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Medication Safety

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Edition 3: Volume 1

Medication Reconciliation:

From Med Wreck to Med Rec – One Hospital's Improvement Story

When asked, "What keeps a hospitalist up at night?" Jeff Shapiro, MD, hospitalist at Citrus Valley Health Partners-Foothill Presbyterian Hospital answered, "Well, I can tell you it used to be medication reconciliation" (med rec).

"Before re-engineering our process, we had concerns about the quality and accuracy of the original medication list," Dr. Shapiro says. "That list is the basis of safe

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A New Year's Resolution: To Improve Medication Safety

At the forefront of the movement to improve medication safety, the Institute for Safe Medication Practices (ISMP) has been collecting and analyzing medication error reports over the past 35 years and sharing those "lessons learned" with the health care community. Additionally,

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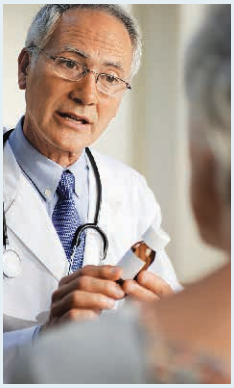
Interviewing Like a Pro:

Tips for Obtaining an Accurate Medications History



Obtaining an accurate medications list from a patient can be a painstaking endeavor with dubious payoff.

Experts advise tapping into multiple sources of information, including the patient's pharmacy, their physicians, and family members. Also, interview questions should be scripted to include prompts that maximize recall. Obtaining histories from older adults – 17 to 19 percent of whom are taking 10 or more different types of medications in a given week[1] – presents a unique challenge. Additionally, patients

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"Despite the rapid and unprecedented change in health care, one thing is constant — physician expertise will

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Medication Reconciliation

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prescribing. If a patient is admitted and needs to continue on anticoagulants or is taking something that might interact with what I plan to prescribe, I need to know about it! In the past, we did our best with our time and resources, but now we have dedicated pharmacy technicians performing medication reconciliation—a clear process with clear ownership and accountability—as well as outcome data to support that the list is complete and accurate. I'm definitely sleeping better!"

Dr. Shapiro's concerns are supported by an abundance of data concerning medication risks. As the mainstay therapy of modern medicine, medication errors represent the most common type of patient safety error: the average hospitalized patient is subject to at least one medication error per day,[1] about 20 percent of which will result in harm.[2]

The risk is augmented during care transitions – 40 percent of medications errors are attributed to inadequate reconciliation during handoffs at admission, transfer, and patient discharge; and 72 percent of post-discharge adverse events are related to medications.[3] Although conservative prescribing, improved patient education, and technological advances such as barcoding and CPOE are certain to improve medication safety, a reconciled medication list is considered the cornerstone of prevention.

> "As the mainstay therapy of modern medicine, medication errors represent the most common type of patient safety error"

Capturing an accurate and complete medication list, reviewing it, and ensuring its accuracy and appropriateness at every single transition point, is essential to patient safety.

The Joint Commission defines medication reconciliation as a five-step process: 1) develop a list of current medications; 2) develop a list of medications to be prescribed; 3) compare the medications on the two lists; 4) make clinical decisions based on the comparison; and 5) communicate the new list to appropriate caregivers and to the patient. Seems straightforward, right?

But medication reconciliation has never been simple and remains one of the single greatest process improvement challenges in health care — from the archeological feat of piecing together an accurate patient medications list from multiple, incomplete sources, to defining and enforcing the respective roles of doctors, nurses, and pharmacists across a myriad transition points and clinical settings. Historically, med rec has always seemed, well, a bit of a wreck. Even the Joint Commission, who named medication reconciliation as a National Patient Safety Goal for hospital accreditation in 2006, mercifully simplified its original 17-element goal to five elements of performance — acknowledging the "good faith efforts" of professionals involved in capturing an accurate and complete medication list.

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40% 40 percent of medication errors are attributed to inadequate handoffs.

