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**Medical Home Series Two Part XIV**
**Medication Reconciliation: AMA, NQF, ISMP**
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Why is medication reconciliation a subject worthy of special consideration in a medical home setting? To answer that question, consider active conversations which went on among high school students during the 1940s, 1950s and 1960s. Whereas Latin was and still is a part of a classical education – one of my granddaughters will graduate from high school having had four years of Latin – these discussions were about how the study of Latin would help a student who is interested in medicine as a career. Little did those students know that essentially the only place where Latin was of any use was in writing prescriptions. Some of the common Latin prescription abbreviations used on prescriptions by physicians included:

- ac (ante cibum) means "before meals"
- bid (bis in die) means "twice a day"
- gt (gutta) means "drop"
- hs (hora somni) means "at bedtime"
- od (oculus dexter) means "right eye"
- os (oculus sinister) means "left eye"
- po (per os) means "by mouth"
- pc (post cibum) means "after meals"
- prn (pro re nata) means "as needed"
- q 3 h (quaque 3 hora) means "every 3 hours"

Perhaps, we should include *ad nauseam* in this list? Fortunately, the use of Latin abbreviations in medicine is decreasing and hopefully will soon be eliminated.

There was a time, actually quite recently, when the "magic and mystery" of medicine was considered part of the art of medicine and often actually probably made people "feel" safer. Patients had enormous trust in their physicians and looked upon them as their most favored and MOST trusted counselors. Prescriptions written in Latin were reassuring to the patient who believed that their very-well-educated physician knew more than they did because he or she could write a prescription which they, the patient, could not understand. Most patients took one or two prescriptions a year. Today that number ranges from 25 to 44 prescriptions a year for patients 65 years-of-age and older, depending upon the State in which the patient lives. Medication regimes are much more complicated and are changed much more frequently.

There were not many medications in the 1940s. In the *Health Care financing Review* (Winter, 1996/ Volume 18, Number 2, p. 15), it is stated, "Many of the changes in clinical medicine by the early 1960s were the result of pharmaceuticals: the antibiotics, psychotropics, tranquilizers, hormones, and other drugs. It was estimated that 90 percent of the drugs prescribed in 1960 had

been introduced in the previous two decades and that 40 percent of the prescriptions could not have been filled in 1954."

The good news was progress increasingly made valuable and useful pharmaceuticals available for treating patients. The bad news was that more and more people were taking multiple medications, some with complicated "sig" codes (written instructions in Latin) and others with an increasing number of serious interactions. The first pitfall in dealing with these interactions is "to rely upon your memory in assessing medication interactions." There are too many of them for any one person to remember all of them.

The following developments created an environment where accurate medication lists in provider records and accurate understanding by patients of what medications they were to take as well as when and how to take them became imperative:

- The number of medications grew, – today there are over 10,000 prescription medications and over 300,000 over-the-counter drugs.
- The "magic and mystery" of the medical profession decreased both because of an increasingly knowledgeable populace and because of a decreasing trust in physicians.
- More and more people were taking more and more complex medications
- Medications had increasingly serious and dangerous side effects and interactions.
- Technology created these new medicines and it would take technology to keep track of them.

A major sociological shift took place in the United States as well. Demand increased to take all of the magic and mystery out of medicine. Hospitals required that abbreviations, particularly Latin abbreviations not be used in hospital records. Medication lists given to patients were required to be written in English instead of Latin abbreviation, i.e., instead of "Sig: 1 po qid," medication directions were required to be written in "Directions: one tablet by mouth four times per day."

As early as the mid, 1970s, healthcare professionals and organizations like the Institute for Safe Medication Practices (ISMP), which describes itself as "A Nonprofit organization educating the medical community and consumers about safe medication practices," began to raise the alarm about the need for safe medication practices. In a 2007 publication entitled, *Protecting U. S. Citizens From Inappropriate Medication Use*, ISMP stated, "3.4 billion prescriptions (were) dispensed in 2005…an increase of nearly 60% since 1995…81% of adults…take at least one medication…and 27% take five."

Magic and Mass: The magic of medicine was gone and the mass of medicines had increased. Both are good things but both require new skills and attentiveness by providers. Medication reconciliation is the most important result of these changes. And, it is still a fact that one of the two most difficult tasks facing all healthcare providers is maintaining an accurate and up-to-date medication list on all patients.

In 2010, the National Quality Forum (NQF) published a study entitled *Preferred Practices and Performance Measure for Measuring and Reporting Care Coordination: a Consensus Report*. One of the critical quality measures is Medication Reconciliation. One of those measures is

described as: 'The plan of care document should include essential clinical data documenting the patient's current state, including, but not limited, to problem lists, medication lists, allergies and risk factors, age-appropriate standardized clinical assessments and screening tests; immunizations status…". Repeatedly, medication reconciliation is included as an essential part of care transitions at every point whether the transfer of care was made from clinic to home, hospital to ambulatory care, emergency department to nursing home, hospital to hospice, hospital to skilled nursing facility, hospital to long term acute care or other transitions.

**Physician's Role in Medication Reconciliation (all of the following information is from this AMA monograph)**

In 2007, the American Medical Association published its monograph entitled, *The Physician's Role in Medication Reconciliation: Issues, Strategies and Safety Principles*. The preface gives this warning to physicians: "Medication Reconciliation is essential to optimize the sage and effective use of medications. It is one element in the process of therapeutic use of medications and medication management for which physicians are ultimately held legally accountable…" The document then gives illustrations of harm to patient and legal disasters for physicians when transitions of care were made without effective medication reconciliation.

