

20th Annual ASHP Conference for Pharmacy Leaders
Implementing a Proven Program to Take the Best Possible Medication History:
How to Run “Medication Reconciliation Practitioner (MRP) University” at Your Institution – Part 2



**Implementing a Proven Program to Take the Best Possible Medication History:
How to Run “Medication Reconciliation Practitioner (MRP) University” at Your Institution – Part 2**

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Objectives

- ❖ Define medication reconciliation and articulate the importance of performing an accurate medication history as a key component of medication safety
- ❖ Explain the steps for conducting and completing a best-possible medication history (BPMH) and the process for verifying its accuracy
- ❖ Demonstrate key BPMH competencies and evaluate trainees’ ability to demonstrate these competencies
- ❖ Demonstrate how key skills taught during the workshop may be taught to others locally to train them to take a BPMH and certify their competency
- ❖ Identify and demonstrate the appropriate mechanisms for providing feedback to trainees to facilitate improvement in their ability to conduct a BPMH



Day 2 Learning Objectives: Implementing MRP University

Workshop Attendees will become the trainers

- ❖ Articulate the most common barriers and facilitators to implementing medication reconciliation QI programs in general and BPMH training programs specifically.
- ❖ Make the case for change and return on investment (ROI) for designated resources committed to medication reconciliation support, including hiring/training staff in taking a BPMH.
- ❖ Compare and contrast the current state of practice as it pertains to medication reconciliation and the ideal state of practice.
- ❖ Demonstrate ability to translate key components of the taking a BPMH from day one into training others in these skills at home institutions.
- ❖ Demonstrate knowledge and skills to provide feedback and assess competency among trainees.



Agenda

- ❖ Skills Development
 - Observation, Feedback
 - Resources
- ❖ Small group simulation
 - This time focus is on the observer
- ❖ How to sell this to your organization
 - Make the case to your C-suite
- ❖ Final wrap-up
 - What are you going to do Monday morning?



Giving and Receiving Feedback

Special thanks to Pazo Valeria, M.D. - Brigham and Women’s Hospital

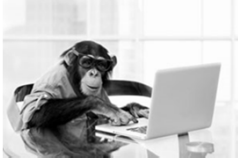


Learning Objectives

- ❖ Through practice we will:
 - Identify barriers to giving feedback
 - Identify components of effective feedback
 - Review techniques to giving “positive feedback”



Why Giving Feedback is Hard



- ❖ Lack of training, practice
- ❖ Culture of not giving feedback
- ❖ Safe environment?
- ❖ Perception of time commitment
- ❖ Skepticism re: change behavior
- ❖ Underestimation of importance
- ❖ Want to retain “good guy” status



We can change the culture

Be an active learner.

Do you care about me?

- ❖ Do you want to **help me succeed**, or are you more **interested in identifying my failures**?
- ❖ **Will you take the time** to communicate with me and **let me know how I am doing**?



Feedback FRAME-BASED APPROACH

- ❖ Similar to diagnostic approach in medicine
 - Listen to the “patient” (learner)
 - Make observations
 - Gather data
 - Formulate diagnosis
 - Make a Plan



12 Tips for Giving Feedback

1. Establish a respectful learning environment.
2. Communicate goals and objectives for feedback.
3. Base feedback on direct observation.
4. Make feedback timely and a regular occurrence.
5. Begin the session with the learner’s self-assessment.
6. Reinforce and correct observed behaviors.
7. Use specific, neutral language to focus on performance.
8. Confirm the learner’s understanding and facilitate acceptance.
9. Conclude with an action plan.
10. Reflect on your feedback skills.
11. Create staff-development opportunities.
12. Make feedback part of institutional culture.

Ramani S, Krackov S. *Medical Teacher*. 2012; 34:787-91.



Characteristics Associated with Proficiency in Feedback Skills

- ❖ Frequently attempting to detect and discuss the emotional responses of learners
- ❖ Proficiency in handling conflict
- ❖ Frequently asking learners what they desire from the interaction
- ❖ Having written down or reviewed professional goals in the prior year
- ❖ Frequently working with learners to establish mutually agreed-upon goals, objectives, and ground rules
- ❖ Frequently letting learners figure things out themselves, even if they struggle

Menachery E et al. *JGIM*. 2006; 21:440-6.



Other Advice

- ❖ Distinguish feedback from evaluation
- ❖ Focus on observable behaviors rather than on the trainees themselves
- ❖ Teacher and trainee should be working as allies, with common goals
- ❖ Feedback should be regulated in quantity and limited to behaviors that are remediable
- ❖ Feedback should be phrased in descriptive, non-evaluative language
- ❖ Feedback should deal with decisions and actions rather than assumed intentions or interpretations

Ende J. *JAMA*. 1983; 250:777-81.



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Principles of Positive Technique

- ❖ Encourage self-assessment and emphasize the positive
- ❖ Ask the trainee what went well
- ❖ List the tasks you thought the trainee did well
- ❖ Ask the trainee what could be improved
- ❖ Add any other things you think could be improved

Vickery AW, Lake FR, MJA. 2005; 183:267-8.



