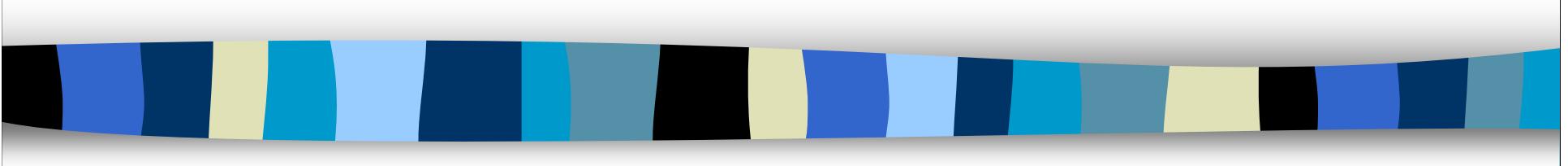


# Safe Medication Use in the Older Adult



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# Epidemiology and Costs

- Up to one-third of hospital and one-half of nursing home admissions of older adults are associated with **medication problems** (Frisk PA, Walchle RC, Cooper JW, J Clin Pharmacol 1975, AJHP 1977, Cons Pharm 1987)
- Almost one-third of medications taken are not given by pts. on drug history. **pharmacist-nurse teamwork increases Hx knowledge and problem detection** . Cooper JW, Walchle RC, McKercher PL. Physician, pharmacist and nurse-conducted drug histories. Contemp Pharm Pract 1980;3:75-78.
- Half to two-thirds of these problems are due to drug misuse; one-third to one-half are due to adverse drug reactions or interactions (ADR or I). (ibid.)
- The costs of medication problems that are 70-80% preventable when the pharmacist detects and makes recommendations that are rejected may exceed a 40:1 cost benefit ratio that is lost when drug misuse and ADRs are apparent and no action is taken on those recommendations.( Cooper JW, Wade WE, Cook CL, Burfield AH. Hosp Pharm in press, 2007)



# Key Factors in Medication Problems

- Drug misuse problems involve lack of patient understanding of their drugs, e.g. name , how to take and purpose of each, as well as improper use due to pre-existing conditions, e.g. aspirin-like drugs with a history of stomach or intestinal irritation or ulcers.
- Adverse drug reactions are associated with patients using too many drugs, seeing multiple prescribers and pharmacists and not taking personal responsibility for meds



# Definitions

- Drug misuse involves non-adherence or non-compliance with prescribed medications or improper prescribed use.
- Adverse drug reactions are an unwanted or unintended effect of medications to include side or toxic effects, allergic reactions and idiosyncratic or unexpected reactions.
- Adverse drug interactions occur when two or more drugs add to or interfere with an intended therapeutic effect of each other.



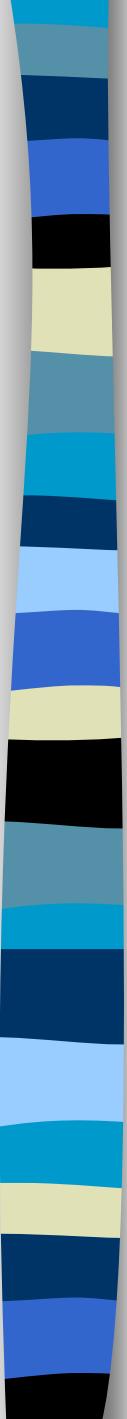
# ADR Concepts

- Up to 70-80% of adverse drug reactions (ADRs) are preventable by attention to patient history, cooperation between patients, prescribers and pharmacists
- Fewer than one-tenth of ADRs are ever reported per FDA Med Watch Estimate
- Some studies indicate that prescribers recognize or attribute ADRs less than one-fourth of the time when they occur



# Leading Causes of Death and Costs

- Adverse drug reactions are between the 4th and 6th leading cause of death in the USA
- Some 44-100,000 deaths each year are attributed to ADRs outside the nursing home- estimates are that the LTC figure is twice this number but predominantly attributed to “natural causes”.
- Drug misuse or non-compliance added to the cost of ADRs leads to an estimated 7-8 billion dollars in health care expenditures associated with medications or doubling of the basic cost of drugs (Bootman ,Ann Int Med 1997)



# Drug- Specific Questions for Patients to Ask Health Care Providers for High-Risk Medications:

- If you are taking NSAIDs such as ibuprofen, naproxen, Feldene, Daypro, Lodine, Relafen etc. on a regular basis, you may want to ask if Aciphex, Prilosec, Prevacid, Protonix, or Nexium will lower your risk of GI problems. All NSAIDs, including Mobic and Celebrex may also cause stomach, high blood pressure, heart failure or kidney problems! You should not use full-dose NSAID drugs for more than one to two weeks due to heart, brain and stomach problems that can occur with these drugs!



