Conundrums of Polypharmacy

“A little poison now and then makes for agreeable dreams, and much poison in the end for an agreeable death.”

– Nietzsche: Thus Spoke Zarathustra

Pharmaceutical agents are a major component of the United States economy. Drug sales rose from $22 billion in 1980 to $149 billion in 2000. Many pharmaceutical companies report 17 to 30% profit margins in a time when other sectors of the economy are struggling. According to Fortune magazine, 6 out of 20 of the companies with the highest return on revenues are pharmaceutical companies. Drugs are clearly big business in America.

In the United States, 88% of community-dwelling elders use prescription drugs, with the average older person using between 3 and 8 drugs. In Italy and Sweden, 93% of older persons are taking drugs. This usage of drugs, while in part responsible for improved health and longevity of those of us growing older, does not come without cost.

In a quality improvement study led by Gordon Ireland, PharmD, at the St. Louis VA Medical Center, we found that when the average number of daily medications (continued on page 2)
was reduced from 13.1 to 8.2 in persons receiving over 10 medications, hospitalizations and deaths were reduced by about one-third (see Figure 1). Interestingly, the medication most commonly reduced was vitamins. It turned out that all older patients remembered to take their vitamins, but would take them in preference to needed drugs such as ACE inhibitors for heart failure! Polypharmacy brings with it a variety of fascinating compliance issues such as was shown by one of our older patients who claimed that digoxin was his best drug but he only took it when he needed it – “You see, when I’m constipated, I take 3 or 4 of them. It’s the best laxative I’ve ever had!”

As so elegantly detailed by the Institute of Medicine book, “To Err is Human,” health care professionals make one million errors every year leading to between 44,000 and 98,000 deaths at a cost to the United States of $17 to 29 billion a year. A Harvard study done in 51 hospitals in New York involving 30,000 patients reported that 3.7% had a treatment adverse event. Negligence was responsible for 27.6% of these adverse events, and of these, 13.6% led to death and 2.6% had permanent sequelae. There was a doubling of adverse events in persons over 65 years of age. Most errors are preventable. Errors of omission are as important as errors of commission.

What can we do to prevent drug errors? The secret is to institute continuous quality improvement (CQI) programs that detect and report errors early and allow for dissection of what are the major causes. This allows us to fix systems problems and increase geriatric education. To do this, we must move to a computerized medical record such as has been established by the Veterans Administration (see Figure 2). These systems have to include computerized physician order entry and for hospitals and nursing homes, a coding device reader to prevent medications being given to the wrong person. If Deming’s CQI system (see Figure 3 on page 6) could revolutionize Japanese industry, it is time to give it a fair trial for the care of our older persons.

Computers will also allow for the development of critical pathways such as our CLINICAL GLIDEPATH™ TOOLS which allow recognition that all old persons do not fit into a single paradigm and that flexibility in approach is necessary. The CLINICAL GLIDEPATH™ TOOLS categorize older persons into healthy, frail, demented, and those at the end of life.

Physiological changes with age...
Taking Medications: Benefits and Risks

First, the Facts

The term “drug” can be used to define an almost infinite variety of substances, both naturally occurring and man-made. Drugs include caffeine, alcohol, nicotine, and the ubiquitous over-the-counter (OTC) pain relievers most people keep around for minor aches, fevers, and pain. In short, drugs are not just what the doctor prescribes when you are sick; they are substances we encounter every day. The key to understanding the medications you take is to know what substances fall into the category of drug and to appreciate the ways in which these substances can affect our health and well-being. A few basic facts are especially relevant as we age.

➢ There is no such thing as an absolutely safe drug. The federal Food and Drug Administration (FDA) controls the development and introduction of new drugs into the marketplace to promote maximum safety with the fewest possible risks. However, every drug, whether an OTC cough syrup or an established, familiar antibiotic, can produce side effects, as well as undesirable effects, when taken with certain other medications or foods. In addition, many substances, such as vitamins, “natural” nutritional supplements, and herbal preparations are not regulated by the FDA, so manufacturers’ claims are not supported by the same level of public evaluation and documentation. As consumers, we must appreciate the balance between benefits and risks that doctors consider in prescribing medications and play an active role in promoting our own safe drug use.

➢ Older persons take more drugs than their younger counterparts. Older adults make up 12.4 percent of the U.S. population but take 25 to 31 percent of all prescription medicines. Between 76 and 92 percent of older adults use at least one prescription or nonprescription drug regularly. And doctors estimate that adults aged 60 and older take more than one-third of all prescription tranquilizers, sleeping pills, and antidepressants. The number of prescription drugs taken by older adults increases with age, and at all ages, women take more medications than men do.