Applying This to History-Taking

- ❖ Set expectations up front, make clear this is for self-improvement, establish goals together
- ❖ Directly observe, do this regularly
- ❖ Focus on observed behaviors, compare to checklist
- ❖ Focus on accuracy of history
- ❖ First ask what went well, list tasks they did well
- ❖ Then ask what could be improved, then add as needed
- ❖ Avoid ad-hominem criticisms, be sensitive to their reactions, use neutral language, regulate quantity of feedback
- ❖ Make a plan for improvement with their involvement
- ❖ Have them identify best practices, then share with others
- ❖ Take the time to show you're invested in their improvement



Three-pronged Approach

- ❖ Simulated cases
 - Good for standardization, certification of competency, specificity of feedback
- ❖ Direct observation of actual cases
 - Best for ongoing assessments, realistic cases and systems, focus on behavior
- ❖ Measurement of medication discrepancies
 - Most relevant for patient care, allows for comparisons with usual care



Measurement of Discrepancies

- ❖ Used in MARQUIS study (and several others)
- ❖ New NQF-endorsed measure
- ❖ Procedure
 - Take gold-standard medication history
 - Compare to admission and discharge orders
 - If discrepancies in orders
 - If order is discrepant because history is wrong, that's a history error
 - If order is discrepant and history is right, it's either a reconciliation error or it's intentional → review chart +/- talk to the team if has potential for serious harm



Measurement of Discrepancies

- ❖ Outcome: number of discrepancies per patient
- ❖ Can also track type of discrepancies (omission, dose, etc.) and reason (history vs. reconciliation error)
- ❖ Even with a small sample of patients, can learn a lot of information
- ❖ Resources for measurement
 - Protocol, Paper Form, RedCap Form, SAS code



Medication Discrepancies

Appendix Item 4: Form for Documenting Medication Discrepancies

MRN: _____ Name (Last, First, Middle): _____ Admission Date: _____ Comparison Date/Time: _____
 Location: _____ Services: _____ Admitting Provider: _____ Discharging Provider (if different): _____
 Control Patient No Home Meds Patient Understanding of Medications:
 Intervention Patient Intervention Level (if Intense/Standard bundle instituted) High Medium Low
 Intense Standard Pharmacist reconciler Other trained staff

Medication	Confidence	PAHL Comparison	Admit Comparison	Discharge Comparison	Pharmacist Comments
Name	High Medium Low	Comparison/Difference Same Dose Route Frequency Substitution Additional med Formulation Other Details	Comparison/Difference Same Dose Route Frequency Substitution Additional med Formulation Other Details	Comparison/Difference Same Dose Route Frequency Substitution Additional med Formulation Other Details	Need to clarify from: <input type="checkbox"/> Before admission <input type="checkbox"/> After admission <input type="checkbox"/> order but before <input type="checkbox"/> to order <input type="checkbox"/> After discharge <input type="checkbox"/> order Recommended action: Action taken by team: if any Comments:
DOB					
Comments		Questions for provider	Reason Reconciliation Error History Error Intentional Documented Questions for provider	Reason Reconciliation Error History Error Intentional Documented Questions for provider	
Gold Standard		Provider Response	Provider Response	Provider Response	
Additional Med					

All Sources Used: Patient Patient's Family Caregiver Pharmacy Discharge Provider PAH Biller Pharmacy Med List Full DC Summary
 Clinical Records Other

General Comments:



Other Resources

- ❖ 6 cases
 - 3 from yesterday, 3 more from today
 - Observation checklists
- ❖ Didactic slide decks
- ❖ Videos of taking a BPMH
- ❖ MARQUIS materials



Handoff Simulations – Day 2



Handoff Simulations

- ❖ Split into groups of **three**.
- ❖ Play the role – **patient, clinician, observer** – listed on the packet you receive.
 - Each packet has specific instructions + supporting materials as needed
 - **10 minutes** to take the history
 - **5 minutes** for observer to give feedback
 - **5 minutes** for us to debrief as a group



Handoff Simulations

- ❖ This time the clinician (student) has been given instructions on what things to do well and what things to not do well
- ❖ Focus is now on the observer as teacher (you!)
 - Complete the observation form
 - Compare the history taken by the clinician to the answer key
 - Provide feedback
 - Packet has checklist of best practices in giving feedback



Handoff Simulations

- ❖ Faculty will be circulating and observing the feedback
- ❖ We will debrief each case as a group, focusing on the observer



Handoff Simulations: Case 1

- ❖ Patty Beaumont, 59-year-old female
- ❖ Admitted for chest pain, neck pain, and dyspnea while lying down during lumbar MRI
- ❖ PMHx: type 2 diabetes, anxiety, hypertension
- ❖ Occasional chest pain and leg swelling
- ❖ Last hospitalized 3 months ago




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Handoff Simulations: Case 1 Debrief	
Asks the patient open-ended questions about what medications she or he is taking (i.e., doesn't read the list and ask if it is correct)	Yes
Uses probing questions to elicit additional information: non-oral meds, non-daily meds, PRN medications, non-prescription meds (Doesn't ask about OTC or PRN meds)	No
Uses other probes to elicit additional medications: common reasons for PRNs, meds for problems in the problem list, meds prescribed by specialists (Doesn't ask about common reasons for PRNs)	No
Asks about adherence (but doesn't ask about side effects)	Yes
Uses at least two sources of medications, ideally one provided by the patient and one from another "objective" source (e.g., patient's own list and ambulatory EMR med list) (Really have just one list, from the pharmacy, since doesn't ID meds in pill box and clinician's list is 5 years old)	No
Knows when to stop getting additional sources (e.g., if patient has a list or pill bottles and seems completely reliable and data are not that dissimilar from the other sources, and/or the differences can be explained)	NA
Knows when to get additional sources if available (e.g., if patient is not sure, relying on memory only or cannot resolve discrepancies among the various sources of medication information)	Yes
When additional sources are needed, uses available sources first (e.g., pill bottles present). Then obtains pharmacy data. If the medication history is still not clear: obtains outpatient provider lists, pill bottles from home and/or other sources.	Yes
Uses resources like Drugs.com to identify loose medications (i.e., for a bag of medications, not in their bottles, provided by a patient)	No
Gets help from other team members when needed	No
Educates the patient and/or caregiver of the importance of carrying an accurate and up to date medication list with them	No