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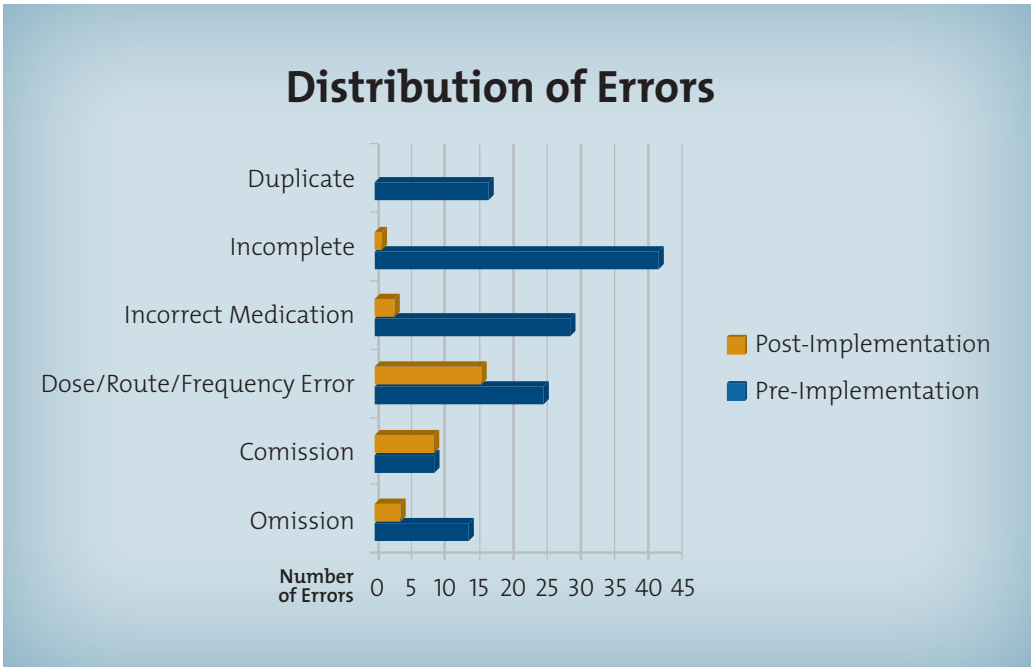

One Hospital's Improvement Story

"Obtaining an accurate medications list when the patient first presents is the foundation of all safe prescribing that follows. But obtaining that original list is painstaking work," says Dr. Ed Jai, PharmD and Corporate Director of Pharmacy for Citrus Valley Health Partners. "You're relying on the patient's memory—and that's often the memory of someone who may have cognitive deficits, low health literacy, or even someone who isn't feeling well enough to clearly recall their medications," he explains. "Or, you're relying on a previous medications list that may or may not be current and accurate. Relying on any one source may only tell part of the story. Doing it well means approaching med rec like an investigation and drawing on a number of sources — interviewing the patient and family, contacting the patient's local pharmacy or his or her primary care provider, searching pharmacy databases, or relying on family to bring in the patient's medications. The obvious issue here is that nurses and physicians are far too busy with procedures and patient care to do all of this extra work."

Establishing Accurate Baseline Data

"We knew we needed to improve, but our first goal was to really understand where we stood and to capture accurate baseline data for our pre-implementation process," says Dr. Jai. "This is a very labor intensive process."

To establish baseline data, 30 patient profiles with prior-to-admission medications were subjected to expert review by pharmacists whose job it was to ascertain the accuracy of the lists and to identify any unintended discrepancies between what was documented and what should have been documented. These "unintentional discrepancies" include such errors as: medication omissions, or omitting a medication that the patient takes; commissions, or adding a medication the patient does not take; dose, route and frequency errors; and incorrect and incomplete medications. Pre-implementation, the reconciliation accuracy rate was about 55 percent, compared to an astonishing 96 percent, post-intervention.

The Path to Improvement

Under Dr. Jai's direction and the expertise of a multi-disciplinary team, Citrus Valley embarked on a year-long quality improvement project to improve accuracy and reduce the error rate in their medication reconciliation process. Using "best-practice" research and Lean Six Sigma principles, the team trained and deployed pharmacy techs to perform medication reconciliation in two of their hospital emergency departments. Their results were truly impressive: They reduced their overall error rate by nearly 40 percent and increased their accuracy rate for all medications to almost 96 percent. The greatest gains were in reducing the percentage of errors associated with "class III" high-risk medications like narcotics, antibiotics, and anticoagulants, where unintended discrepancies are associated with increased likelihood of patient morbidity and mortality. Errors for this class of medications were reduced from 9.60 percent to 1.27 percent. In addition, the human resource savings was substantial (and greatly appreciated) by physicians and nurses who were spared countless hours of additional work and given more time for direct-patient care.