# Celebrex ,Mobic and all full-dose NSAID Cautions

- Be sure to weigh daily when first taking any of these drugs. Check stool color and stop the NSAID if stools turn black or if you get persistent nausea and heartburn after taking.
- Report a 5 pound or more weight gain and watch for fluid retention in your legs and “puffiness” in your feet
- Check your blood pressure- if  $>120/80$  or you are taking drugs for high blood pressure or heart failure, please check with your nurse, pharmacist and doctor



# Drug- Specific Questions for Patients to Ask Health Care Providers for High-Risk Medications:

- DO NOT take low-dose aspirin without your prescriber's approval and you should also have a GI-protecting drug (Aciphex or Prevacid). If you are taking Celebrex or Mobic (C or M ) you may have less risk of GI problems but still need low-dose aspirin protection for , heart, and brain problems as neither one of these drugs (C or M ) thins the blood! Never take aspirin with any NSAID, Plavix or Coumadin unless your doctor approved and protects your stomach from bleeding with a drug like Prevacid or Aciphex!



# NSAID Alternatives

- If you are taking NSAIDs you may ask if acetaminophen (APAP, Tylenol) may be safer for you, as well as glucosamine with or without chondroitin for your osteoarthritis.
- If you are taking weekly Fosamax or Actonel or monthly Boniva- you especially need stomach protection if you are



# NSAID Alternatives (cont'd)

- If you have a history or risk of heart attack-(MI)--or stroke (CVA) your primary care provider may recommend low-dose aspirin or prescribe drugs like Plavix with aspirin to protect your heart and brain. You will still need stomach protection and should be taking Aciphex or Prevacid or short-term Prilosec OTC, until your Doctor prescribes Aciphex or Prevacid.
- Tylenol taken 4 times a day is safer for your arthritis, stomach, brain, kidney and heart than NSAIDs, provided that you do not consume alcohol with your Tylenol.



# Fall Risk - Medication Risk Reduction Questions

- If you/your care receiver are taking drugs such as Mellaryl, Haldol, Abilify, Geodon, Seroquel, Risperdal or Zyprexa, has your dose been reduced in the last 6 to 12 months or a tapering trial without the drug been attempted? Has a fall or fracture occurred? If so, you need to have all drugs evaluated and possibly changed or the dose lowered to prevent further falls!



## Fall Related Questions Cont'd

- If you are taking drugs for anxiety or sleep such as Valium, Tranxene, Librium, Doral, Paxipam, Xanax, Ativan, Centrax more often than ONCE every week, ask your doctor for a shorter-acting version such as oxazepam (Serax) or safer drugs such as buspirone (Buspar) or Celexa/Lexapro, Zoloft or for anxiety and Ambien or trazodone for sleep, if you are not napping during the day nor taking caffeine in your diet.



## Fall Related Questions Cont'd

- Are you taking antidepressants such as amitriptyline (Elavil) or doxepin for mood, sleep or pain ?  
If so, have you fallen or had a fracture? Are there safer , newer drugs in this group ? (Zoloft, Effexor, Celexa/Lexapro in the morning, and trazodone or Remeron at bedtime only and Prozac weekly)



# Alternatives for Agitation and harmful Behavior in older adults

- If your loved one has been diagnosed with dementia or Alzheimer's and been prescribed one of the drugs on previous slides for agitation and fallen, you may ask your prescriber if Razadyne, Aricept, Exelon, Namenda, Buspar, low-dose Depakote or Risperdal can be used as a safer alternative to those other drugs.