➢ The older body does not accommodate drugs in the same manner as the younger body does. Normal changes in the function of various organs with aging affect (continued on page 4)

“Natural” may not mean “healthy”

In the United States, the sale of herbs for medicinal use is largely unregulated. Companies that sell herbal preparations are not required to demonstrate the safety or efficacy of their products. The ingredients of some herbal preparations are not listed on the packaging, and even when they are, the lists may not be accurate or complete.

Although herbal and other “natural” products may be beneficial in some circumstances, they can have significant and sometimes unpredictable side effects. For example, Ginseng, which is made from the root of a Chinese shrub and purported to be an aphrodisiac, raises blood pressure; mugwort (mother wort) causes dermatitis. Other people have been poisoned, in some cases fatally, by herbal preparations containing Heliotropium; those who died were also taking a prescription containing Phenobarbital.

To avoid possible drug interactions, be sure your health care provider is aware of any herbal preparations you use.
how drugs are absorbed, processed, and eliminated. A drug may not be absorbed as completely in an older person as it would be in a younger person. Similarly, the active component of a drug may be present longer in the older person’s body. A disease or chronic condition may alter the body’s ability to use or transport a drug where it is needed or to eliminate the drug. These changes mean that even a drug we have used before may not have the same effect now, and that the doses or dosing schedules of some drugs may need to be adjusted to ensure maximum safety and effectiveness as we age. It can mean substitutions are required or a particular medication should be discontinued.

➢ Older persons are more likely to experience undesirable side effects from drugs than are younger persons. Up to one-third of older people develop undesirable side effects to medications, and they are at least twice as likely to have adverse outcomes related to medication than the younger person is. Older adults are also more likely to have multiple medical conditions and to receive care—and prescriptions and drugs—from several doctors in different specialties. Side effects of a medication prescribed by one doctor may be interpreted by a second doctor as a manifestation of a new or worsening physical condition, prompting the prescription of even more medications.

Improving the Benefit-to-Risk Ratio

Medications have significantly improved our lives. Life expectancy has increased because of antibiotics and other drugs, and our quality of life is better because we have medications that help control diseases and symptoms that can’t be “cured.” Still, getting the greatest benefit with the least risk, called the benefit-to-risk ratio, requires vigilance by the consumer as well as by health care providers.

Using multiple doctors means greater opportunity for overlap in prescribed medications, as well as an increase in the number of medications prescribed. Also, higher levels of self-medication without a doctor’s supervision can occur now that many prescription medications are available in lower dosages over the counter. The effectiveness of antibiotics has resulted in their overuse, which has resulted in the development of medication-resistant microorganisms.

Other factors that affect the benefit-to-risk ratio of drug use include our tendency to hope that taking a drug can overcome other risk factors for disease, such as unhealthy lifestyle practices and environment. In short, we’ve come to expect a lot from our expanding arsenal of drugs;

RISK FACTORS FOR ADVERSE DRUG REACTIONS

➢ Age. The older you are, the greater your chance for an adverse drug reaction.
➢ Gender. Women are more likely than men to experience adverse drug reactions.
➢ Race. Physiological differences can result in a higher risk of adverse drug reactions among certain races. For example, some high blood pressure medications affect blacks differently than they affect others.
➢ Number of medications taken daily. The more drugs you take, the greater your chances of suffering side effects and potentially adverse drug interactions. Depending on the specific drugs and your overall physical condition, problems can occur with as few as two drugs used concurrently.
➢ Drug dosage. Seventy-eight percent of all adverse drug reactions are dose related.
➢ History of adverse drug reactions. If you have had an adverse drug reaction in the past—even if it involved a different drug from the one you are taking now—you have a greater risk of experiencing an adverse drug reaction again.
➢ Care setting. Hospitalized persons take an average of 9 drugs during their hospital stays, and about one-third experience some type of adverse drug reaction.

These risk factors emphasize the importance of informing all health care providers of every medication you are taking (don’t assume that this information is in the chart) and of any allergies or previous drug reactions. Also ask what new medications are being given and why each has been prescribed.

(continued from page 3)
Avoid Too Many  by Joseph H. Flaherty, MD

Do you think you take too many medications?  
Do you think some of your medications make you feel worse rather than better?  
Do you wish your doctor would listen to you more before prescribing you another medication?  
Do you have to choose between buying your medications and buying food or paying your bills?

If the answer to any of these questions is “yes,” then read on. But first, a word of CAUTION: DO NOT STOP ANY of your prescribed medications without first talking to your doctor.

What is the problem with taking too many medications?

Studies have shown that too many medications (often called polypharmacy) are associated with an increased risk of having side effects. Although it makes sense that the more medicines, the more side effects, did you know that according to two studies, the risk of side effects for persons taking 10 medications is approximately 100%? In another study of hospitalized patients, those with side effects were taking twice the number of medications compared to those without side effects from medications, and the severity of the side effects was related to increasing the number of drugs. So, number of medications is important.