The AMA documented that in between 2004 and 2005, "in the United States 701,547 patients were treated for an adverse drug event (ADE) in emergency departments and 117,318 patients were hospitalized for injuries caused by an ADE. Insulin, warfarin and other drugs that require monitoring to prevent overdose or toxicity were implicated in one of every seven ADEs treated in emergency departments."

**Over-the-counter drugs**

The report stated, "Interactions between prescription medications and over-the-counter (OTC) drugs, herbal preparations or supplements are a growing concern, as concurrent sue can lead to serous adverse reactions." And, "in all settings of care, drug-drug interactions are significant but undetected cause of ADEs."

## Steps and Principles of Medication Reconciliation

**Steps**:

1. Assembling the list**S** of medications – notice the word is "lists," not list. In a recent meeting about a regional health information exchange (HIE) an alarm was raised by the potential need to reconcile medication lists from five to ten locations. The response was that the good news was that for the first time, all providers would know that patients were getting medication from multiple sources and providers would have access to the "real" lists for medication reconciliation.
2. Ascertaining accuracy (review and compare prior and new lists)
3. Reconciling medications and resolving discrepancies
4. Formulating a decision, i.e., making a medical judgment, with respect to the patient's condition and medications.

5. Optimizing care to best meet the patient's needs with this information.
6. Checking the patient's (and/or caretaker's) understanding of their medications
7. Documenting changes and providing the patient with a copy of his or her current medication list.

**Principles**

1. Medication reconciliation is a necessary component of safe medication management. The process is ongoing and dynamic
2. The medication reconciliation process should be patient-centered.
3. Shared accountability between healthcare professionals and patients is essential to successful medication reconciliation outcomes.
4. All patients should have an accurate medication list for use across sites of care and over time.
5. The medication list should not be limited to prescription drugs.
6. Within all settings, the medication reconciliation process should happen at every medication encounter, regardless of the care location.
7. Across all setting, the medication reconciliation process must happen at every transition in the patient's care, regardless of the care transition.
8. The process of medication reconciliation is interdisciplinary and interdependent – and reliant on a team approach.
9. Physicians are ultimately responsible both ethically and legally for the medication reconciliations process.
10. Some medication information may be emotionally or legally charged, but nevertheless significant. It may be added at the discretion of the patient or prescribing health care professional by mutual consent.

**Questions which will help with Medication Reconciliation**

1. What medications do you take? Can you tell me the names of all your medications, including vitamins, OTC drugs, supplements and neutraceuticals.
2. What is it important to take your medications?
3. When do you take this medication? How long have you been taking this medication? Do you have a medical condition? What medical Condition?(s) do you have? What did you doctor say to you about this medication?
4. How do you take your medications (e.g., time of day, with food)?
5. Are you taking you medications the way the doctor told you to? When was the last time you took it? When was the time before that?
6. What do you do when you make a mistake? Do you every skip medication or take tow when you miss a dose?
7. Is your medication making you feel better or worse or no change?
8. What other medications, herbals, supplement, neutraceuticals, drops or sprays are you taking? Do you take other drugs that a physician has not prescribed?
9. From where do you get your medications? A local pharmacy? Mail order? The Internet? From another country? Other?

10. Who buys the medications in your family? Should we talk to him or her to make sue we have a complete list of all the medicines you take?

**Giving Patients a List of Medications at Each Care Encounter**

Reconciled Medication lists should be given to all patients at every point of transitioning of care and should include the following:

- A Reconciled List of Medications including Over the Counter, Herbal and Supplements
- Instructions in English (not Latin) for dosage, directions and timing of prescription
- A list of the patients allergies
- The date and time of the Reconciliation
- The person who did the reconciliation
- The contact information for the Reconciliation

**Strategies to Assist Patient Understanding**

1. Use plain, nonmedical language.
2. Slow down
3. Break information down, use short statements.
4. "Chunk and check" or organize information into tow or three key concepts, then check for understanding. Aim for a fifth to sixth grade reading level on all written information.
5. Use communication aids to assist in conversations, discussions or education sessions with patients, families and care givers.

    1) Offer to read materials aloud and explain
    2) Underline, highlight or circle key points.
    3) Provider a trained interpreter, when appropriate.
    4) Use visual aids to help patients navigate the health care system and understand health information.

6. Ask patients to teach-back what they were told\

    1) We have gone over a log of information. In your own words, can you review for me what we have discussed? How will you make it work at home?
    2) Sometimes I give a lot of information. Can you let me know what you heard me say? This helps me make sure I gave you the information you want and need/

**Conclusion**

Medication Reconciliation is hard and it is critical. The dynamic nature of medications being taken creates the complexity of maintaining and accurate lists as does the fact that most patients on multiple medications are being seen by two to seven providers annually. The probability for medication reconciliation to result in accuracy in medication administration is increased by the frequency of reconciliation being completed, particularly when each reconciliation is thorough. If a patient has ten to fifteen medication reconciliations or more per year, adverse medication

events will decline and hopefully disappear. Such reconciliations are time consuming and require perseverance, but the result will be increased safety and improved care with decreased cost.