Cooper JW JAMA, ConsPharm, BMJ



# Cognitive Drugs-Razadyne Aricept, Exelon and Namenda

If you or your loved one are taking any of these medications, please be sure that you let your pharmacist or doctor know if you or your loved one have any increased agitation, trouble sleeping, heartburn or GI upset to diarrhea, glaucoma, or leaking of urine-Some medications may not work well with these drugs-keep a list of all prescribed and OTC drugs and be sure to show to all doctors, nurses, pharmacists and other clinicians such as nurse practitioners and physician assistants who care for you or your loved one.



# Decongestants should be avoided!

- If you are taking anything with Sudafed and have high blood pressure, dementia, diabetes, heart attack or stroke or impaired kidney--- **DO NOT TAKE THESE DRUGS!**

Some products that contain one of these decongestants include Acitfed, Allegra-D, Claritin-D, Afrinol-LA, and any cold or allergy drug that ends with a D-. Even topical decongestants (Afrin) may be dangerous!



# Diabetes Drug Questions

- If you are diabetic and using insulin or oral drugs, ask your Dr. about insulin “enhancers” such as Glucophage, Actos, Avandia or Precose or Glyset to lower your insulin needs. Drugs like Zyprexa, Depakote and Lithium increase your risk of diabetes and there are safer alternatives. Be careful about adding or avoid adding Actos or Avandia to insulin, especially if you have heart failure!
- If you are diabetic and have a history or heart attack or stroke, you may need to take a beta blocking drug to protect your heart and/or brain. If you get low blood sugar you may not feel shaky or nervous-watch your fingerstick readings if you are



## Diabetes Care Questions

- If you are diabetic you should have a personal device to regularly check your blood sugar and have an A1c done at least every 3 months to see if your sugar is under control (6.5-7.0). You may also need to take low-dose aspirin and a statin to protect your heart, brain and circulation.

- All diabetics should have regular eye exams, heart, thyroid and lipid checks, as well as special foot care. If you develop chest or leg pain, blackout spells or loss of sensation in your hands or feet, tell your diabetes care provider immediately!



# Heart, High Blood Pressure and Circulation Questions

- If you are taking any medication for your heart, HBP or circulation, be sure you take your BP and pulse on a regular basis and report to your primary care provider (PCP) any consistent abnormal readings.-please DO NOT TAKE any drugs for arthritis e.g. ibuprofen (Advil), Aleve Celebrex , or Mobic without checking with your pharmacist or doctor-If you are taking any blood thinners such as Coumadin or aspirin, Plavix or Ticlid you will need to have your blood checked on a regular basis- DO NOT consume alcohol or pain-medications without your PCP's approval.



# High Blood Pressure Meds

- If you are taking diuretics or “water pills”, are you having your blood checked for potassium?
- If you are taking Adalat CC, Procardia XL, Plendil, Norvasc or Cardene you may get some edema the first 1-2 wks->
- Be sure to elevate your legs two feet above your heart for 1/2 hour each day to relieve edema.
- If you get a headache with any of these drugs, take Tylenol 1/2 hr before dose- the headache will usually go away after 7 to 10 days.



# HBP Meds

- If you are taking Capoten, Vasotec, Monopril, Prinivil, Zestril, Univasc, Aceon, Lotensin or Accupril and get a cough or edema- ask your prescriber for an alternative drug (Cozaar, Avapro, Diovan, Micardis)
- If you are taking Hytrin, Cardura or Minipres and gain 5 pounds or have ankle edema or your BP is not less than 120/80 when taking, ask you doctor for an alternative HBP drug. There are better drugs for prostate problems (eg, Flomax and Uroxaltra)



# HBP Meds

- If you are taking Aldomet, Catapres, Wytensin, Ismelin or Tenex and feel sad all the time-ask your Dr. for another HBP medication
- If you are taking a drug for high blood pressure and are not watching your salt intake, you may not be getting the best results from your medication-ask your nurse, pharmacist, social worker or Dr. about foods high in salt and alternatives