Expanding the Role of the Pharmacy Technician

"Some of the literature showed very promising results using pharmacy techs to conduct the initial medications reconciliation interview," says Dr. Jai. The improvement team identified pharmacy techs with an interest in direct patient interaction and provided intensive training to prepare them for their new role. He adds, "There's a definite strategy to interviewing patients. You want to ask questions in a way that triggers memory.

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Medication Reconciliation

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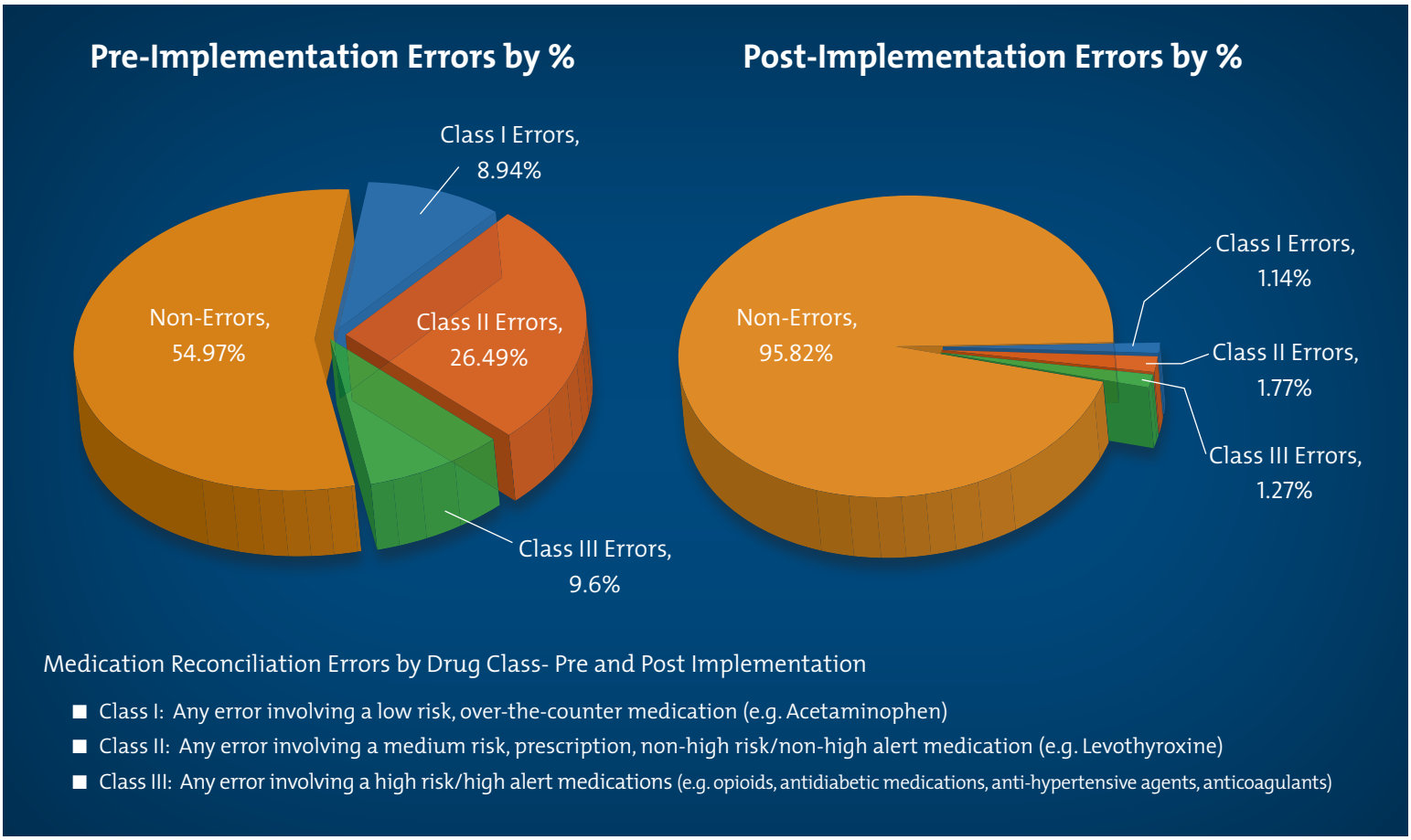

