, it may be copied and attached to the flowsheet. In this scenario, ensure the list has appropriate patient labeling so that it stays with the medical record, and indicate list is attached in the medication section.

3. The ED physician reviews this list with the patient/caregiver and notes any differences.

4. Upon discharge, any additions or changes to the medication list are documented in the discharge instructions. The patient receives a copy of the discharge instructions.

5. A copy of the discharge instructions are maintained with the medical record.

VI. Cardiac Catheterization Lab (outpatients)

1. The Medication Reconciliation (Admission/Discharge) Form is completed when the patient arrives for a procedure.
2. The physician indicates if any medications are to be changed or added.
3. The patient is given Outpatient Cardiac Cath Discharge Instructions form.
4. If there are no changes or additions to the patient’s home medications, the patient is instructed to continue home medications.
5. If there are any changes or additions to the patient’s home medications, the entire list is rewritten onto the Patient Discharge Medications Form.

VII. Endoscopy (outpatients)

1. In advance of the procedure, patients are sent a Patient Information Form and instructed to list all prescriptions, over the counter medications and supplements, including name, dose, frequency and the last time taken.
   a. There is a separate section that specifically asks about aspirin, NSAID’s, anti-platelet agents, vitamin E and anticoagulants.
2. When the patient arrives for the procedure, the medication list is entered into the Provation® database by the admitting nurse which is reviewed by the physician and electronically signed.
MEDICATION RECONCILIATION

3. Following the procedure, the patient is given instructions that address agents that cause sedation, aspirin and ibuprofen, in addition to the Patient Discharge Medications Form.

VIII. Radiology (outpatients)

1. Invasive procedures, excluding diagnostic aspirations (ex. angiography, biopsy, myelogram, tunneled catheter insertions, nephrostomy tube placement, biliary and vascular stents, TIPSS): the Medication Reconciliation (Admission/Discharge) Form and Patient Discharge Medications Instructions Form are completed as described for inpatients in section IV above except:
   a. If a new medication is prescribed, this is included in the physician’s dictated procedure note which is copied to the referring physician.
   b. Upon discharge, any additions or changes to the medication list are documented in the discharge instructions. The patient receives a copy of the discharge instructions.
   c. The Patient Discharge Medications Instructions are not faxed to the next provider of care or scanned to the inpatient pharmacy.

2. Non-invasive procedures that require iodinated contrast (ex. CT scan, IV pyelogram): the technologist screens the patient’s medication list to identify anyone taking metformin.
   a. Home medications are listed on an exam-specific history sheet.
   b. If a patient is found to be taking metformin, the technologist informs a radiology nurse.
   c. The nurse instructs the patient to not take metformin for 48hrs after the scan and this is included in the Discharge Instructions.
   d. These instructions are faxed to the physician who manages the patient’s diabetes

3. Minimally invasive procedures (ex. arthrograms, fine needle aspirations, thoracentesis, paracentesis): the technologist screens the patient’s medication list to identify medications that would be contraindicated.
   a. Home medications are listed on an exam-specific history sheet.
      1. List of contraindicated medications is one approved by the radiologists.
      2. If contraindicated medication is identified, the technologist will inform the radiologist for further instructions.
      3. The radiologist/designee consults with the prescriber to determine best plan for withholding and reinstating the medication of concern.
      4. The patient is instructed regarding the plan.
MEDICATION RECONCILIATION

IX. Kidney Dialysis Unit (Outpatients)
1. Each patient taking continuing medications will have a summary record titled Ambulatory Care Continuing Medications.
   a. The record will be updated at each visit to reflect the patient’s medication history including prescriptions, over-the-counter medications, herbas, supplements, etc.
   b. Continuing medication names will be listed in the left column.
   c. Record the date of the visit across the top of the column.
   d. List the dosage and route of the medication in the block.
   e. If a patient did not bring his/her medications, but knows the names of the medications, the medications are to be listed on the summary list with “DNB” (for “did not bring”) listed in dosage box.
   f. If a patient did not bring his/her medications and does not know the names of the medications, this will be noted on the Ambulatory Care Continuing Medications record.
   g. If a patient is taking no continuing medications, this is may be reflected in the progress note.

2. If new medications are added or current medications stopped or changed, the patient will be informed.

3. Upon discharge, any additions or changes to the medication list are documented in the discharge instructions. The patient receives a copy of the discharge instructions.

4. A copy of the discharge instructions are maintained with the medical record.

X. Outpatient Surgery
1. Patients seen in the Pre-Operative Screening Clinic:
   a. A letter of instructions is mailed to the patient, including a form entitled Home Medication List, which the patient is to complete prior to the Clinic appointment.
   b. At the time of the appointment, home medications are listed on the Anesthesia questionnaire.
   c. On the day of surgery, the nurse in the pre-op holding area completes the Medication Reconciliation (Admission/Discharge) Form, using the Home Medication List and confirming the history with the patient.

2. Patients not seen in the Pre-Operative Screening Clinic:
   a. If the patient is contacted via telephone by Telehealth, the Home Medication List is completed by the Telehealth caller.
   b. If the Pre-Operative Screening Clinic or Telehealth did not complete the Home Medication List, the nurse in the pre-op holding area completes the Medication Reconciliation (Admission/Discharge) Form.

3. For procedures in the main OR, the Medication Reconciliation (Admission/Discharge) Form is scanned to the inpatient pharmacy.
MEDICATION RECONCILIATION

4. The surgeon completes the discharge portion of the Medication Reconciliation (Admission/Discharge) Form.

5. The recovery room nurse follows the procedure outlined in section IV.C. 3-5 above.
   a. In One Day Surgery, the Discharge Medication Instructions are not scanned to the inpatient pharmacy.

XI. Ambulatory Care Environment

1. Medication Reconciliation will be accomplished during the office visit and at interfaces of care with other providers.