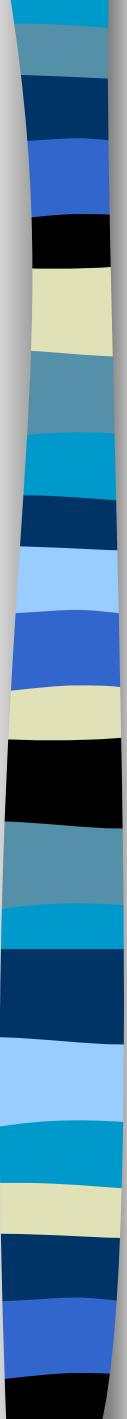
# Heart failure drugs

- If you have congestive heart failure, you may be taking drugs such as Lanoxin, Lasix or Bumex, Capoten or Vasotec, Diovan or Benecar, Coreg or Toprol and Aldactone or Inspra.
- Please be sure to weigh daily and watch for any fluid weight gain of 5 pounds or more- this is of vital importance if you start on any prescribed arthritis drug such as Celebrex , Mobic or even OTCs like ibuprofen (Advil) or naproxen (Aleve)! Do not take any of these NSAID drugs for more than several days due to the risk of fluid retention, blood pressure increases and worsening of heart failure.



# Cholesterol Check

- If you have not had your cholesterol checked, ask to have this test from your doctor or pharmacist-
- If you have chest or leg pain on walking, or blackout spells or have had a heart attack or stroke---->It is very important that you have your cholesterol not only checked, but lowered with a statin drug such as Lipitor, Crestor, Vytorin, Pravacol, Zocor, Mevacor or Lescol if you have any of these problems-you may also need to be taking low-dose aspirin if your doctor recommends this drug.Do NOT take aspirin with Plavix or Coumadin unless your doctor has approved AND is doing frequent lab work!



# Other Cholesterol Drugs

- If you are taking any statin drug and have muscle aches that keep you awake, ask your doctor for another statin or the combination of a statin with a drug that works in your gut (eg Vytorin)
- If you are taking drugs to lower triglycerides, such as Lopid, Tricor or Lipidil, call your doctor if you get persistent muscle aches or flu-like symptoms. Do NOT take with a statin unless your doctor is carefully following your lipids.



# Depression Check

- Do you feel “down” for more than a day or two at a time?
- Do you sleep too little or too much?
- Do you not enjoy things that used to give you joy?
- .



# Depression Check Cont'd

- Has your appetite or weight changed much in the last 6 months to a year?

Have you had any illnesses or loss of love ones that keeps you sad for more than two weeks?

Do you have someone you can talk to about these losses?

- If any two of these are bothering you, please see your doctor or mental health professional



# Cancer Check

- Do you have any of the 7 warning signs?- change in bowel or bladder habits?
- A sore that does not heal?
- Unusual bleeding or discharge?
- Thickening or lump in breast, testicle or elsewhere?



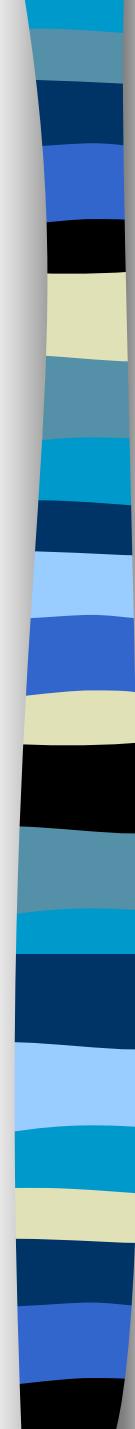
# Cancer Check Cont'd

- Indigestion or difficulty swallowing?
- Obvious change in a wart or mole?
- Nagging cough or hoarseness?
- Do you see a doctor at least yearly?-have a female or male exam?
- Men- PSA yearly?- Both Sexes  
Sigmoidoscopy every 3 to 5 yrs. After 50



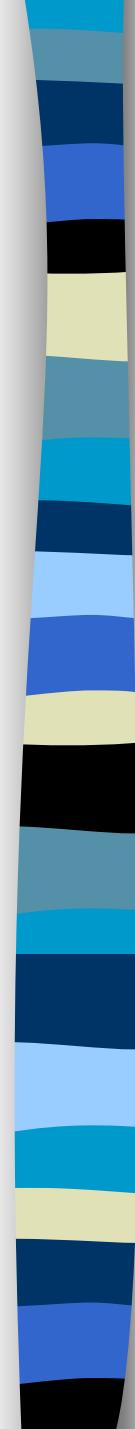
## Cancer Check Cont'd

- Women- do you do a monthly breast exam, annual mammogram and pelvic with Pap test annually? This is critical when taking any estrogen or progestin product orally for more than 5 years. The topical or vaginal hormone form as cream or ring may be safer alternatives than oral hormones.
- Both sexes-if fair-skinned, do you have a dermatologist inspect sun-affected areas every year?