Handoff Simulations: Case 1 Debrief

- ❖ For final list, clinician likely:
 - Doesn't identify acetaminophen since doesn't ask about PRNs or OTCs
 - Does realize patient is on lisinopril/HCTZ since doesn't use pill identifier on meds in pill box
 - Doesn't know patient is having muscle aches on rosuvastatin




Did the observer?

- ❖ Put the clinician at ease
- ❖ Set expectations up front
- ❖ Ask the clinician what went well
- ❖ Note what the clinician did well, e.g., knew to get additional sources, including pharmacy, persistent with getting pharmacy records, asked about adherence, used some probes like meds for problems in problem list, non-oral meds
- ❖ Ask the clinician what they thought could have been improved
- ❖ Note what the clinician could have done better, especially using a pill identifier or get help with meds in pill box (or ask family to bring in pill bottles from home), asking about PRNs, OTCs, and side effects, educate patient about keeping a list




Did the observer? (cont'd.)

- ❖ Relate the process issues to the inaccuracies in the final list, likely leaving off acetaminophen, missing non-adherence with lisinopril/HCTZ, missing side effect to rosuvastatin
- ❖ Focus on remediable observable behaviors rather than personality traits or intentions
- ❖ Use neutral language
- ❖ Act sensitively to the clinician's reactions
- ❖ Regulate the quantity of feedback
- ❖ Make a plan for improvement with clinician's involvement
- ❖ Finish with encouragement, take the time to show he/she is invested in the clinician's improvement



Handoff Simulations: Case 2

- ❖ Harry Vicente, 48-year-old male
- ❖ Chronic lymphedema, frequent admissions for diuresis and leg pain
- ❖ Admitted for increased left lower extremity edema and pain
- ❖ PMHx: asthma, depression, type 2 diabetes, hypertension, chronic pain, gout



Handoff Simulations: Case 2 Debrief	
Asks the patient open-ended questions about what medications she or he is taking (i.e., doesn't read the list and ask if it is correct)	No
Uses probing questions to elicit additional information: non-oral meds, non-daily meds, PRN medications, non-prescription meds	No
Uses other probes to elicit additional medications: common reasons for PRNs, meds for problems in the problem list, meds prescribed by specialists	No
Asks about adherence	No
Uses at least two sources of medications, ideally one provided by the patient and one from another "objective" source (e.g., patient's own list and ambulatory EMR med list)	Yes
Knows when to stop getting additional sources (e.g., if patient has a list or pill bottles and seems completely reliable and data are not that dissimilar from the other sources, and/or the differences can be explained)	NA
Knows when to get additional sources if available (e.g., if patient is not sure, relying on memory only or cannot resolve discrepancies among the various sources of medication information)	Yes
When additional sources are needed, uses available sources first (e.g., pill bottles present). Then obtains pharmacy data. If the medication history is still not clear: obtains outpatient provider lists, pill bottles from home and/or other sources.	Yes
Uses resources like Drugs.com to identify loose medications (i.e., for a bag of medications, not in their bottles, provided by a patient)	Yes
Gets help from other team members when needed	Yes
Educates the patient and/or caregiver of the importance of carrying an accurate and up to date medication list with them	Yes

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Handoff Simulations: Case 2 Debrief

- ❖ For final list, clinician likely:
 - Only catches ipratropium bromide/albuterol 3 mL neb q6h prn SOB/wheezing by calling the pharmacy, but doesn't know how often patient uses it (uses a few times a week) for asthma
 - Thinks patient is taking: potassium chloride extended-release 20 meq (#2 10 meq tablets) by mouth daily but is not
 - Misses acetaminophen 500 mg (1 tablet) by mouth every eight hours for pain
 - Misses patient recently went a few days without a few of his medications including amlodipine and metformin due to pharmacy not being able to deliver meds



Did the Observer?

- ❖ Put the clinician at ease
- ❖ Set expectations up front
- ❖ Ask the clinician what went well
- ❖ Note what the clinician did well, e.g., knew to get additional sources, including pharmacy, loose meds, knew to use a pill identifier or to get help, educated the patient about keeping a list
- ❖ Ask the clinician what they thought could have been improved
- ❖ Note what the clinician could have done better, especially start with an open-ended question rather than reading off a list (even if have one), ask about OTCs, PRNs, common reasons for PRNs, non-oral meds, non-daily meds, meds for problems on the problem list, meds prescribed by specialists.



Did the Observer? (cont'd.)