Medication Reconciliation Errors by Drug Class- Pre and Post Implementation

- Class I: Any error involving a low risk, over-the-counter medication (e.g. Acetaminophen)
- Class II: Any error involving a medium risk, prescription, non-high risk/non-high alert medication (e.g. Levothyroxine)
- Class III: Any error involving a high risk/high alert medications (e.g. opioids, antidiabetic medications, anti-hypertensive agents, anticoagulants)

It's important to use both open-ended and closed-ended questions, and to pick up on clues in the record. For example, if there's a prescription for glucose test strips, the next question would be to ask if the patient is taking insulin." To help technicians perfect their interviewing and investigation skills, the team provided formal training, including simulation exercises and feedback and coaching from direct observation. Additionally, technicians are provided support materials, to guide them when evaluating information from different sources.

It's All About the Process: Ongoing Measuring and Monitoring

"To ensure that our process continues to yield the best outcomes, we continue to analyze several process measures including tracking start to complete time, recording allergies, classifying medications, and tracking whether the technician inquired about OTCs and supplements, the completeness of the order, as well as the number of medication sources used by the technician," says Dr. Jai. "Most importantly, the technician must carefully document any noted discrepancies among sources. For example, the patient's medication bottle may state he is taking 5 mg of an antidiabetic agent, when the patient actually takes 2.5 mg due to a previous hypoglycemic event." These discrepancies are then reviewed and resolved by the pharmacist. The end result is a list the prescribing physician can rely on with a high degree of confidence.

In addition to fantastic outcome measures, Jai commented that pharmacy technicians have experienced a very satisfying expansion in their roles. "I think the technicians understand that their work is integral to the success of the team in safely treating the patient," he notes. "Physicians and nurses are thrilled to have the extra support and an accurate and complete medications list. Everyone wins – especially the patient!" Ed Jai, PharmD, would like to acknowledge, Paul Morris, PharmD, Clinical Coordinator, for leading the Medication Reconciliation initiative at Citrus Valley Medical Center-Queen of the Valley, and for providing the data analysis.

1. Institute of Medicine. Preventing medication errors. Washington, DC: National Academies Press; 2006.
2. Rozick JD, Howard RJ, Justeson JM, et al. Patient Safety standardization as a mechanism to improve safety in health care. JT Comm J Qual Saf. 2004; 30(1):5-14.
3. Forster AJ, Clark HD, Menard A, Dupuis N, Chernish R, Chandok N, et al. Adverse events among medical patients after discharge from hospital. CMAJ. 2004; 170(3):345–349.

Interviewing Like a Pro

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with low health literacy and those with cognitive impairment require the help and input of family and caregivers.

■ Make It Meaningful:

Inform patients and their families that obtaining an accurate and complete medications list is essential to safely prescribing medications while the patient is in the hospital. Explain that obtaining an accurate list ensures that the medications the patient needs will be ordered and that those that might cause harmful interactions won't.

■ But It's Natural!:

While health care professionals are well aware of harmful interactions that occur when prescription medications interact with supplements, OTCs, and herbal preparations, your average patient may not volunteer this information, regarding all substances of this type as "healthy" or "harmless." When interviewing, ask about prescription medications as well as over–the-counter medications, supplements, vitamins, herbal preparations, and nutraceuticals.

■ Digging Deeper–Uncovering Nonadherence:

Just because it's on the list, doesn't mean the patient is taking his or her medication or taking it as he or she should. It's important to not only ask *if* they're taking it, but *how* they're taking their medication. Polypharmacy, inconvenient scheduling, prolonged duration of therapy, excessive cost, unpleasant side effects, low health literacy, and simple forgetfulness are but a few causes of patient nonadherence.

Estimates of medication nonadherence typically range from 30 to 60 percent, with nonadherence being greatest for patients who are symptom free.

