Polypharmacy: Making it all Work

Kathy Wilson, RPh, RWSIR Director of Pharmacy

Polypharmacy can be defined as the use of multiple medications for the treatment of a patient's medical conditions. The term polypharmacy suggests that more medication is being used than is clinically indicated. The number of meds taken by a patient that constitutes polypharmacy has not been defined. There are several reasons for poly pharmacy:

1) As the population ages, polypharmacy increases. The elderly often require multiple medications to treat multiple health-related conditions.
2) Patients with multiple co-morbid medical conditions also require numerous medications to treat each condition. It is not unreasonable for patients with multiple comorbid medical conditions to be on 6 to 9 medications to reduce his or her long term risk for those conditions, i.e, diabetes complications and coronary events.
3) A recent hospitalization also puts you at risk of polypharmacy. Medicines are started and stopped quite frequently during your hospital stay.
4) Multiple doctors are prescribing medications for the same patient. Once a patient starts a medication, it is never discontinued.
5) Doctor changes from one med to another within the same therapeutic class; but the patient doesn't stop taking the first med. For example: You are taking Protonix 40mg and Dr. gives you a prescription for Prevacid 30mg. Both of these drugs are in the same therapeutic class "Proton Pump Inhibitors" and work the same way. No one should be on both these meds. Prescription drugs switching to over-the-counter (OTC) status is another problem area in this therapeutic class. A patient may take Prilosec (OTC) and get a script for Protonix, Prevacid,, etc. This is why it is so important that you take all the meds you take on a regular basis with you when you go to the doctor.
6) Doctors also may have a patient on a brand name drug and write the next prescription for a generic drug. Example: A patient is taking Coumadin 5mg daily; the Doctor gives patient a prescription for Jantoven 5mg, another tradename for Coumadin. The patient continues to take both not realizing they are the same medication. This could have devastating consequences.
7) In an effort to cut costs, patients fill prescriptions at several pharmacies. Once you choose the most cost-effective pharmacy, stick to one pharmacy. One pharmacy would have a complete list of all your meds to better inform you of duplications, interactions, etc.
8) Lack of patient education is the most common reason. Doctors don't inform patients or patients do not ask questions.

Polypharmacy in of itself is not problematic. Consider, for instance, a patient with type 2 diabetes and existing coronary heart disease who has received a recent coronary stent for myocardial infarctiion. It is not unreasonable or uncommon for this patient to be on 6 to 9 medications to reduce his or her long term risk for diabetes complications and secondary coronary events. In fact, strict adherence to national treatment guidelines for this patient will result in a minimum of 6 concurrent prescription therapies.

Polypharmacy can, however, become problematic when negative outcomes occur. Polypharmacy has been shown to result in:

1) unnecessary and/or inappropriate medication prescribing
2) increased risk for drug interactions and adverse drug reactions
3) nonadherence
4) increased overall drug expenditures.

The prescribing of inappropriate medication often results in polypharmacy. For example, an 85-year old woman is prescribed Elavil® (amitriptyline) 50mg at bedtime for insomnia. Common side effects include constipation, urinary incontinence, dizziness, dry mouth, and dry eyes. To "treat" the side effects, a prescriber may prescribe Senokot® for constipation, Ditropan® for urinary incontinence, and eye drops for dry eyes. Here, the prescribing of one therapy to treat insomnia results in a total of four medications.

Mark H. Beers, MD, a gerontologist, has been advocating the use of criteria-developed through consensus panels for identifying inappropriate use of medications. He states that "the use of a medication is appropriate if its use has potential benefits that outweigh potential risks". His first list was developed specifically with the frail elderly nursing facility resident in mind. In 1997, Beers updated his criteria to include medication inappropriate in all patients over 65 years old. Pharmacists can use both sets of criteria in prescription processing and drug regimen review to improve the pharmacotherapeutic regimens of their elderly patients.