- ❖ Relate the process issues to the inaccuracies in the final list, likely leaving off acetaminophen, thinking patient is still on potassium, not knowing how often patient takes ipratropium/albuterol, missing non-adherence with amlodipine and metformin (note that the inaccuracies could have been worse)
- ❖ Focus on remediable observable behaviors rather than personality traits or intentions
- ❖ Use neutral language
- ❖ Act sensitively to the clinician's reactions
- ❖ Regulate the quantity of feedback
- ❖ Make a plan for improvement with clinician's involvement
- ❖ Finish with encouragement, take the time to show he/she is invested in the clinician's improvement



Handoff Simulations: Case 3

- ❖ Cynthia Tucker, 68-year-old female
- ❖ Admitted for likely GI bleed
- ❖ PMHx: hypertension, stroke, hypothyroidism, seizure disorder, knee pain
- ❖ New to this hospital



Handoff Simulations: Case 3 Debrief

Asks the patient open-ended questions about what medications she or he is taking (i.e., doesn't read the list and ask if it is correct)	Yes
Uses probing questions to elicit additional information: non-oral meds, non-daily meds, PRN medications, non-prescription meds (Does not ask about OTCs, non-oral meds)	No
Uses other probes to elicit additional medications: common reasons for PRNs, meds for problems in the problem list, meds prescribed by specialists (Does not ask about meds for problems in the problem list)	No
Asks about adherence	Yes
Uses at least two sources of medications, ideally one provided by the patient and one from another "objective" source (e.g., patient's own list and ambulatory EMR med list)	Yes
Knows when to stop getting additional sources (e.g., if patient has a list or pill bottles and seems completely reliable and data are not that dissimilar from the other sources, and/or the differences can be explained)	NA
Knows when to get additional sources if available (e.g., if patient is not sure, relying on memory only or cannot resolve discrepancies among the various sources of medication information)	Yes
When additional sources are needed, uses available sources first (e.g., pill bottles present). Then obtains pharmacy data. If the medication history is still not clear: obtains outpatient provider lists, pill bottles from home and/or other sources.	Yes
Uses resources like Drugs.com to identify loose medications (i.e., for a bag of medications, not in their bottles, provided by a patient)	NA
Gets help from other team members when needed	NA
Educates the patient and/or caregiver of the importance of carrying an accurate and up to date medication list with them	No

Handoff Simulations: Case 3 Debrief

- ❖ For final list, clinician likely:
 - Doesn't know about ibuprofen, baby ASA, MVI, and albuterol



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Did the Observer?

- ❖ Put the clinician at ease
- ❖ Set expectations up front
- ❖ Ask the clinician what went well
- ❖ Note what the clinician did well, e.g., knew to get additional sources, including pharmacy, loose meds, knew to use a pill identifier or to get help, educated the patient about keeping a list
- ❖ Ask the clinician what they thought could have been improved
- ❖ Note what the clinician could have done better, especially start with an open-ended question rather than reading off a list (even if have one), ask about OTCs, PRNs, common reasons for PRNs, non-oral meds, non-daily meds, meds for problems on the problem list, meds prescribed by specialists.



Did the Observer? (cont'd.)

- ❖ Relate the process issues to the inaccuracies in the final list, likely leaving off acetaminophen, thinking patient is still on potassium, not knowing how often patient takes ipratropium/albuterol, missing non-adherence with amlodipine and metformin (note that the inaccuracies could have been worse)
- ❖ Focus on remediable observable behaviors rather than personality traits or intentions
- ❖ Use neutral language
- ❖ Act sensitively to the clinician's reactions
- ❖ Regulate the quantity of feedback
- ❖ Make a plan for improvement with clinician's involvement
- ❖ Finish with encouragement, take the time to show he/she is invested in the clinician's improvement



Discussion

- ❖ Can you see doing this at your own institutions?
- ❖ What barriers do you see?
- ❖ What about observing clinicians interviewing “real” patients?



Implementing Medication Reconciliation Practitioner (MRP) University at Your Institution



Logistics

- ❖ Personnel
 - Are personnel already doing this job?
 - If not, are personnel available who could be re-allocated to this job?
 - If not, can you hire new personnel?
 - If not, how can you get the resources to do this?



Logistics


- ❖ Hiring
 - Pharmacy staff vs. residents vs. students vs. techs
 - Qualifications
 - Know medications cold
 - Competency in top 200 med list
 - Social “people people”
 - Passionate about this work
 - Service-minded
 - Community pharmacy experience often helpful



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Logistics

- ❖ Training
 - Didactic lecture (we will give you)
 - Videos of medication history-taking (ditto)
 - Simulated cases (ditto) with feedback
 - Watch an expert do this (either you or personnel already doing it)
 - Certification of competency
 - Direct observation of 3 cases
 - Simulated case




Logistics

- ❖ Training
 - Will likely need local modification
 - How to use the local EHR to gather information, document histories
 - Details of local issues (community pharmacies, affiliated practice groups, local regulations, etc.)
 - Additional points you want to emphasize, e.g.
 - Interviewer is audible, uses patient-friendly language, shows respect, adapts positioning to engage the patient, maintains eye contact, maintains control of the interview, maintains organization, uses appropriate pace, etc.
 - Add back the things we cut from the role-plays (e.g., introduction/explanation, 2 patient identifiers, allergies, pharmacy and provider contact information, etc.)