2. Each patient taking continuing medications will have a summary record titled Ambulatory Care Continuing Medications.
   a. The Ambulatory Care Continuing Medications record will be kept on the left side of the medical record, immediately underneath the Problem List.
   b. The record will be updated at each visit to reflect the patient’s medication history including prescriptions, over-the-counter medications, herbals, supplements, etc.
   c. Continuing medication names will be listed in the left column.
   d. Record the date of the visit across the top of the column.
   e. List the dosage and route of the medication in the block.
   f. If a patient did not bring his/her medications, but knows the names of the medications, the medications are to be written on the summary list with “DNE” listed in dosage box.
   g. If a patient did not bring his/her medications and does not know the names of the medications, this will be noted on the Ambulatory Care Continuing Medications record.
   h. All patients will be encouraged to bring medications to all visits.
   i. If a patient is taking no continuing medications, this can be reflected in the progress note.
   j. If new medications are added or current medications stopped or changed, the patient will be informed.
   k. Upon discharge, any additions or changes to the medication list are documented in the discharge instructions. The patient receives a copy of the discharge instructions.
   l. A copy of the discharge instructions are maintained with the medical record.

3. Hospital admissions:
   a. When admitting patients to a hospital setting place a copy of the patients’ Ambulatory Care Continuing Medication List with the physician orders.
   b. Another option is to complete the Medication Reconciliation (Admission/Discharge) Form.
   c. When a hospital notifies CMC Ambulatory Care Medical Records of an admission, the Ambulatory Care Continuing
MEDICATION RECONCILIATION

Medication List is faxed along with the pertinent admission package.

4. Following hospitalization:
   a. Patient Discharge Medications Instruction Form is received via fax and presented to patients' primary care provider.
   b. The patients' physician or designee will compare the Discharge Medications Instruction Form with the Ambulatory Care Continuing Medication List.
   c. If a discrepancy exists between the Patient Discharge Medications Form and Ambulatory Care Continuing Medication List the physician is responsible for completing the medication reconciliation process and updating the Ambulatory Care Continuing Medication List.
   d. After the medication reconciliation process is completed, place the Discharge Medications Instruction Form behind the inpatient tab in the patients' medical record.

XII. REFERENCES

Rozich JD, Resar RK. JCOM. 201:8(10):27-34

JCAHO NPSG, Goal 8, Accurately and Completely Reconcile Medications Across the Continuum of Care.

Written: 3/06
Revised 8/06
## Medication Safety Reconciliation

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- [ ] Actual [ ] Stated
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### Allergies:
- [ ] Denies
- [ ] Latex Sensitivity

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<th>Meds/Foods/Dyes/Other</th>
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Information obtained from:
- [ ] Patient/Family
- [ ] Patient's Prior Records
- [ ] MAR from other facility
- [ ] Other:
- [ ] Pharmacy
- [ ] Medicine Bottles
- [ ] Records from other facility

**Pharmacy Name:**

**Phone No.:**

**Primary Care Provider:**

**Office location:**

**Medication disposition:**
- [ ] no meds brought to hospital
- [ ] sent home
- [ ] other:

### HOME/PRE-ADMISSION MEDICATION/ DOSE/FREQUENCY

*(Include concentration if liquid form)*

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<thead>
<tr>
<th>Order on Admission</th>
<th>Home/PRE-ADMISSION MEDICATION/ DOSE/FREQUENCY</th>
<th>Date time of last dose prior to admission</th>
<th>Comments and/or Explanation of Reconciliation</th>
<th>Continue at Discharge</th>
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**History Taken By:**

- [ ] continued on page 2

**Medications to be reconciled by MD prior to discharge. New/changed medications should be added to pg 2.**

**Medications Reviewed Only:**

**Scanned to Pharmacy (not used as order) by:**

**Date:**

**MD Signature:**

**Date:**

**Time:**

**Patient Identifier**

**Medications Ordered (if "yes" or "no" circled on left above):**

**Scanned to Pharmacy (used as order) by:**

**Date:**

**MD Signature:**

**Date:**

**Time:**

**Carolinhas HealthCare System**

**MEDICATION RECONCILIATION FORM**

Admission and Discharge page 1

*Keep in Physician's Orders at all times*  Revision draft 7/5/06
<table>
<thead>
<tr>
<th>Order on Admission</th>
<th>Date of last dose prior to admission</th>
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History Taken by: 
Date: 
Time: 
Medications to be reconciled by MD prior to discharge. New/changed medications should be added below.

Medications Reviewed Only

MD Signature: 
Date: 
Time: 
Scanned to Pharmacy (not used as order) by:

Medications Ordered (if “yes” or “no” circled on left above):

MD Signature: 
Date: 
Time: 
Scanned to Pharmacy (used as order) by:

New Discharge Medications and Changes to Pre-Admission Medications
(name, dose and frequency):

- [ ] No new medications or changes to original home medications

New Rx written

- Yes
- No

Discharge MD Signature: 
Date: 
Time:

Note: This list of discharge medications is based upon information obtained from sources that typically include the patient/family and available records. Questions regarding medications prescribed by other providers should be directed to those providers.
**Patient Instructions for Home Medicines**

*(name, dose and frequency; include concentration for liquids)*

<table>
<thead>
<tr>
<th>Take These Medicines at Home:</th>
<th>You are taking this medicine for</th>
<th>Next Dose Due</th>
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**Stop Taking These Medicines at Home:**

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**Carolinas HealthCare System**

**Patient Discharge Medicine Instructions**

*Revised 8/28/06*  
*Original: Patient*  
*Copy to chart*
Patients:

1. **Always keep this form with you.** If you need help, ask a Nurse, Pharmacist, or a Doctor to help you fill out this form.

2. This list of medicines is based on information you or a family member gave the hospital and any available records. If you have questions about your medicines, please ask your primary care provider (doctor or nurse) or pharmacist.

3. Take this form to **all** Doctor visits and **all** medical testing (example: lab, x-ray, MRI, CT). Take this form to **all** pre-assessment visits for admission, surgery, and hospital visits (ER, hospital admission, or out-patient visit).