The other problem with too many medications is that this impairs a person’s ability to manage and remember how and when to take medications. This is called “compliance.” Isn’t it interesting that your doctor expects you to remember not only how to take eight different pills, but expects you to remember what each one is for?

Another major problem with the prescription of too many medications is that this can lead to medication errors, especially when new medications are prescribed or changes are made. One study found that there was some type of error (on the patient’s part, on the doctor’s part, or both) fifty percent of the time when patients returned home after a hospitalization.

What can be done to AVOID TOO MANY medications?

The mnemonic in the table below is a guide to help both patients and physicians try to get the most out of their medications, without taking the most medications.

**Alternatives:** This means trying to use “non-medication” interventions instead of a medication. For example, instead of prescribing an anxiety pill for an anxious patient who is worried about doctor bills, the physician should refer the patient to a social worker who might be able to help the patient work through the often chest-pain-causing maze of medical billing.

**Vague symptoms:** Avoid treating vague symptoms. For example, an upset stomach should not always be treated with one of those expensive medications people see advertised on television. Also, many upper respiratory illnesses (e.g., colds and sinus congestion) do not always need to be treated with antibiotics.

**Over-The-Counter (OTC) medications:** Not only do clinicians need to ask about use of OTC drugs, but older persons need to ask their doctors about the risks and benefits of such drugs. Some OTC medications to beware of are cold medications with pseudoephedrine and almost all sleeping pills, including anything labeled with a “-PM.”

**Interactions:** The sure way to avoid drug-drug interactions is not to use drugs, or at least to minimize the number. Notorious offenders for drug-drug interactions include antihistamines, seizure medications, some antibiotics, and warfarin.

(continued on page 18)

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**GUIDELINES FOR PROPER MEDICATION PRESCRIBING AND MEDICATION REDUCTION**

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<td>Vague history or symptoms</td>
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<td>OTC (over-the-counter) medications have side effects too</td>
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<td>Y</td>
<td>Yes/No (Is the person actually taking the medication?)</td>
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Conundrums of Polypharmacy
(continued from page 2)

delayed gastric emptying, and decreased surface area of the gut can all result in altered drug absorption. A quagmire for drug-drug interactions (see Figure 4). An example is the anabolic steroid oxandrolone which requires marked reduction in the dosage of warfarin to prevent abnormal INRs and bleeding. Finally, there are changes in receptor, post-receptor, and organ response capacity with aging that can result in dramatic alterations in the pharmacodynamic response to drugs.

In older persons three factors result in the increase in adverse events with drug usage:

◆ Decreased physiological reserve
◆ Altered drug metabolism
◆ More diseases resulting in the use of more drugs.

The effect of drugs in an older person with decreased physiological reserve is often under appreciated. When young, a person has much reserve capacity, so if a drug reduces functioning of an organ by one or two percentage points, it does not express itself by resulting in a meaningful decrease in functioning of the whole individual. In an older person, who perhaps has mild cognitive impairment, a drug that reduces cognition by a very small amount may result in delirium (see Figure 5 on page 7).

With aging, loss of weight, fat loss, decline in albumin (from cytokine excess in addition to malnutrition), and dehydration can all alter drug delivery to the tissue. Thus, in persons with protein energy undernutrition, drug dosages need to be carefully titrated.

Compliance is a major problem in all persons, and particularly so in many older persons. Cognitive impairment, depression, decreased hearing, and poor vision can all lead to failure to take a drug or for the drug to be taken inappropriately. Instructions on how to take drugs need to be written in large letters. The health care professional needs to check that the patient understands the instructions.

(continued on page 7)
Conundrums of Polypharmacy
(continued from page 6)

Pill boxes need to be set up for older persons having problems remembering to take their medicines. Drug regimens should be simplified, allowing drugs to be taken the minimum number of times a day. Drug taking should be linked to ingrained daily activities, such as “take this drug when you brush your teeth in the morning”, instead of “take this drug in the morning.” It also needs to be recognized that diabetics appear to have particular problems with compliance.

Cost is a key factor in compliance. Drug costs need to be noted at the time of prescribing. Patients need to be asked if they can afford the drug. It is useful to remember that cheap drugs, e.g., thiazides and beta-blockers, often perform approximately as well as more expensive drugs, e.g., ACE inhibitors or calcium channel blockers, as recently demonstrated in the ALLHAT study. Most pharmaceutical companies have programs to help persons obtain drugs they cannot afford.

Where possible it should be considered whether or not one drug can produce two effects. For example, prazocin, like terrazocin, not only decreases blood pressure but also relaxes the internal sphincter of the bladder in men with benign prostatic hypertrophy. In a person with angina, a calcium channel antagonist may also successfully treat urge incontinence.