Ongoing Assessment

- ❖ Periodic check-in meetings
- ❖ Sharing of best practices
 - Living document
- ❖ Ongoing direct observation of actual cases
- ❖ Competency in documentation within EHR
- ❖ Measurement of medication discrepancies
 - Most relevant for patient care, allows for comparisons with usual care, helps prove ROI
 - Alleviates concerns that errors are increasing




Measurement of Discrepancies

- ❖ Used in MARQUIS study (and several others)
- ❖ New NQF-endorsed measure
- ❖ Procedure
 - Take gold-standard medication history
 - Compare to admission and discharge orders
 - If discrepancies in orders
 - If order is discrepant because history is wrong, that’s a history error
 - If order is discrepant and history is right, it’s either a reconciliation error or it’s intentional → review chart +/- talk to the team if has potential for serious harm



Measurement of Discrepancies

- ❖ Outcome: number of discrepancies per patient
- ❖ Can also track type of discrepancies (omission, dose, etc.) and reason (history vs. reconciliation error)
- ❖ Even with a small sample of patients, can learn a lot of information
- ❖ Resources for measurement
 - Protocol, Paper Form, RedCap Form, SAS code




Medication Discrepancies

Appendix Item 4: Form for Documenting Medication Discrepancies

MRN: _____ Name (Last, First): _____ Admission Date: _____ Comparison Date/Time: _____
 Location: _____ Service: _____ Admitting Provider: _____ Discharging Provider (if different): _____
 Control Patient No Home Meds Patient Understanding of Medications:
 Intervention Patient Intervention Level (if Intense/Standard bundle instituted) High Medium Low
 Intense Standard Pharmacist reconciler Other trained staff


Medication	Confidence	PAML Comparison		Admit Comparison		Discharge Comparison		Pharmacist Comments
		Same	Difference	Same	Difference	Same	Difference	
EMR	High Medium Low	Same Date Frequency Substitution Additional med Formulation Other Details	Omission Error	Same Date Frequency Substitution Additional med Formulation Other Details	Omission Error	Same Date Frequency Substitution Additional med Formulation Other Details	Omission Error	Need to update team: <input type="checkbox"/> Before admission <input type="checkbox"/> After admission <input type="checkbox"/> Before discharge <input type="checkbox"/> After discharge Recommended action: Action taken by team: ? P# _____ Comments: _____
MRN		Questions for provider		Reason Reconciliation Error History Error Intentional Documented Questions for provider		Reason Reconciliation Error History Error Patient Expired Intentional Documented Questions for provider		
Comments		Provider Response		Provider Response		Provider Response		
Gold Standard								
Additional Med								

All Sources Used: Patient Patient's Family Caregiver Pharmacy Occupational Provider PH Bottles P1's Own Med List Patient Summary
 Change Record: CERN Other Details




Summary of Resources

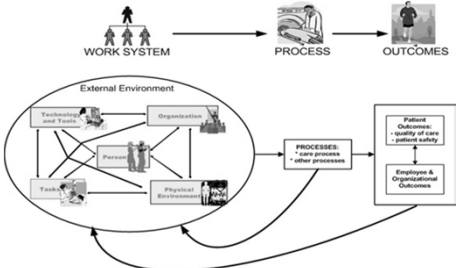

- ❖ 6 cases
 - 3 from yesterday, 3 more from today (re-written to be used to evaluate clinicians)
 - Observation checklists
- ❖ Didactic slide decks
- ❖ Videos of taking a BPMH
- ❖ Materials for measuring discrepancies
- ❖ MARQUIS materials, including pocket cards



Barriers to Implementation




SEIPS Model of Work System and Patient Safety


Barriers

- ❖ Task
 - Too complex
- ❖ Organization
 - Lack of institutional commitment, leadership, QI experience; competing priorities, financial problems
- ❖ Hospital/Unit
 - Insufficient training, problems with policies/procedures, unclear goals/expectations, lack of authority given to front-line leadership, lack of feedback, culture that inhibits interdisciplinary teamwork, lack of commitment to safety
- ❖ Staff and patients
 - Required help from others not available, not valued by other clinicians, staff burnout, difficult patient population
- ❖ Technology/Tools (like computer systems, templates)
 - Inadequate materials, supplies, tools, technology, information to do the job




Barriers

❖ This is what you’ve said so far this conference:



Barriers


- ❖ Which of these barriers do you see as the biggest ones?
- ❖ What other barriers do you see?



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Overcoming Barriers

- ❖ Let's start with resources
 - Do you have them?
 - Can you get them?
 - Who do you need to convince?




Overcoming Barriers

- ❖ Making the business case for medication reconciliation resources
 - Decreased inpatient ADEs → decreased costs, shorter LOS under prospective payment system
 - Decreased readmissions → decreased financial losses due to bundled payments, capitated health plans, ACO contracts, readmission penalties
 - Decrease in malpractice claims
 - Increase in efficiency of other personnel



Overcoming Barriers

- ❖ Making the business case for medication reconciliation resources (continued)
 - Increase in patient engagement
 - Increase in staff satisfaction
 - Increase in referring provider satisfaction → increased market share



ROI Calculator: ADEs

ROI Analysis to Perform Medication Reconciliation Upon Patient Hospital Admission
 Based on Inpatient ADE Reduction
 Return on Investment (ROI) Analysis