4. Change this form as changes are made to your medicines. If a medicine is stopped, draw a line through it and write the date the medicine is stopped. For example, if you are taking Digoxin and the doctor tells you to stop taking it on August 16, this is how you mark the form. **Digoxin 8/16/06**

5. If you have a medical test, bring this form with you. A Doctor or Nurse will look at the form and make sure it has the right information. They will give you the form back.

6. If you are in the hospital and are being discharged, you will receive a new form, which will have all of the medicines you need to take. Someone will help you read the form and will give you a copy of it. When you get the new form, throw away the old one. When you return to your doctor, take your new form with you. This form keeps you, your family, and your healthcare providers up to date on your medicines.

7. **Tell your family, friends, and neighbors about the benefits of using this form.**

**HOW DOES THIS FORM HELP YOU?**

By using this form, it:

1. **Reduces confusion and saves you time.**

2. **Improves communication.** Provides your family/healthcare providers with a current list of **all** of your medicines.

3. **Improves Medicine Safety.** Medicines that cannot be taken with other medicines are corrected. If you are taking two medicines that are the same, the pharmacist, doctor, or nurse can correct it.

**Carolinias HealthCare System**
Fax

To: ___________________________ From: ___________________________

Fax: ___________________________ Unit Phone: ___________________________

Pages: ___________________________ Date: ___________________________

Re: Medication Reconciliation – List of Patient Medications Upon Discharge

This document is being faxed to your office because one of your physicians is the next provider of care for this patient. The document contains a list of the patient’s medications at the time of discharge from our facility. This list is based upon information obtained from sources that typically include the patient/family and available records. Please place in the patient’s chart for access by the physician. If you have a question about this information, please call the nursing unit at the phone number above.

If this information should be faxed to a different secure fax number, please notify Medical Staff Services at 704-355-2147.

CONFIDENTIALITY NOTICE:

If you are not the intended recipient or the person responsible for delivering it to the intended recipient, you are hereby notified that you are not authorized to read, print, retain, copy or disseminate this message, any part of it, or any attachments. This facsimile message may contain information that is confidential, privileged, proprietary, or otherwise legally exempt from disclosure or use.

Any disclosure or use of this facsimile message by any person other than the intended recipient or person responsible for delivering it to the intended recipient may constitute a Federal criminal offense punishable by imprisonment up to 10 years or fines up to $250,000.

If you have received this message in error, please destroy this message and any accompanying attachments in their entirety without reading the content and notify the sender immediately by telephone of the inadvertent transmission, by calling collect if located outside the calling area. There is no intent on the part of the sender to waive any right or privilege that may be attached to this communication. Thank you for your cooperation.
Please write down all of the medicines that you take. You may get someone to help you write, but this is all about you.

<table>
<thead>
<tr>
<th>Allergies:</th>
<th>None</th>
<th>I am allergic to latex</th>
<th>yes</th>
<th>no</th>
<th>I am allergic to Betadine or iodine</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
</table>

**I am allergic to these medicines** *(Example: Penicillin)*

**The medicine makes me** *(tell what happens when you take this medicine)*

*(Example: itchy, have trouble breathing, get a rash, have diarrhea)*

---

**I am allergic to these foods and other things** *(Example: shellfish)*

**It makes me** *(tell what happens when you eat the food or handle the other things)*

*(Example: rash)*

---

**I Take These Medicines at Home:** *(include the name of the medicine, dose and how often you take the prescription medicine, over the counter product or herbal)*

*(Example: Digoxin 0.25mg every morning)*

---

**I take this medicine for:** *(tell why you take this medicine)*

*(Example: Heart problem)*

---

Carolinias HealthCare System

*Form for Patient to List Home Medicines*

*Revised draft 3/22/08*
OSF SAINT FRANCIS MEDICAL CENTER
Department of Patient Care Services
Draft 4/26/04

Guidelines for the Use of the Patient Home Medication Order Sheet and Discharge Medication Order Sheet – Reconciliation Form (Adult)

PURPOSE: To outline the use of the Patient Home Medication Order Sheet – Reconciliation Form for adult patients.

NATURE OF THE FORM: The form is a permanent part of the medical record and should be completed using black ballpoint pen. It is a duplicate form. The first page is used to document vital information as part of the admission process. The second page is used to order home medications at discharge. The form is to be used by the physician to reconcile the patient’s medications taken at home. The persons filling out the form should take care not to write in the blackened areas on the first page, as the information will be transferred to the second sheet. The scripting on the reverse side of the form may be used to assist in obtaining the most complete medication history possible.

PATIENT POPULATION: The form is to be used for every adult patient treated at OSF Saint Francis Medical Center who occupies a bed on a patient care unit (excludes outpatients). If the patient is unable to assist with completion of the form, the person gathering the information should attempt to obtain the medication history from family members, the patient’s pharmacy, and/or the patient’s physician office.

RESPONSIBLE PERSONS: The nurse or unit support representative (USR) will addressograph the form. The medication history will be obtained by the nurse, physician or pharmacist. The physician will complete the “Physician Medication Orders on Admission” section on the first page and place it at the designated area on the nursing unit to have the orders processed by the USR. A Registered Nurse must verify the orders and sign them off.

PLACEMENT IN MEDICAL RECORD: The original Patient Home Medication Order Sheet is to be placed in the medical record as the bottom sheet in the Physician Order section. The second sheet, Discharge Medication Order Sheet, should be placed as the top sheet in the Physician Order section (below code status sheet, if present). It should not be thinned from the medical record.