Treatment of Polypharmacy

1. **Maintain an accurate medication and medical history**. Identify all medications, including any OTC therapies. Having a complete list of medications can deter a provider from adding on an additional therapy. Further, knowledge of a specific medication being used may explain a patient-specific symptom or complaint. For example, knowing a patient is on an opiod analgesic may explain why he or she has constipation. A complete history of the patient's medical condition also is important. Identifying the patient's medical history allows the pharmacist to identify inappropriately prescribed medications. For instance, metformin is not appropriate for patients with end-stage kidney disease.
2. **Link each prescribed medication to a disease state.** Each medication should match a patient's diagnosis. Any medication that does not match a diagnosis is potentially unnecessary, and an attempt to discontinue the medication should be made. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) is a not-for-profit (nongovernmental) organization. Its mission is to improve the safety and quality of care provided to the public through the provision of health care accreditation and related services that support performance improvement in health care organizations. JCAHO recognized this problem and instituted Medication Management Standard 3.10 in 2005, which states "*Only medications needed to treat the patient's condition are ordered"*. This means that prescribers of accredited facilities (RWSIR is accredited by JCAHO) are required to write indications for all medications prescribed (or at least mention somewhere in the chart why the patient is taking that medication).
3. **Identify medications that are treating side effects.** The use of multiple medications leads to a higher risk of side effects. When side effects occur, additional medications can be initiated to treat the side effect. A common example includes the use of laxatives to treat the medication side effect of constipation. Other examples include:
    - The use of sleeping meds to treat insomnia caused by theophylline, prednisone & antidepressants
    - Aricept® (Donepezil) to treat cognitive impairment caused by obybutynin,/tolterodine, antihistamines, opiods, and benzodiazepines

    Discontinuing one drug that is causing a side effect can often lead to the discontinuation of several drugs.

4. **Initiate interventions to ensure adherence.** Using combination products (i.e., lisinopril/hydrochlorthiazide combination pill) will reduce overall pill number and potentially improve adherence. Other strategies include using generic options to reduce cost and using adherence aids such as pillboxes.
5. **Reconcile medications upon discharge from hospital or skilled nursing facility.** As mentioned above, a risk factor for polypharmacy includes recent hospitalization. The transfer of a patient from a hospital to his or her home is associated with adverse events and negative outcomes, most of which are related to changes in the patient's drug therapy during treatment in these facilities. Evaluating a patient's medication regimen and educating a patient upon discharge from a facility is likely to reduce duplicate therapy, inappropriate prescribing, and reduce unnecessary medication. JCAHO has recognized this and made medication reconciliation a 2005 National Patient Safety Goal for all accredited hospitals.
6. **Prevention.** The appropriateness of the medication for the patient and the potential for side effects must be considered. As the old adage goes, "an ounce of prevention is worth a pound of cure". Any drug that is unnecessary, inappropriate, or has a high likelihood for causing side effects that would require additional therapy should be avoided.

Role of Pharmacists

The role of the pharmacist in the prevention and treatment of polypharmacy differs depending on the health care setting. Long-term care pharmacists routinely evaluate drug therapy regimens in predominantly elderly patients. They adhere to federal regulations with the goal of reducing negative outcomes associated with polypharmacy. Hospital pharmacists review the complete and accurate list of the patient's medications, evaluate this list for drug therapy problems that arise when medications are discontinued and initiated during hospitalization. Community pharmacists play a vital role in polypharmacy by preventing the dispensing of unnecessary, inappropriate, and side effect-prone medication.