Table 1: ROI ASSUMPTIONS TABLE The following assumptions are made about the "mo

Average number of unintentional medication discrepancies in admission orders per patient based on MARQUIS Study	2.0
Number of inpatient admissions per year	35,000
Potential medication errors per year that can be avoided with improved pharm	70,000
% of avoided medication errors that would be harmful to the patient ^A	0.90%
% of errors that can be prevented by pharmacists	75%
Total avoided harmful medication errors per year	473
Cost of harmful medication error to hospital ^B	\$4,655
Annual savings to hospital as a result of avoided harmful medication errors	\$2,199,488
Time (in minutes) required per admission for pharmacist to complete a medication admission history and perform medication reconciliation	21
Pharmacist hours required per year to perform medication reconciliation	12,250
Pharmacist FTE required per year to perform medication reconciliation	5.9
Pharmacist FTE needed to add to budget to staff FTEs (benefit time, etc)	7.7
Pharmacist salary ^C	100,000
Pharmacist fringe benefit rate	35%
Total labor cost per pharmacist FTE	\$135,000
Total labor cost for all additional pharmacist medication reconciliation FTEs	\$1,033,594

A. Literature demonstrates that 0.9% of medication errors (1 in 100 errors) result in an adverse drug event.
 B. Literature demonstrates that a preventable adverse drug event increases the mean cost of hospitalization by \$4,655 (1993 dollars, updated to 2012).
 C. Literature demonstrates that a preventable adverse drug event increases the mean cost of hospitalization by \$4,655 (1993 dollars, updated to 2012).

ROI Calculator

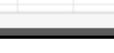
Table 2: Medication Reconciliation Model ROI (NOTE: numbers inserted directly from Table 1)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Capital Purchase						
Remodeling - space for new clinical pharm	\$20,000					
Total Capital Expenses	\$20,000	N/A	N/A	N/A	N/A	N/A
Ongoing Operating Expenses						
Additional pharmacist labor required for medication r	\$1,033,594	\$1,054,266	\$1,075,351	\$1,096,658	\$1,118,795	
Total Annual Operating Expenses	\$1,033,594	\$1,054,266	\$1,075,351	\$1,096,658	\$1,118,795	
Ongoing Savings						
Adverse drug event (ADE) treatment costs avoided ¹		\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488
Institution specific sensitivity analysis ²		\$0	\$0	\$0	\$0	\$0
Total Annual Savings Potential		\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488
Total Annual Net Savings (Cost)		(\$20,000)	\$1,165,894	\$1,145,222	\$1,124,137	\$1,102,630
Cumulative Net Savings (Cost)		(\$20,000)	\$1,145,894	\$2,291,116	\$3,415,252	\$4,517,882
						\$5,598,574

1. This calculation assumes that 1 per 100 medication errors avoided as a result of pharmacist-performed medication reconciliation would have resulted in a harmful adverse drug event had the error not been intercepted by the pharmacist (see assumptions table for details). Organizations may wish to use a more conservative estimate based on their own analysis.
 2. In addition to the above stated patient safety benefits, additional benefits may accrue as a result of pharmacist-performed medication reconciliation activities. It is up to each organization to determine whether or not financial savings should be included in the above ROI as a result of these savings. The ROI assumes no financial savings from these benefits.

Other Advantages:

- Reduced litigation expense for hospital
- Improved pharmacist, nurse and physician satisfaction, resulting in improved staff recruitment and retention.
- Improved physician trust in clinical pharmacists, thus making future targeted pharmacist-led drug cost reduction efforts more achievable.
- Public relations benefit for the hospital.
- Improved regulatory compliance.



ROI Calculator: Pharm Tech

Table 1: ROI ASSUMPTIONS TABLE
 The following assumptions are made about the "model" hospital. These assumptions drive all cost figures in the ROI analysis table below. Each hospital must provide its own information into this assumptions table to derive institution-specific estimates for the ROI analysis. Updating the assumptions table will automatically revise figures in the ROI table.


Average number of unintentional medication discrepancies in admission orders per patient based on MARQUIS Study	2.0
Number of inpatient admissions per year	35,000
Potential medication errors per year that can be avoided with improved pharmacist-conducted medication histories and reconciliation	70,000
% of avoided medication errors that would be harmful to the patient ^A	0.90%
% of errors that can be prevented by pharmacists	75%
Total avoided harmful medication errors per year	473
Cost of harmful medication error to hospital ^B	\$4,655
Annual savings to hospital as a result of avoided harmful medication errors	\$2,199,488
Time (in minutes) required per admission for pharmacist to complete a medication admission history and perform medication reconciliation	21
Pharmacist hours required per year to perform medication reconciliation	12,250
Pharmacist FTE required per year to perform medication reconciliation	5.9
Pharmacist FTE needed to add to budget to staff FTEs (benefit time, etc)	7.7
Pharmacist Technician salary	40,000
Pharmacist fringe benefit rate	35%
Total labor cost per pharmacist FTE	\$54,000
Total labor cost for all additional pharmacist medication reconciliation FTEs	\$413,438


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ROI Calculator: Pharm Tech


Table 2: Medication Reconciliation Model ROI (NOTE: numbers inserted directly from Table 1)