DETAILED INSTRUCTIONS:
First page (Patient Home Medication Order Sheet): The nurse, pharmacist, or physician completing the form must fill out all sections completely (except for the blackened areas), which include food/drug allergies and reactions/side effects, latex allergy, iodine or dye allergy, actual height, actual weight, and information source (patient, patient, spouse, wallet card, meds brought from home, other). If the patient is on no medications at home, the box provided should be checked. If unable to collect a medication history, the person obtaining the information should check the box provided, and list the reason. The person gathering the medication history should check the box indicating the appropriate form of medications (swallows pills, crushes pills, liquid medications only).
The initials of the person obtaining the medication history are to be placed in the far left column. All medications (prescriptions, over the counter, herbals, patches, inhalers, eye drops and supplements) must be listed fully, including the drug name, dose, route, frequency, and date/time of home administration schedule (Note: for medications that are taken once daily, list time if taken the day of admission). The person gathering the medication history should sign the form, write the date/time the information was collected, and label the section "Page ___ of ___" (e.g., Page 1 of 1, Page 1 of 2, etc).

The physician is to review the medication history and may cross out, write "mistaken entry" and place initials beside the entry. The physician will rewrite a medication if the order has not been processed through Pharmacy. The physician will use the section called "Physician Medication Orders on Admission" to reconcile each medication the patient takes at home.

- If the medication is to be ordered unchanged, the physician must check the appropriate box.
- If the medication is the correct home medication but will be ordered in the hospital with a change, the physician must check the appropriate box on this form and write the medication out on a separate Physician Order form.
- If the medication is not to be ordered, the physician must check the appropriate box.
- Nothing should be written in the blackened areas since it will transfer to the sheet underneath.

The physician should then sign on the appropriate line, date and time the order, and write his/her dictation number on the appropriate line.

The form is filed in the designated area of the chart for the USR to process as an order. The USR will cross out any unfilled lines. The USR will check the appropriate box indicating that the form was sent, and will then fax the form or send a copy (not original) to Pharmacy. No further orders may be added to the form (refer to Guidelines for the Use of the Amendment Sheet for Home Medication History). A Registered Nurse must verify and sign the orders off.

The original first page should be placed as the **bottom sheet** in the Physician Order section of the medical record. The second page should be placed as the **top sheet** in the Physician Order section (below code status sheet, if present).

**Second page (Discharge Medication Order Sheet):**
The physician will fill out the far right column of the form with date and time and will reconcile the home medication orders at discharge:
- If the medication is to be ordered unchanged, the physician must check the appropriate box.
- If the medication will be ordered with a change, the physician must check the appropriate box on this form and write the medication out on a separate line in the bottom section of the form ("New Medications/Previous Home Medications with Changes").
- If the medication is not to be ordered, the physician must check the appropriate box.

The physician should then sign on the appropriate line and write his/her dictation number on the appropriate line.
A Registered Nurse will verify the orders and sign them off. The nurse will indicate the appropriate physicians who should receive a copy of the form. The USR will fax the form as indicated by the nurse.

This form is not to be used as a retail pharmacy prescription.

Approval:

Distribution: All Patient Care Units except Children's Hospital of Illinois (CHOI)
<table>
<thead>
<tr>
<th>Allergies/ Drug/Foods</th>
<th>Reactions/Side Effects</th>
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On No Medications at Home:
Swallows pills  Crushes pills  Liquid Meds Only
Unable to Obtain Medication History—Reason:

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### Home Medications on Admission
(Prescriptions, OTC, Herbs, Patches, Inhalers, Eye Drops & Supplements)

<table>
<thead>
<tr>
<th>Initials</th>
<th>Drug Name</th>
<th>Done</th>
<th>Room</th>
<th>Froq</th>
<th>Last/ Tston Date/Time</th>
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</table>

### Physician Medication Orders on Admission
(Check Only One)

<table>
<thead>
<tr>
<th>Order Unchanged</th>
<th>Change Drug Dose</th>
<th>DO NOT ORDER</th>
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Initial/Signature of
Person Gathering History: __________________________ Date/Time: __________________________

Physician Signature: __________________________ Date/Time: __________________________

DO NOT REMOVE FROM THE CHART
Please place Admission Reconciliation Form as the bottom sheet in the physician order section

_____ of

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Sent to Pharmacy
Discharge Medication Order Sheet

<table>
<thead>
<tr>
<th>Allergies: Drug/Foods</th>
<th>Reactions/Side Effects</th>
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</table>

On No Medications at Home:
- Swallows pills
- Crushes pills
- Liquid Meds Only

Unable to Obtain Medication History—Reason:

**Home Medications on Admission**
(Prescriptions, OTC, Herbs, Patches, Inhalers, Eye Drops & Supplements)

<table>
<thead>
<tr>
<th>Initials</th>
<th>Drug Name</th>
<th>Dose</th>
<th>Route</th>
<th>Days</th>
<th>Time</th>
<th>Order</th>
<th>Discharge</th>
<th>Change</th>
<th>Order</th>
<th>Discharge</th>
<th>Change</th>
</tr>
</thead>
</table>

**Physician Medication Orders on Admission**
(Chose Only One)

<table>
<thead>
<tr>
<th>Order</th>
<th>Discharged</th>
<th>Change</th>
<th>DO NOT ORDER</th>
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</thead>
</table>

**Home Medications at Discharge**

<table>
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<tr>
<th>Order</th>
<th>Discharged</th>
<th>Change</th>
<th>DO NOT ORDER</th>
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</thead>
</table>

**New Medications/Previous Home Medications with Changes**

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Date</th>
<th>Route</th>
<th>Dose</th>
<th>Quantity</th>
<th>Refill</th>
<th>Duration</th>
</tr>
</thead>
</table>

Physician Signature:

Date/Time:

**THIS IS NOT A RETAIL PHARMACY SCRIPT**

Fax Discharge Instructions to the Following Physicians:

Page of
Nursing Medication Discharge Instructions
Transfer Orders

*Review MEDEX, MAR, Admission Medication Reconciliation Form & Amendment/Autosub
Form for Reconciling ALL medications at discharge

<table>
<thead>
<tr>
<th>Stop Taking These Medications at Home</th>
<th>Allergies</th>
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<tbody>
<tr>
<td>Drug Name</td>
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*NOT TO BE USED AS A RETAIL PHARMACY SCRIPT