Role of Consumer

By being an informed consumer, you can help prevent polypharmacy. The following is a list of steps to help you get started:

1) The **most important** thing you can do is **get involved** in your healthcare. Studies show that you have better outcomes when you are involved. Don't be afraid to ask questions.
1) Know the name and strength of the medications you take, their indications, side effects, and drug interactions.
2) Buy generics whenever possible. When you start on a new medication, ask for samples. You may not be able to tolerate it and can change meds before you get a prescription filled.
3) Brown-bag it: take all your meds including prescriptions, over-the-counter (otc) meds, and dietary/herbal supplements with you when you go to the doctor's office or hospital. You can keep a list, but you have to constantly keep it up-to-date. Remember that otc's are medications and can interact with your prescription meds. The latest news reports have covered the potential interaction where Prilosec® (Omeprazole) decreases the antiplatelet effect of Plavix®(clopidrogel). With the majority of data suggesting this, patients thinking about buying OTC omeprazole might be wise to buy an histamine (H2) antagonist (Pepcid® or Zantac®) at this time.
4) Have someone (spouse, friend) go with you to the doctor. Two ears are always better than one!
4) Ensure dietary/herbal supplements are safe before taking. Long term efficacy has not been determined. The majority of data concerning these products are derived from small trials with poor study design.

These so-called natural products are not regulated by FDA, and stronger data supporting their efficacy is needed. For now, look for the USP seal on the label. Only supplements bearing this mark have been verified by US Pharmacopeia that the bottle contains the ingredients listed on label; is free of harmful contaminants; will properly release into body, and was made using good safe manufacturing processes. To become "savvy supplement user", see these Websites:
http://www.cfsan.fda.gov/~dms/ds-savvy.html
http://dietary-supplements.info.nih.gov
http://nccam.nih.gov (1-888-NIH CAM)
www.ftc.gov

5) Store meds in a cool, dry place; preferably someplace where you can remember to take them (on the kitchen table if you take meds with meals or at the bedside if you take at bedtime). Be sure to keep these meds out of the reach of small children.
9) Ask your pharmacy for flip-top lids if you have a hard time opening the child-resistant lids.
10) If you can't remember if you've taken your meds, try a med dispenser. You can fill them up weekly, and you know at the end of the day if you have taken them or not.
11) Expiration date: The date at which the manufacturer can no longer guarantee the full effect of the medication.
12) Be environmental friendly and avoid flushing and pouring discontinued/expired medications down the sink. Instead, mix meds in cat litter or coffee grounds and place them in the trash.

Different Forms of Therapy

Approximately 4 out of every 10 adults report the use of some type of complementary and alternative medicine (CAM). The most common forms include natural products, deep breathing exercises, meditation, chiropractic or osteopathic manipulation, massage and yoga. CAM use is complementary in nature and is used in conjunction with our conventional medicine. Unfortunately, the forms of CAM that have the best evidence of efficacy, such as acupuncture, have lower rates of use in the survey. The concerns about cost of a conventional therapy could inspire patients to consider CAM over standard treatments, especially given the current economic environment.

Remember, the most important step in preventing negative outcomes regarding polypharmacy is **getting involved** in your own healthcare. Become an informed consumer. All medications (prescriptions and over-the-counter) have risks as well as benefits. As a consumer, you must weigh the benefits vs. the risks carefully before taking. You must appreciate the power of medicine, the value of meds when used properly and the consequences when used improperly.. You have both the responsibility and the duty of learning about how to take each medication safely.

References:

- Facts and Comparisons 4, Review of Natural Products, Wolters Kluwer Health, Inc.
- *Common Polypharmacy Pitfalls,* Pharmacy Times, 1.09, Joseph P. Vande Griend, PharmD,BCPS
- *Americans and CAMS,* Pharmacy Today, p.18, February 2009.
- *Getting Back to Nature,* Pharmacy Today OTC Supplement, pp. 16-17, February 2009.

- *Patients Need to Know: OTCs interact, too,* Pharmacy Today OTC Supplement, p. 20, February 2009.
- Fact Sheet on FDA's Strategy for Dietary Supplements; Nov 4, 2004.
- *Reducing Therapeutic Duplication Successful at the Dispensing Level,* Managed Care, pp. 12-13, August 2008.
- *The FDA, Vitamins, and the Dietary Supplement Industry,* U.S. Pharmacist, pp. 10-15, October 2008.