	Year 0	1	2	3	4	5
Capital Purchase						
Remodeling - space for new clinical pharmacists	\$20,000					
Total Capital Expenses	\$20,000	N/A	N/A	N/A	N/A	N/A
Ongoing Operating Expenses						
Additional pharmacist labor required for medication reconciliation	\$413,438	\$421,706	\$430,168	\$438,743	\$447,518	
Total Annual Operating Expenses	\$413,438	\$421,706	\$430,168	\$438,743	\$447,518	
Ongoing Savings						
Adverse drug event (ADE) treatment costs avoided ¹		\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488
Institution specific sensitivity analysis ²		\$0	\$0	\$0	\$0	\$0
Total Annual Savings Potential		\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488	\$2,199,488
Total Annual Net Savings (Cost)	(\$20,000)	\$1,786,050	\$1,777,781	\$1,769,347	\$1,760,744	\$1,751,969
Cumulative Net Savings (Cost)	(\$20,000)	\$1,766,050	\$3,543,831	\$5,313,178	\$7,073,923	\$8,825,892




- ### Talking to the C-Suite
- ❖ CMO
 - ❖ CNO
 - ❖ CFO
 - ❖ CQO
- 

- ### Chief Medical Officer
- ❖ Current risk to physicians, who at the end of the day are responsible for medication errors and patient harm
 - ❖ Don't currently give this the attention it deserves, too many competing priorities
 - ❖ This creates role clarity, frees up their time to do other things, improves care
 - ❖ Note: still have a role in this process
- 

- ### Chief Nursing Officer
- ❖ Conversation will depend on their current role in medication history-taking
 - ❖ If currently do it
 - Need to be careful that don't insult them
 - Wouldn't it be better if they had help, especially with more menial tasks?
 - Frees them up to focus on what they do best
 - Can still address medication issues
 - Need to reassure them they won't lose their jobs
- 

- ### Chief Nursing Officer
- ❖ If don't currently take medication histories, should be an easy sell
 - ❖ Still worth getting their support
 - ❖ Can talk about role clarity
- 

- ### Chief Quality Officer
- ❖ Should be an easy sell, but they need to become passionate about this issue
 - ❖ Provide numbers on current error rates
 - ❖ Ideally, provide local data
 - This usually dwarfs rates of other kinds of errors
 - ❖ Supplement with local stories if possible
 - ❖ Discuss evidence for benefit
- 

Chief Financial Officer

- ❖ Usually the biggest critic and the one most important to the decision-making process
- ❖ Need to convince them it really saves money
- ❖ No, it really does
- ❖ Focus on inpatient ADEs – that’s the clearest angle
- ❖ The others are more subtle but can be powerful depending on your hospital’s situation



Addressing Other Barriers

- ❖ Culture
 - This one is the hardest to change but often the most important
 - In this case, staff will welcome the help
 - But they will still need to understand their role
 - Double-checking the list
 - Doing additional tasks if needed
 - Doing the entire task if not seen downstairs
 - Role clarity under different circumstance



Your Role as Residents

- ❖ Look for Med Rec Support Note
 - Take additional actions as recommended
 - If no action recommended, make sure no new medication sources have emerged since then
- ❖ If no Med Rec Support Note
 - Take medication history yourself
 - Document properly in EMR



Tasks You Might Be Asked To Do

- ❖ Call outpatient pharmacy
- ❖ Ask patient’s family to bring in pill bottles from home, go over them with patient/family
- ❖ Contact outpatient providers



Not All Patients Will Receive Med Rec Support

- ❖ Patients admitted through ED off hours
- ❖ Direct admissions
- ❖ Outside hospital transfers

- ❖ In these cases, you will have to take medication histories yourself



Addressing Other Barriers


- ❖ Task
 - Balancing quality with time/effort
 - Keeping it as simple as possible
 - Maintaining consistency and standardization over time and among personnel



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Addressing Other Barriers

- ❖ Organization
 - Cultivating local leadership, QI experience
 - Keeping this a priority
 - Ongoing data will help
 - Avoiding staff being stolen for other priorities
 - Find clinical champions
 - Get an “executive champion”




Addressing Other Barriers

- ❖ Unit
 - Educating and training other personnel about their roles (have slide deck for this)
 - Making clear policies and procedures for each role
 - Setting clear goals, providing feedback, giving sufficient authority to local leadership




Addressing Other Barriers

- ❖ Staff and Patients
 - Creating clear lines of supervision
 - Making help available when needed
 - Debriefing difficult patient encounters

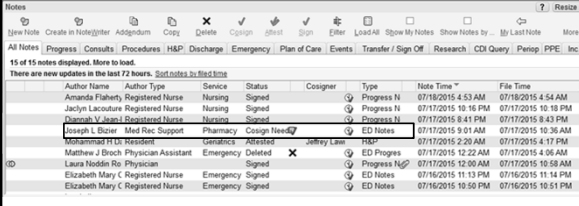


Addressing Other Barriers


- ❖ Technology and Tools
 - Make sure MRPs have correct permissions within the EHR to do their job
 - Creating note templates
 - Make sure their notes are recognizable to others
 - Tracking patients seen by MRPs
 - Creation of reports: who’s been seen
 - Access to pre-admission med sources: local pharmacies, local physicians, etc.



