

# First Cycles of Change and Reconciling Process Implementation Decisions

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The safe practice recommendations and reconciling process implementation strategies presented here were developed by the Massachusetts Coalition for the Prevention of Medical Errors. Additional information from their Reconciling Medications Collaborative is available on the Massachusetts Coalition Web site at [www.macoalition.org/initiatives.html](http://www.macoalition.org/initiatives.html).

# Reconciling Medications

- *Reconciling medications* is a systematic process that develops an accurate, up-to-date medication list for patients at admission and then compares that list against the physician's admission orders. Discrepancies are brought to the attention of the physician and, if appropriate, changes are made to the orders. Any resulting changes in orders are documented. The process is designed to promote communication and information transfer at patient handoffs, a well-known opportunity for error.

# Initiate First Small Test(s) of Change

## Examples of First Cycles of Change

- Cycle 1: Test reconciling form with 1 nurse/1 patient
- Cycle 2: Test updated form with 1 nurse/5 patients
- Cycle 3: Test updated form with 3 nurses for 2 days
- Cycle 4: Test set of interview questions about OTC/herbals with 5 patients during admit intake history

## Refining the Reconciling Process (Strategies to be Tested in Small Pilots)

### **Home Medication List**

- Who will compile the home medication list on the reconciling form?
- How? Sources of information, interviewing strategies.
- When should there be a pharmacy consult?
- How to integrate with old process (existing forms and procedures)?

## Reconciling Process

- Who puts medication history onto reconciling form? When?
- Simple rules for when to call the doctor.
- Time frame for resolving variances.
- Back-up plan if ordering prescriber not available in that time frame.
- How to pass off unreconciled medications at shift changes.
- Where to put the reconciling form.
- How to document medication changes made.
- Team roles/accountability—how MD, RN, and pharmacy will work together to complete the process.



## Core Recommendation



**Adopt a Systematic Approach  
to Reconciling Medications at Admission**

## Policies

1. Assign primary responsibility for reconciling to someone with sufficient expertise within a context of shared accountability (the ordering physician, RN, and pharmacy work together to achieve accuracy).
2. Reconcile patient medications within specified time frames.
3. Develop clear policies and procedures for the steps in the reconciling process.

## Technique

4. Adopt standardized form for reconciling medications.\*
5. Place reconciling form in consistent, highly-visible location in patient chart.
6. Provide access to drug information and pharmacist advice at reconciling.
7. Improve access to complete medication lists at admission.

\*Includes both electronic and paper-based forms

## Support and Maintenance

8. Provide orientation and ongoing education on procedures for reconciling medications to all health care providers.
9. Provide feedback and ongoing monitoring (within context of non-punitive learning from mistakes/near misses).

**Reconciling Medications at Admission Practices for Promoting Medication Safety**  
*The following table provides additional context and discussion of implementation strategies to support the practices for reconciling medications at admission.*

<i>Practices</i>	<i>Strategies, Implementation Context</i>
<b><i>POLICIES</i></b>	
<p><b><i>1. Assign primary responsibility for reconciling to someone with sufficient expertise</i></b></p> <p><b><i>Establish context for shared accountability: the ordering physician, RN, and pharmacy work together to achieve accuracy</i></b></p>	<ul style="list-style-type: none"> <li>- Generally will be nurse for admission reconciling effort (floor nurse, admission nurse if there is one, triaging RN for ED admissions); can be pharmacist</li> <li>- Require pharmacist involvement for special situations (e.g. on high-risk meds, &gt;5 meds, elderly)</li> <li>- Involve case managers</li> <li>- Ensure accountability: verifier initials</li> <li>- Shared accountability: ordering MD w/ active role, when to stat page MD, when to call pharm, role of ED RN vs floor RN</li> <li>-Support communication against the authority gradient</li> </ul>
<p><b><i>2. Reconcile medications within specified time frames</i></b></p> <p>Within 24 hours of admission, with shorter time frames for specified drugs and/or upcoming administration times</p>	<p>Alternative specifications include strategies to vary time frame based on time of admission, medication risk:</p> <ul style="list-style-type: none"> <li>- before next therapeutically prescribed dose</li> <li>- before morning rounds</li> <li>- reconcile a specified set of high-risk medications w/in 4 hours of admission, others within 24 hours</li> <li>- Sample list of high-risk medications requiring 4-hour reconciling: antibiotics (?) insulins, antihypertensives-multiple dosing, antirejection, antiarrhythmics, inhalers antiseizure, antianginal, eye medications, pain medications, oral hypoglycemic agents-multiple dosing</li> </ul>