<table>
<thead>
<tr>
<th>New Medications to Start Taking at Home</th>
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<tbody>
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<td>Drug Name</td>
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<tr>
<th>Continue Home Medications (continue until instructed to stop by your physician)</th>
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<tbody>
<tr>
<td>Drug Name</td>
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Fax to the following Physician(s):

Fax to Other:
All Fax Complete (initials, date/time):

Patient/Parent Signature: ________________________________
Date/Time: ________________________________

Nurse’s Signature: ________________________________
Physician Signature: ________________________________

*(If needed for transfer orders)

*PLEASE TAKE THIS FORM TO YOUR NEXT PHYSICIAN APPOINTMENT
*NOTIFY YOUR PHYSICIAN IF YOU STOP TAKING ANY OF YOUR MEDICATIONS

Original – Chart
Copy – Patient

Page ___ of ___
## Medication Safety Reconciliation

**PILOT FORM**

This form is an official part of the Medical Record

Trial form; approved by Howard Cohen, MD & Tim Miller, MD

Amendment/Autosubstitution Form

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Drug Name</th>
<th>Dose</th>
<th>Route</th>
<th>Freq</th>
<th>Order?</th>
<th>Comments</th>
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For use in modifying/updating/substituting Home Medication History

## THERAPEUTIC EQUIVALENT SUBSTITUTIONS

The medication prescribed is not available on the OSF-Saint Francis Medical Center Formulary. The following medication being substituted has been reviewed and deemed therapeutically equivalent by the Pharmacy and Therapeutics Committee.

### DISCONTINUE:
- Name of Drug:
- Route of Administration:
- Dose:
- Frequency of Administration:

### SUBSTITUTE:
- Name of Drug:
- Route of Administration:
- Dose:
- Frequency of Administration:

Any questions regarding the therapeutic substitution may be directed to the Pharmacy Department

Person Completing Form: ___________________________  Date/Time: ___________________________

Pharmacist Signature: ___________________________  Date/Time: ___________________________

Physician Signature: ___________________________  Date/Time: ___________________________

Diction Number: ___________________________

Page ___ of ___

**DO NOT REMOVE FROM THE CHART**

Please place as the bottom sheet in the Physician Order Section below the Reconciliation Form

**This will be in triplicate**
IHI Mentor Hospitals - Medication Reconciliation

Buena Vista Regional Medical Center - Storm Lake, IA
Availability Status: Available to answer requests
Licensed Beds: 54
Teaching / Non-Teaching Status: Non-teaching
Urban / Rural Status: Rural
Start Date of Intervention Work: November 2004
Mentor Contact Name: Michele Kelly, RNC, MSN, Dir. of Quality
Mentor Contact Email: kelly.michele@bvrmc.org
Mentor Contact Phone: 712-213-8604

Additional Information:

* Developed and implemented medication reconciliation process throughout all inpatient areas. Currently working on expansion to outpatient care areas.
* Process includes use of standardized medication reconciliation documentation form that is initiated within 8 hours of hospital admission, updated throughout hospitalization, and again at the time of discharge.
* Process includes gathering patient medication history, verification of history, and reconciliation with medications ordered at time of admission, transfer and discharge.
* Medication Reconciliation Policy developed to describe guidelines for use of documentation tool.

Outcome: Data for Medication Variances for calendar year 2005 show no adverse drug events related to medication reconciliation process.

* * *

Columbus Regional Hospital - Columbus, IN
Availability Status: Available to answer requests
Licensed Beds: 325
Teaching / Non-Teaching Status: Non-teaching
Urban / Rural Status: Rural
Start Date of Intervention Work: July 2002
Mentor Contact Name: Mary Sitterding
Mentor Contact Email: msitterdin@crh.org
Mentor Contact Phone: 812-376-5474

Additional Information:

Columbus Regional Hospital has adopted medication reconciliation as a key strategy in alignment with our organizational priority to keep patient’s safe. The Medication Reconciliation Team thrived within a culture that embraces the combination of rapid cycle testing, LEAN, and a complex adaptive systems approach to problem identification, solution generation and testing. Principles of complex adaptive systems as they relate to medication reconciliation are illustrated through structure, process, and pattern cycle changes. Innovative collaboration between IT and the Interdisciplinary Improvement Team resulted in an automated solution that dramatically reduced the number of steps required for medication reconciliation as well as the need for transcription. The team learned that standardizing forms, personal check lists, working harder next time, feedback of information, and awareness and training (Reser, 2003) will only allow a team to move so far. Steps implemented by the team that got us a little close to Level 2 (Reser, 2003) included: building decision aids and reminders into the system, redundancy, taking advantage of habits and patterns, and standardization of the process.

Admission Reconciliation Accuracy
1. Pilot nursing unit: 59 unreconciled medications/1140 medications reviewed (5% unreconciled/ 95% accuracy)
2. Hospital wide nursing units: 562 unreconciled medications/4078 medications reviewed (13% unreconciled/87% accuracy).
IHI Mentor Hospitals - Medication Reconciliation

Discharge Reconciliation Accuracy
1. Pilot Nursing Unit - 100% accuracy
2. Hospital Wide nursing units - 88% accuracy

Community Hospital North - Indianapolis, IN
Availability Status: Available to answer requests
Licensed Beds: 629
Teaching / Non-Teaching Status: Non-teaching
Urban / Rural Status: Urban
Start Date of Intervention Work: September 2005
Mentor Contact Name: Cleo Ann Burgard
Mentor Contact Email: cburgard@ecommunity.com
Mentor Contact Phone: (317) 621 5329

Additional Information:
This intervention is spread throughout our five [5] Network hospitals: Community Hospital Anderson, Community Hospital East, Community Hospital North, Community Hospital South, and the Indiana Heart Hospital