# Eyes, Ears and Throat Drugs

- Have your eyes checked at least yearly?
- If you have glaucoma, be sure to check how your drops are put in each eye and squint or squeeze the bridge of the nose for 30 seconds after each dose
- If you have dry eyes-or eye infections ask your pharmacist for a tear substitute eye drop (Liquifilm tears)and use daily with baby shampoo cleansing of both eye sockets.



# Eyes, Ears and Throat Drugs

## Cont'd

- Have your ears checked by someone close to you-
- If there is any excessive wax, ask for an ear cleansing solution ( Debrox)
- If you have stuffy nose- do not use oral decongestants that have Sudafed or nose sprays like Afrin if you have high blood pressure, angina, TIAs or Hx of heart attack or stroke



# Throat and Breathing medications

- If you have a sore throat, check for fever and tenderness underneath your jaw- see your doctor if both are present
- If you have an ear ache-be sure to check your throat
- If you have asthma, bronchitis or emphysema, be sure you know which drugs you need to take to help your breathing
- Also be sure you know which drugs you can use for sudden shortness of breath



# Infections

- If you get frequent infections in your chest or urinary track, ask your prescriber about drugs that may decrease the frequency of these infections
- If you are over 50 and NOT taking a high-potency multiple vitamin such as Centrum Silver or Stresstabs with Zinc or a generic equivalent, please start taking one daily, unless you are taking Coumadin. A vitamin and mineral supplement may decrease your sick days due to these infections.



# Immunizations

- If you have not had a flu shot or Pneumonia shot, ask your prescriber about these shots.
- If you have not had a tetanus, diphteria and whooping cough shot in the last 10 years, you need a booster!
- If you have never had shingles, you may be a candidate for a shot to prevent shingles and post-shingles pain (Zostrix)
- If you have a chronic cough and are not a smoker, nor live with someone who smokes, nor taking drugs called ACE inhibitors, you may need a whooping cough booster shot with your tetanus and diphteria booster (Tdp-Boostrix, Adacel).



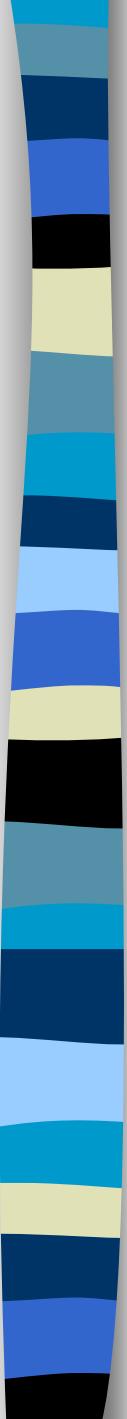
# Osteoporosis

- Be sure that you are taking at least 1500 mg of calcium citrate per day and 800 units of vitamin D
- Ask your doctor, nurse or pharmacist about drugs to preserve bone strength
- You should NOT be taking hormones for osteoporosis, but if you are taking them be sure that you have a mammogram and female exam at least yearly or more often
- Fosamax, Actonel, Boniva, Zometa, Forteo, Micalcin or Evista are the only drugs that should be used for osteoporosis.



# Oral bisphosphonates for OP

- If you are taking Fosamax or Actonel weekly or Boniva monthly, you should be able to swallow a full-glass of plain water and sit-upright for 30 minutes to an hour after taking these drugs to prevent erosion of your esophagus or stomach or small intestines. If you are taking any drugs for reflux, GERD or stomach problems you may not be able to take any of the above oral drugs- ask your doctor about a quarterly to yearly infusion of Zometa, or Miacalcin nasal spray or Forteo daily injections for no more than 6 months.