<i>Practices</i>	<i>Strategies, Implementation Context</i>
<p><b>3. Develop clear policies and procedures for the steps in the reconciling process</b></p>	<p><i>Copies of sample policies and procedures are provided in toolkit. Policies cover:</i></p> <ul style="list-style-type: none"> <li>- Generate patient’s home medication list</li> <li>- Compare that list to physician orders</li> <li>- Specify when to call/stat page physician to review discrepancies</li> <li>- Back-up procedures for special situations: unavailability of ordering physician, evening/weekend admissions</li> <li>- Process for nurses to pass off non-reconciled medications at shift change for follow-up by next shift</li> <li>- Identify high-risk situations requiring pharmacist involvement (e.g. on high-risk meds, &gt;5 meds, elderly)</li> <li>- Identify high-risk situations for involving specialist consults, case managers</li> <li>- Prohibit blanket orders such as “continue home meds”, “resume all meds”</li> </ul>
<p><b><i>TECHNIQUE</i></b></p>	
<p><b>4. Adopt standardized form for reconciling medications</b> At a minimum, form should include:</p> <ul style="list-style-type: none"> <li>-for each medication: dosage frequency date/time of last dose compliance with prescribed dosages and frequency -patient identification</li> <li>-allergies -space for verifier initials</li> <li>-physician signature line</li> </ul>	<p><i>Copies of sample forms being used successfully by organizations implementing reconciling are provided in Toolkit.</i></p> <p>Other items included on some forms: medication purpose, prescriber, pharmacy contact, weight, liver/kidney failure, pregnant/breast feeding, person providing information, checklists to help capture OTC, herbals</p>
<p><b>5. Place reconciling form in consistent, highly-visible location in patient chart</b></p>	<p>e.g. 1<sup>st</sup> sheet in chart; stapled on top special color</p>

<i>Practices</i>	<i>Strategies, Implementation Context</i>
<p><b>6. Provide access to drug information and pharmacist advice at reconciling</b> <i>Evidence-based: good data supporting benefits</i></p>	<ul style="list-style-type: none"> <li>- Offer failsafe backup plan to ensure pharmacist expertise is available 24/7 (pharmacist hotline, satellite pharmacy agreements, etc.)</li> <li>- Specify conditions when consult should be required (anticonvulsants, &gt;5 meds, patient not able to provide lists, abnormal dosages reported)</li> <li>- Provide access to drug information, available to clinicians at the time when it is needed; address access to computer terminals, access to up-to-date resources covering new drugs, infrequently used drugs, non-formulary drugs, etc.</li> </ul>
<p><b>7. Improve access to complete medication lists at admission.</b> <i>Recognize as a long-term strategy but fundamental patient safety issue—error prevention requires accurate medication list to reconcile new orders against</i></p>	<ul style="list-style-type: none"> <li>- Pharmacy-to-pharmacy fax transmission of medication regimen at time of admission to hospital whenever possible</li> <li>- Special initiatives for scheduled surgery: list generated at all pre-op medical risk assessment/clearances, pharm tech used to take medication history by phone</li> <li>- Provide completed medication wallet cards at discharge as starting point</li> <li>- Outreach to amb. clinics, SNFs, PCPs</li> <li>- Outreach in community (senior centers)</li> <li>- Develop open-access patient record including all prescriptions</li> </ul>
<p><b><i>SUPPORT &amp; MAINTENANCE</i></b></p>	
<p><b>8. Provide orientation and ongoing education on procedures for reconciling medications to all healthcare providers</b> Nursing, pharmacy, and clinical staff</p>	<ul style="list-style-type: none"> <li>- Involve nursing education department in project planning phase</li> <li>- Build training into orientation, in-service</li> <li>- Ensure clinicians well informed of errors prevented and efficiency gains</li> </ul>

<i>Practices</i>	<i>Strategies, Implementation Context</i>
<p data-bbox="268 326 810 358"><b>9. Provide feedback, ongoing monitoring</b></p> <p data-bbox="268 402 688 435">Needs to be implemented within</p> <p data-bbox="268 443 506 475"><b><i>culture of safety:</i></b></p> <ul data-bbox="289 483 726 589" style="list-style-type: none"> <li>- adopt a systems approach</li> <li>- create non-punitive environment</li> <li>- promote teamwork</li> </ul>	<ul data-bbox="1108 326 1881 662" style="list-style-type: none"> <li>- Define parameters for data collection clearly—ensure consistent measurement over time</li> <li>- Minimally, draw random sample of 20 charts/month (from units and/or patient population of implementation)</li> <li>– Have strategy to share results</li> <li>– Encourage reporting of errors identified through reconciling and potential hazardous conditions, within context of learning from mistakes/near misses</li> <li>– Ensure engagement of leadership</li> </ul>