- The Community Health Network utilized LEAN Methodology to focus on improvement opportunities involving medication reconciliation
- Nursing satisfaction surveys conducted by pharmacy have noted a low level of dissatisfaction with their role in the medication reconciliation process
- Utilization of pharmacists to augment the medication history process is widely accepted by nursing, physicians and hospital administration to be essential to obtaining the most complete and accurate medication list at time of admission
- Partnership with the IT department has resulted in the development of an electronic document linking the admission home medication list to the current MAR facilitating discharge plans for patients
- Involving pharmacists in the medication reconciliation process has dramatically increased their clinical visibility and expanded clinical services
- Serial nursing/pharmacy and physician surveys will be used to track satisfaction with the process changes involving medication reconciliation
- Pharmacy has completed more than 1000 medication histories and provided improved accuracy and completeness in more than 85% of the histories as compared to the original record obtained
- Pharmacy has quantified that the average duration of time to complete a medication history is approximately 25 minutes
- Process redesign has resulted in more than 50% of the clinical pharmacist’s day is spent with direct patient care interactions

***

Contra Costa Regional Medical Center - Martinez, CA
Availability Status: Available to answer requests
Licensed Beds: 164
Teaching / Non-Teaching Status: Teaching
Urban / Rural Status: Urban
Start Date of Intervention Work: August 2005
Mentor Contact Name: Steven Tremain, MD
Mentor Contact Email: stremain@hsd.cccounty.us
Mentor Contact Phone: 925-370-5122

Additional Information:
After testing on a pilot unit, we successfully rolled out medication reconciliation on admission to all 11 inpatient units within 5 months. As of January 2006, all units are now doing medication reconciliation upon admission and on transfer, as applicable. In addition, linkages have been formed with Ambulatory Care so that medication information is communicated to the hospital in a standard way. Techniques that led to success included:
IHI Mentor Hospitals - Medication Reconciliation

- weekly 45-minute meetings that stayed on task;
- a physician champion;
- pilots followed by spread;
- adopting and adapting the Med Rec form from Missouri Valley Baptist Hospital;
- reducing work for the caregivers (one less form, not one more form!); and
- electronic generation of med rec/order form for all in-hospital transfers.

We have conducted pre- and post-implementation measurements to assess the impact medication reconciliation on admission has had in our first three services to go live. Our goal was to reduce the percent of unreconciled medications by 50% within three months of roll-out and we have exceeded that goal. Statistics that follow illustrate the % of unreconciled medications on admission (among patients who are admitted with a history of at home meds):

- Medicine Service = 22% (pre) and 1% (post)
- Surgery Service = 36% (pre) and 5% (post)
- ICU/IMCU Service = 10% (pre) and 2% (post)

Cooley Dickinson Hospital - Northampton, MA
Availability Status: Available to answer requests
Licensed Beds: 125
Teaching / Non-Teaching Status: Non-teaching
Urban / Rural Status: Urban
Start Date of Intervention Work: August 2005
Mentor Contact Name: Donna Truesdell
Mentor Contact Email: donna_truesdell@cooley-dickinson.org
Mentor Contact Phone: 413-582-2220

Additional Information:

Cooley Dickinson Hospital is a hospital that does not have an electronic MAR or CPOE. Therefore, our process is completely paper and pencil driven. An interdisciplinary team initiated the medication reconciliation process in August of 2005 with the development of a process for reconciliation of medications at the time of transfer utilizing pharmacists.

We quickly identified the need for better lists of “home medications” when patients arrive for care. CDH created a wallet card for medication lists and medical history and offered it to the public through numerous public relations efforts. We collaborated with physician practices in the region to also make cards available in office waiting areas and to have them updated during provider visits.

Medication reconciliation is currently operational in all inpatient and outpatient service areas. We have found outpatient areas (particularly the emergency department) to be more challenging and continue to fine-tune that process.

Chart audits have demonstrated 85% reconciliation of all medications including inpatient and outpatient episodes of care. Issues with reconciliation are now more performance issues with specific individuals and some areas have achieved 100% reconciliation of medications.

* * *

Fairview Health Services - Minneapolis, MN
Availability Status: Available to answer requests
Licensed Beds: Depending on the site, from 41 beds to 1,700
Teaching / Non-Teaching Status: one teaching, the rest non-teaching
Urban / Rural Status: Some rural and some urban
Start Date of Intervention Work: 01/2001
Mentor Contact Name: Steven Meisel
Mentor Contact Email: smeisel1@fairview.org
Mentor Contact Phone: 612-672-7061

[7/25/06]
IHI Mentor Hospitals - Medication Reconciliation

Additional Information:

Like most Campaign hospitals, Fairview is far from perfect in our reconciliation efforts. We have, however, creatively used technology and technicians to achieve our successes. We

- Use our ambulatory EMR, our inpatient EMR, and our inpatient pharmacy system in different ways in different sites.
- Use pharmacy technicians in several different ways.
- Work with our competitor hospitals on integrating our technology so that when a patient shows up at an ER of one site, and is a patient of a competing health system, a suitable abstract is available to the clinicians.
- Have successfully defined a business case for reconciliation which has allowed several of our sites to add staff for our reconciliation efforts.

Depending on the specific site:

- % home meds addressed by MD increased from 60% to 85%
- % defects/patient reduced from 1.7 to 0.2 in scheduled surgery patients
- reconciliation on transfer out of ICU increased from 40% to 96%
- admission reconciliation performed increased from 77% to 100%
- % of unreconciled meds on admission reduced from 48% to 7%
- admission reconciliation performed increased from 34% to 56%
- % meds reconciled on discharge increased from 50% to 80%

[1/31/06]

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Frederick Memorial Hospital - Frederick, MD
Availability Status: Available to answer requests
Licensed Beds: 224
Teaching / Non-Teaching Status: Non-Teaching
Urban / Rural Status: Rural
Start Date of Intervention Work: June 2005
Mentor Contact Name: Cindy Russell
Mentor Contact Email: crussell@fmh.org
Mentor Contact Phone: 240-566-3326

Additional Information:

- As part of the ICU Collaborative, Frederick Memorial Hospital successfully implemented Medication Reconciliation in the ICU on all patients that changed levels of care within the ICU or were transferred out to another level of care.
- The model was so successful that it was rolled out to our admission center so that all admitted patients would have Medication Reconciliation performed on admission. This represented 80% of all hospital admissions.
- The model is now being adopted in our same day surgical area.
- The model incorporates the prescribing/re-ordering activity by physician, which is valued highly by our physicians.
- Our process was received very favorably during our most recent JCAHO review in July 2005.
- Our process has been received well by nursing due to our method of incorporating the procedure into existing nursing workflow.
- 0.2% Unreconciled Medication upon admission to the hospital through the admission center or Same Day Surgical suite.
- 0% Unreconciled Medication upon transfer from ICU Level of care, since the inception of Medication reconciliation in June 2005.