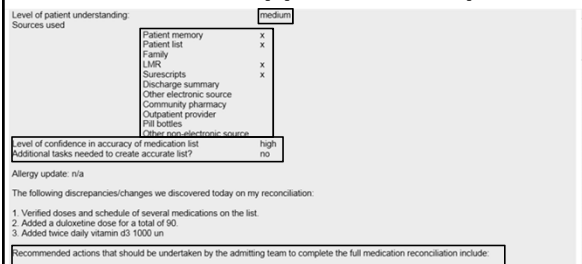
Med Rec Support Note: Epic



Author Name	Author Type	Service	Status	Cosigner	Type	Note Time	File Time
Amanda Flaherty	Registered Nurse	Nursing	Signed		Progress N	07/16/2015 4:53 AM	07/16/2015 4:54 AM
Jaclyn Lacourse	Registered Nurse	Nursing	Signed		Progress N	07/17/2015 10:16 PM	07/17/2015 10:18 PM
Danah V. Jean J	Registered Nurse	Nursing	Signed		Progress N	07/17/2015 8:41 PM	07/17/2015 8:43 PM
Joseph L. Bizer	Med Rec Support	Pharmacy	Signed		ED Notes	07/17/2015 9:01 AM	07/17/2015 10:36 AM
Matthew J. Broch	Physician Assistant	Emergency	Deleted		ED Progress	07/17/2015 12:22 AM	07/17/2015 4:06 AM
Laura Nordin Re	Physician		Signed		Progress N	07/17/2015 12:00 AM	07/17/2015 10:58 AM
Elizabeth Mary C	Registered Nurse	Emergency	Signed		ED Notes	07/16/2015 11:13 PM	07/16/2015 11:14 PM
Elizabeth Mary C	Registered Nurse	Emergency	Signed		ED Notes	07/16/2015 10:50 PM	07/16/2015 10:51 PM



Med Rec Support Note: Epic



Level of patient understanding: **medium**

Sources used	
Patient memory	x
Patient list	x
Family	x
LMR	x
Surescripts	x
Discharge summary	x
Other electronic source	
Community pharmacy	
Outpatient provider	
Pill bottles	
Other non-electronic source	

Level of confidence in accuracy of medication list: **high**
 Additional tasks needed to create accurate list? **no**

Allergy update: n/a


The following discrepancies/changes we discovered today on my reconciliation:

1. Verified doses and schedule of several medications on the list.
2. Added a duloxetine dose for a total of 90.
3. Added twice daily vitamin d3 1000 un.

Recommended actions that should be undertaken by the admitting team to complete the full medication reconciliation include:

1. none

Home medication per the electronic medical record are as follows:



Addressing Other Barriers

- ❖ Other Barriers



Discussion

- ❖ Barriers
- ❖ Facilitators
- ❖ Customization



Small Group Exercise

- ❖ Make the case to your C-suite:
 - Groups of 4, prepare case for:
 - CMO
 - CNO
 - CQO
 - CFO
 - Give each other feedback
 - 5 minutes to prepare, each give for 2 minutes each, 7 minutes for feedback



Small Group Exercise: Debrief

- ❖ How did it go?
- ❖ What was easy? What was hard?



Group Simulation


- ❖ 3 volunteers to present their arguments to the group
 - CMO or CNO
 - CQO
 - CFO



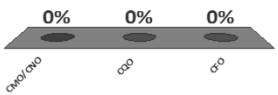
Group Simulation

- ❖ Group Discussion
 - What did you think?
 - Were they persuasive?
 - What was good about them?
 - How could they be improved?



Which argument was most persuasive? 


A. CMO/CNO
 B. CQO
 C. CFO



A 3D bar chart with three bars, each labeled '0%' above it. The x-axis labels are 'CMO/CNO', 'CQO', and 'CFO'.


Success Stories

- ❖ Presbyterian
 - Initial proposal: deploy pharmacy techs to ED of all Novant hospitals to gather BPMH of all admitted patients within 24 hours
 - Rationale: improved patient safety, TJC NPSG, Novant long-term goal, known barriers to PAML accuracy
 - Pilot done at 2 facilities, 7 months of data
 - Higher % of PAMLs accurate c/w usual care
 - Potentially harmful errors reduced with pharm techs




Success Stories

- ❖ Presbyterian (continued)
 - Other advantages: patient satisfaction, saves RN time, MD satisfaction, institutional reputation
 - Estimated costs of full implementation based on 45 admissions from ED
 - Estimated cost-benefits using ADE prevention ROI and local data on errors: net cost avoidance
 - During MARQUIS study, increased hours of coverage, developed “measure-vention”




Success Stories

- ❖ Brigham and Women’s Hospital
 - Proposed more pharmacist FTE in 2013
 - BPMH in ED
 - Discharge counseling on the floors
 - Rejected due to financial concerns but also concern about overlap with nursing role in discharge counseling
 - Tried again in 2014
 - Eliminated discharge counseling piece
 - Made it all the way to last step (CFO), who killed it along with all other proposals for new funding




Success Stories

- ❖ Brigham and Women’s Hospital (continued)
 - Tried again in 2015
 - Epic about to go live, concern for increased discrepancies during transition: dedicated proposal just for first 2 months of implementation
 - Under Department of Quality and Safety
 - Pharmacy students
 - Accepted
 - Second, long-term proposal, similar to previous years, but with pharmacy technicians
 - Also accepted



Success Stories

- ❖ Brigham and Women’s Hospital (continued)
 - Success factors
 - Epic as motivator, then didn’t want bridge to nowhere
 - Less expensive with use of techs
 - New CFO, former head of ED
 - Pharmacist staffing ratio historically low compared with other AMCs
 - Proposals available upon request



Final Wrap-Up



Ideal vs. Reality

❖ What are you going to do Monday morning?



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