■ Ask and Then Ask Again! Trigger Recall by Rephrasing the Question:

- Ask about doctors – Asking about a particular doctor may trigger patient recall: "What medications does your kidney doctor prescribe? What about your heart doctor?"
- Ask about diagnoses – Reviewing a problem list can offer insight into medications: "Are you currently taking any medication for your heart condition? For your arthritis?"
- Ask about frequency – Patients often forget to include medications with infrequent dosing: "Are there any medications that you take daily, weekly, or monthly?"
- Ask about route – In addition to inquiring about oral medications, ask patients about patches, eye drops, ear drops, injectables, and topical medications: "Is there any medication that you put on your skin?"
- Ask about location – A mental tour of the home may yield discoveries: "Do you have any medications in your kitchen, on your nightstand, in your bathroom?"
- Ask about the latest new meds, stopped meds, and changed meds.
- Ask about OTCs for common conditions – "What do you take when you get a headache?" Do you take anything to fall asleep? Do you take any laxatives? What do you take for allergies? Do you take any pain medication?"

1. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. National Action Plan for Adverse Drug Event Prevention. Washington, DC: 2014: 5.

Adapted from Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. 2012; AHRQ Publication No. 11(12)-0059: 43.

New Year's Resolution *continued from Page 1*

the ISMP has developed Targeted Medication Safety Practices for Hospitals 2014-12015--consensus-based best-practices for specific medication safety issues that continue to cause fatal and harmful errors in patients.*

The start of the New Year is the perfect time to recommit to improving medication safety by adopting these ISMP best-practices. Check your own progress in improving medication safety in your hospital!

Targeted Medication Safety Practices for Hospitals 2014-2015

❑ BEST PRACTICE 1:

Dispense vinCRIStine (and other vinca alkaloids) in a mini-bag of a compatible solution and not in a syringe.

❑ BEST PRACTICE 2:

a) Use a weekly dosage regimen default for oral methotrexate. If overridden to daily, require a hard stop verification of an appropriate oncologic indication;
b) Provide patient education by a pharmacist for all weekly oral methotrexate discharge orders.

❑ BEST PRACTICE 3:

Measure and express patient weights in metric units only. Ensure that scales used for weighing patients are set and measure only in metric units.

❑ BEST PRACTICE 4:

Ensure that all oral liquids that are not commercially available as a unit dose product are dispensed by the pharmacy in an oral syringe.

❑ BEST PRACTICE 5:

Purchase oral liquid dosing devices (oral syringes/cups/droppers) that only display the metric scale.

❑ BEST PRACTICE 6:

Eliminate glacial acetic acid from all areas of the hospital*

*Laboratory use excluded if the lab purchases the product directly from an external source.

*These best practices have been reviewed by an external expert advisory panel and approved by the ISMP Board of Trustees.
For further information, visit: http://www.ismp.org/tools/bestpractices/TMSBP-for-Hospitals.pdf

Chief of Staff Boot Camp®

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always be in demand and will continue to define quality of care," says Susan Reynolds, MD, PhD, president and CEO of The Institute for Medical Leadership, which provides leadership training and executive coaching to health care executives and physician leaders across the U.S.

"Physicians know medicine. They are the ones who understand if the standard of care has been met or if good medicine is being practiced," Dr. Reynolds explains. "Because of this, CEOs and executive leaders intent on meeting their quality and reimbursement goals are well-advised to engage physicians as leaders and to co-create with them. The partnership is essential."

According to Dr. Reynolds, the prescription for alignment includes opening up a robust dialogue between executive leaders and physicians to generate insight into each other's perspective more clearly. "In my Chief of Staff Boot Camps,® I use a simple role reversal exercise to help each group better understand each other's performance challenges and needs and discuss ways they can support each other. First, I ask the MDs to imagine that they are CEOs and ask them, 'As a CEO, what is it you want and what do you need to be successful?' Then, I ask the CEOs to think like MDs and tell me what they want and need to be successful. Both groups ultimately realize that they share the same fundamental goals: Both MDs and executive leaders are in business and need to survive. Pragmatically, both need their incomes to exceed their expenses, and both need increased operational efficiency without compromising the quality of patient care."

Dr. Reynolds' Chief of Staff Boot Camps® are designed to provide leaders with the tools necessary to work collaboratively with peers, hospital administration, and staff members. In addition to honing executive-level leadership and communication skills, the curriculum provides chiefs and medical executive committee members with a working understanding of important topics such as:

- Health care trends
- Physician leader success factors in an era of reform
- Emerging roles for physician leaders
- Quality and patient safety initiatives
- Value-based purchasing and ACOs
- TJC updates
- Tools for quality improvement: credentialing, privileging, and peer review
- Dealing with disruptive physician behavior
- Hospital finance

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