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IHI Mentor Hospitals - Medication Reconciliation

Holy Spirit Hospital - Camp Hill, PA
Availability Status: Available to answer requests
Licensed Beds: 317
Teaching / Non-Teaching Status: Non-Teaching
Urban / Rural Status: Urban
Start Date of Intervention Work: January 2006
Mentor Contact Name: Christina DeCoskey, RN, BSN (Medication Reconciliation Coordinator)
Mentor Contact Email: cdecoskey@hsh.org
Mentor Contact Phone: 717-763-2344

Additional Information:

Key reasons for our medication reconciliation success:

- Our program provides support to our staff on this process.
- Multidisciplinary collaboration.
- We use a form that can be utilized as physician order sheet
- Our efforts have helped increase recognition of medication reconciliation as a patient safety concern.

Holy Spirit Hospital is a community hospital that currently works with a paper system. Our medication reconciliation committee consists of members from nursing, pharmacy, physicians, education, and IT specialists. (We are in the process of working on a computerized documentation system.) This initiative is fortunate to have a physician and nurse champion who collaborate closely with our pharmacy and risk management departments.

Our program is unique in that we utilize a team of LPNs who are responsible for obtaining a medication list from patients on admission. This team works directly under the Medication Reconciliation Coordinator (an RN) and is located in the Pharmacy department. This arrangement has contributed to strong collaboration and more effective communication between departments.

Although getting buy-in from all the necessary stakeholders has at times been challenging, with a strong educational effort and support from administration, we were able to implement this program on January 1st hospital-wide with good success. Buy-in from some physicians is still sometimes a challenge, but our family practice and internal medicine physicians have found the form we created to be a great reference and use it when they see patients.

Our medication reconciliation form is currently being utilized as an order sheet, but we are currently revisiting this process with the different medicine and surgery departments. On discharge, we fax a reconciled list of medications to patients’ discharging physician or family physician.

Reduction in the percent of unreconciled medications on admission from 39% to 12-16% since January 2006. Goal is to decrease the number of unreconciled medications on admission by 75% within 12 months.

[8/4/06]

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Kossuth Regional Health Center - Algona, IA
Availability Status: Available to answer requests
Licensed Beds: 25
Teaching / Non-Teaching Status: Non-Teaching
Urban / Rural Status: Rural
Start Date of Intervention Work: January 2006
Mentor Contact Name: Dar Elbert, RN, MS - Assistant Administrator/Nurse Executive
Mentor Contact Email: elbertd@mercyhealth.com
Mentor Contact Phone: (515) 295-4601
Additional Information:

- Kossuth Regional Health Center is a 25-bed Critical Access Hospital with two physician clinics, home care, hospice, and public health.
- Kossuth Regional Health Center has been able to roll out the Medication Reconciliation process in the Inpatient unit rapidly, as developed by our Network team through Mercy Medical Center - North Iowa, Mason City, Iowa.
- Within one day, we inserviced all inpatient nurses and providers and implemented the process beginning with all new admits.
- Our Network used a form available on the IHI website and made slight adjustments to the tool, which is used to reconcile medication orders on admission, discharge, change in level of care, and also serves as written orders for discharge by the provider.
- We incorporated the tool into the discharge process and changed the discharge patient education forms to include the addition of a medication wallet card, which they take to all appointments and medical care services for continued updating.
- Added medication reconciliation tools and process to 100% of inpatient medical records. Baseline was 0% as no process was in place for medication reconciliation.
- Outcome: no variances reported or discovered related to adverse drug events from lack of medication reconciliation process since implementation.

[8/31/06]

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Lynchburg General Hospital - Lynchburg, VA
Availability Status: Available to answer requests
Licensed Beds: 403
Teaching / Non-Teaching Status: Non-teaching
Urban / Rural Status: Urban
Start Date of Intervention Work: June 2005
Mentor Contact Name: Karen Douglas, RN, BSN, BC (Patient Safety Coordinator)
Mentor Contact Email: karen.douglas@Centra Health.com
Mentor Contact Phone: 434-947-7720

Additional Information:

- Joined the VHA Medication Reconciliation Collaborative in June of 2006 and participate in their coaching and content calls
- Began with two units, a draft form and two nurses and added additional units and team members approximately every two weeks until process rolled out to all inpatient and outpatient areas by February 2006. Worked with Pharmacy to implement using form for ordering admission medications.
- Team members responsible for staff education and data collection. Sent bi-weekly reminders to collect data and had drawings (to win $25.00 gift certificates) each month for those team members that turned in stats on time.
- To educate MDs, sent letters and put up education posters in MD bathrooms and lounges
- Enlisted Chief Medical Officer, a JD in health law, to answer questions that came up regarding legalities associated with the process.
- Met with team of surgeons, specialists, and nurses from outpatient areas to address special concerns re: outpatient medication reconciliation and have developed separate form for outpatients/short stays
- Initiated public outreach with article in local paper March 7, 2006 regarding importance of maintaining current, complete list of home medications to be given to healthcare providers when seeking care. Contacted Parish Nursing groups to spread the word in local churches.
- Baseline data demonstrated a rate 54.8% unreconciled medications on admission to Centra Hospitals. Goal is to reduce rate by 75% or 13% unreconciled medications on admission.
- As of February 1, 2006, have reduced number of unreconciled medications on admission to 18%.