# Hormones for Osteoporosis or Perimenopausal Symptoms

- The oral pills like Premarin and Estrace should not be taken for more than one year after menopause due to a greatly increased risk of breast and uterine cancer, heart attacks, stroke, diabetes and dementia.
- Ask your doctor about the topical patch (Climara, Vivelle, CombiPatch) creams (Premarin) or intravaginal ring (Nuvaring) that may be safer for your breasts and uterus than the pill forms.
- (Manson JE, et al. NEJM 2001;345:34-40; Gennazzani AD et al Fert Steril 2001;76:241-8)



# Hormone Myths

Estrogen and progestin do NOT protect against cardiovascular (CV) disease-peri and postmenopausal women need statin therapy for high lipids, not hormones. Hormones actually increase risk of clots, heart attack, diabetes, dementia and stroke, as well as breast, uterine and ovarian cancer !

- Estrogen and progestin do NOT protect against memory loss they actually INCREASE risk of Alzheimers dementia.
- Estrogen can be safely used at any age is FALSE-all women should stop oral hormone replacement therapy by one year after menopause. Never start at a late age!



## Hormone Precautions!

- Be sure that if you are taking any estrogen product and still have your uterus that you ask your prescriber about progestin therapy to protect your uterus from cancer caused by unopposed estrogen!
- Any sex hormone replacement therapy, pill, patch, cream or vaginal ring requires that the woman do a monthly breast self-exam, and have at least an annual pelvic exam and Pap smear. If you Dr. does not want to do this-get another Dr.!



# Other Hormones

- If you are taking thyroid, ask to have your tests checked yearly- if you did not have blood work before your thyroid was prescribed, ask for blood work after thyroid has been stopped for 4 to 6 weeks
- If you are taking cortisone-like medications such as prednisone by mouth or into your lungs as an inhalation, ask about bone and stomach protection
- Do not take ANY alternative or herbal medications without medical advice and approval!



## Urinary Incontinence

- Many older adults have some incontinence, from occasional to frequent leaking of urine. If you or you loved one has this problem, please seek advice on management of this problem from your health care providers
- Incontinence can lead to dehydration, chronic constipation, and more frequent lung and urinary tract infections as well as falls. Some drugs can help and some drugs can cause incontinence- please ask your pharmacist to look at your drug list if you develop leaking urine.



# Wellness Medication Checklist

- If you are not taking a multiple vitamin and mineral supplement, consider or ask for a recommendation to decrease sick days due to infections
- What is your support system- church, synagogue, temple ,mosque, friends, and loved ones?
- Is your diet adequate? **Are you able to exercise daily?**
- **Do you have someone to talk with about things that bother you?**
- **Do you have a doctor and pharmacist who know all your medications?**



# Summary and Conclusions

- In the year elderly become progressively to severely disabled a large proportion are hospitalized for a small number of diagnoses, most of which relate to drug use. (Ferruci L, et al JAMA 1997;277:728-34)
- Adverse Drug Rxns (ADRs) are only 1/3 of drug-related admissions; other 2/3 are related to nonadherence to prescribed treatment (Frisk PA, Walchle RC, Cooper JW, et al. AJHP 1977; 34:738-42)
- How can health care practitioners and caregivers improve drug use among older adults?



# How can patients decrease medication problems?

- Keep a personal record of all drugs prescribed or self-treated, and avoid alternative treatments or supplements unless they are approved by a primary care provider physician or pharmacist. (personal drug checklist)
- Show this medication record to every health care provider utilized- e.g. doctors, dentists, podiatrists, nurses, pharmacists etc.
- Expect each health care provider to review all current drugs and problems before adding another drug.



# Consumer Responsibilities And Rights Concerning Medications

- Patient “Bill of Rights” considers that each patient will have the right drug in the right dose for the right period of time for the right indication
- The patient can expect that they will have minimal risk of adverse drug reactions



# Consumer Responsibilities And Rights Concerning Medications

## Cont'd

Patients should be able to give the name of each drug, how to use the drug and what to expect from the drug in order to best use the drug in their overall treatment scheme-Patients should expect reasonable medication outcomes! If you want to present these slides, e-mail me at [jcooper@rx.uga.edu](mailto:jcooper@rx.uga.edu) for free copy. Dr. Jack Fincham's superb book "Taking Your Medicine" is highly recommended for the caregiver and layperson who wants to better understand their medications and may be ordered via [www.takingyourmedicine.com](http://www.takingyourmedicine.com).