# Reconciling Medications

## Keys to Successful Implementation

- **1) Evaluation of existing processes**
  - Create a high level flowchart of existing processes.
  - Assessment of where problem areas exist and identification of *need* for reconciling activity.
- **2) Active engagement of leadership**
  - Demonstrate need, ADE/PADE prevention, reductions in work, and rework associated with the management of medication orders.
  - Present progress to hospital leadership monthly—discuss errors that have been prevented by reconciling process, present charts displaying change measures, resourcing needs.
- **3) Start small**
  - One RN, one patient/one ordering MD, on one unit.
  - Test how reconciling process can be integrated most effectively with current work processes.
  - Thoroughly test forms in paper format before automating.
  - Moving too fast to spread change to other areas can be a mistake—ensure smooth process first.

# Reconciling Medications

## Keys to Successful Implementation

- **4) Teamwork**
  - Commitment to the process by nurses, pharmacists, and physicians is integral to achieving success.
  - Need clinical *champions*.
- **5) Access to drug information and pharmacist advice at decision point**
- **6) Structural support**
  - Developing policies and procedures to govern the medication reconciling process to provide standardization and quality to the process—ensure consistent policies for all disciplines.
- **7) Documentation tools**
  - Having the necessary forms to document the process fundamental to success.

# Reconciling Medications

## Keys to Successful Implementation

- **8) Working toward IT solutions (computerization and automation of the process)**
  - Software links integrating process into other activities—links with pharmacy systems (Meditech, Cerner, etc.) and medication administration records (MAR) for creating discharge order sheets, auto-generation of page 1 (2 & 3 also?) for SNF transfers.
- **9) Staff education**
  - Involve education department in the project planning phase (nurse education coordinator on team).
  - Ongoing staff education integral to maintaining gains—teach critical thinking skills, not just form use.
- 10) Partnering with patients/family**
  - Include a patient as a member of the reconciling implementation planning team.
  - Strategies to educate patients/families to participate in monitoring medications and maintaining accurate medication lists
- 11) Ongoing measurement**

## Reconciling Medications Implementation Planning Checklist

Task/Topic	Target date	Actual date completed	People responsible
<b>Identify project team</b>			
<b>Risk assessment</b> Develop baseline data			
<b>Develop AIM statement</b>			
<b>Engage leadership support</b>			
<b>Pick unit/target for 1<sup>st</sup> cycle of change</b>			
<b>Educate pilot unit</b>			
<b>Select reconciling form to pilot</b>			
<b>Pilot form</b> Pilot with 1 RN, 2-3 patients from target population			
<b>Modify form, clarify/ modify procedures, retest</b>			
<b>Train additional RN(s)</b> Pilot with 2-3 patients			
Continue change cycles to refine procedures			
<b>Plan rollout to next unit</b>			
<b>Plan staff education</b>			
<b>Measure</b> Monthly chart abstraction			

## Reconciling Medications: Planning Tests of Change

Task/Topic	Target date	People Responsible	Measure of Success

- Plan multiple cycles for a test of change
- Think a couple of cycles ahead
- Scale down size of test (# of patients, locations)
- Test with volunteers

- Work in parallel; engage more people
- Be innovative to make test feasible
- Collect useful data during each test
- Test over a wide range of conditions

Worksheet For Testing Change

Cycle # \_\_\_\_\_

Target Completion Date: # \_\_\_\_\_ /

**Aim**

Reduce the rate of unreconciled medications at admission by 75% within 9 months

**Plan**

Develop *Objectives, Tasks, and Predictions* for one of your tests of change

Describe the objective of your first (or next) test of change	Person Responsible	When to be done	Where to be done

List the tasks needed to set up this test of change	Person Responsible	When to be done	Where to be done

Predict what will happen when the test is carried out	Measures to determine if prediction succeeds

**Do**

Describe what actually happened when you ran the test

**Study**

Describe the measured results and how they compared to the predictions

**Act**

Describe what modifications will be made for the next cycle from what you learned

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