* * *
Additional Information:

Lourdes developed a process and policy for medication reconciliation on admission. After multiple tests of change, we spread throughout the pilot unit. One week later, we spread to all inpatient units and the ED. Next, we successfully spread to our Primary Care Network and Home Care service line. We are currently including patients who receive services in the Ambulatory Surgery Unit. A structured educational plan was implemented that involved Nursing, Pharmacy, and Medical Staff. The educational plan has been incorporated into nursing orientation.

Monthly chart reviews (a sample drawn from all inpatient units) demonstrated that we have had only 1 ADE since September 2005. Unreconciled medications on admission have been reduced to 5% or lower since February 2005. In November and December, the rate was 0% and 0.6%, respectively.

[1/31/06]

Additional Information:

Prince William Hospital implemented a pilot electronic medication reconciliation program in our Critical Care Unit. In July 2005, the pilot was completed and analysis was such that this program was rolled out hospital-wide.

Interdisciplinary team formed with Physician as Leader, recent past president of the Medical Staff. Team Members included Chief Pharmacist, Clinical Pharmacist, Information Systems Specialist, Clinical Manager of Information Systems, Nurse Manager of Medical Floor, Intensive Care Unit Staff Nurse, Training & Development Nurse (education), and Performance Improvement (PI) Manager. After the pilot project we added staff nurses from other settings (outpatient, Birthing Center, Pre-operative surgery.)

PI Manager attended National IHI conference and focused on Medication Reconciliation. Informational articles and the National Patient Safety Goal were sent to team members and a Power Point Education were presented to the team at the first meeting.

Paper tools developed by other organizations (University of Massachusetts Memorial, Milford-Whitinsville Regional Hospital) were researched. Information Systems personnel determined that an electronic order tool could be developed through the existing software.

We piloted a small, restricted area and population of patients, the Intensive Care Unit (ICU) and those patients transferred out or discharged from the ICU. Multiple medications are frequently ordered as a patient is transferred from ICU.

In place of writing each medication, the physician can circle C=continue, M=Modify, or DC=stop the medication as it is printed on a form which was eventually authorized as a physician order sheet. The physician signs as an order sheet after circling the appropriate choice on each line item medication.
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The medication list is derived from the on-line Pharmacy profile for that individual patient and is up-to-date as per the physician ordering. We did not have a paper tool to begin this process. Accurate information was obtained through this pharmacy module profile. Time was saved on the part of the physician, Nurse and pharmacist with this tool as a physician order.

During the pilot, use of the electronic medication reconciliation was voluntary, with a 50% usage. Of the cases utilizing the program, there were 0% medication errors.

St. Luke’s Hospital - Cedar Rapids, IA
Availability Status: Available to answer requests
Licensed Beds: 560
Teaching / Non-Teaching Status: Non-Teaching
Urban / Rural Status: Urban
Start Date of Intervention Work: March 2003
Mentor Contact Name: Sherrie Justice
Mentor Contact Email: justicsl@crstlukes.com
Mentor Contact Phone: 319-369-8367 or 1-800-369-7217 ext. 8367

Additional Information:

- Developed a community-wide personal health record card. “Medication Matters” card is a small wallet-sized card providing patients a way to document their medication. Program is supported by both community hospitals, all physician offices, the Cedar Rapids Health Care Alliance and local pharmacies.
- Developed and implemented medication reconciliation processes and electronic tools throughout all inpatient areas. Includes use of standardized documentation forms that are utilized with every patient’s transition in care from admission to discharge.
- 150,000 “Medication Matters” cards distributed in the first year. Between both hospitals, continue to distribute approximately 55,000 cards annually.
- As part of discharge process, nursing completes a “Medication Matters” card for their patient. One nursing unit reports 95% compliance with this activity.
- Percentage of medications correctly reconciled at admission (May 2006) is 96% in the surgical population; 90% in the medical population.

St. Peter Community Hospital - St. Peter, MN
Availability Status: Available to answer requests
Licensed Beds: 22
Teaching / Non-Teaching Status: Non-teaching
Urban / Rural Status: Rural
Start Date of Intervention Work: March 2005
Mentor Contact Name: Benjamin W. Chaska, M.D., MBA, CPE, Medical Director and Patient Safety Officer
Mentor Contact Email: bchaska@stpeterhealth.org
Mentor Contact Phone: 507-934-8416

Additional Information:

Actions Taken
- Developed and implemented SPCH medication reconciliation form.
- Redesigned operational flow to incorporate medication reconciliation process into the medication intake, order sets, transfer and discharge planning tools.

Results
- Medication reconciliation improved from 76% to 94.5%.
IHI Mentor Hospitals - Medication Reconciliation

UMass Memorial Medical Center - Worcester, MA
Availability Status: Available to answer requests
Licensed Beds: 751
Teaching / Non-Teaching Status: Teaching
Urban / Rural Status: Urban
Start Date of Intervention Work: 4/03
Mentor Contact Name: Eric Alper, M.D.
Mentor Contact Email: AlperE@ummhc.org
Mentor Contact Phone: (508) 856-6431

Additional Information:

Our hospital has successfully deployed a medication reconciliation form and process. It is completed on admission and reviewed on transfer and discharge. It is usually used as a physician order form for medication orders that should be ordered on admission. This was deployed in a phased fashion through our hospital. Physicians and nursing have received extensive education about this important process.

Through deploying this form and process, we have been able to implement this process in approximately 85% of our hospital admissions. By performing retrospective chart reviews of medication reconciliation and adverse drug events, (using the IHI trigger tool), we were able to demonstrate a substantial improvement in medication reconciliation (from ~50% baseline to 95-100%) over this period. We also observed a reduction in the frequency of adverse drug events, from baseline of ~1.5% per 20 admissions to <5%.

[1/31/06]