Over-the-counter and herbal drugs often interact with prescription medications. Thus a full list of all drugs needs to be disclosed to the health care professional.

There is an increasing recognition that failure to appropriately treat an older person may be as bad as over treating. For example, failure to use beta-blockers following myocardial infarction would be a clear error of omission. Most older persons in nursing homes have osteopenia or osteoporosis, yet they often do not receive calcium and vitamin D and, where appropriate, bisphosphonates. Many older persons have anemia and chronic kidney disease. Despite good evidence that treatment with erythropoietin or darbopoeitin alpha (a longer-acting analog) improves outcomes including quality of life, they are rarely prescribed. The other side of this coin is overtreatment of conditions, e.g., there is no evidence for treating blood pressure below 160/90 mmHg in older persons and even less for primary prevention of heart disease by lowering cholesterol in octogenarians.

Much of the future of drug therapy lies in the exciting area

(continued on page 19)
**Journals of Gerontology Series A Has Best Citation Impact Factor of Clinical Geriatric Journals**

The impact factor in 2002 for the Journals of Gerontology (Medical and Biological Sciences) was 3.455. In contrast, the impact factor for the Journal of the American Geriatrics Society was 3.092; American Journal of Geriatrics Society was 3.210; Mechanisms of Aging and Development was 2.867; Age and Ageing was 1.600. In addition, the Journals of Gerontology had a high immediacy index of 0.673.

Dr. John E. Morley, the editor of the Journals of Gerontology – Medical Sciences, commented “It is wonderful to see the improvement in the Impact Factor. The Journals have been extremely fortunate in receiving outstanding manuscripts from geriatricians and gerontologists. This has been helped by our rapid turn around time of less than four weeks to editorial decision after submission. In addition, the new format of editorials, review articles, and letters, as well as original articles has greatly improved the readability of the Journals. Recent review articles by Dan Blazer on depression, George Grossberg on dementia, Maria Fiatarone-Singh on exercise and Alvin Matsumoto on the andropause have become the classic review articles in these areas. Exciting reviews coming in the near future include two articles on how to prevent errors in the care of older patients and a series of state-of-the-art articles on the pathophysiology and clinical significance of sarcopenia.”

**Faculty Honored**

In June 2003, Division of Geriatrics’ faculty members John E. Morley, MB, BCh, and David R. Thomas, MD, were made Fellows of the Gerontological Society of America, in recognition of outstanding achievement and exemplary contributions to the field of gerontology. This award is bestowed by their professional colleagues. Congratulations, Docs.

Nina Tumosa, PhD, was recently selected as a 2003 Primary Health Care Policy Fellow sponsored by the U.S. Department of Health and Human Services. She was nominated by the National Association of Geriatric Education Centers. The six-month interdisciplinary fellowship included clinicians and educators for 30 different national organizations who were nominated on the basis of their experience and interest in primary care. One of the goals of the program is for Fellows to gain a greater understanding of how the federal government develops national health care policy for primary care practice.
Flaherty, Wilson, Morley Honored

Dr. Joseph H. Flaherty received the Father Tobin Award for 2003. The Father Tobin Award is given annually to that member of the faculty or staff of Saint Louis University School of Medicine who, by vote of the senior class, best exemplifies the spirit of Father Tobin in service, care, and understanding toward the “medical flock” (the term coined by Father Tobin meaning the medical school students).

Dr. Margaret M.G. Wilson was awarded the John H. Gladney, MD, Diversity Award for her significant contributions to the mission and programs of the Office of Multicultural Affairs. The award was presented by the Office of Multicultural Affairs at Saint Louis University School of Medicine on May 8, 2003. Dr. Wilson is the fourth recipient of this award.

ISIHighlyCited.com has completed their research to identify the Highly Cited Researchers in the Neuroscience category for the years 1981-1999. This final list contains researchers from 17 countries worldwide, and approximately 130 different institutions. Dr. John E. Morley was included among the most highly cited researchers for the last 20 years of the 20th century. The designation “Highly Cited Researcher,” and inclusion in ISIHighlyCited.com is a rare honor.

There is no better set of experts regarding ground-breaking work than the community of researchers in a field, and ISI’s database contains millions of citation relationships, each one derived from one author’s reference to another. Accumulated across many years and millions of articles, this information becomes a statistically powerful resource for finding individual authors who have formed or changed the course of research in a subject.

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Note to self: Order this set right away
Taking Medications

(continued from page 4)

after all, antibiotics are still considered “miracle” drugs. Despite our ever-increasing supply of information, we sometimes forget that drugs can have adverse as well as beneficial effects, and that doctors can’t always keep up with every new drug that is approved for use. Misconceptions are common and can influence the benefit-to-risk ratio in significant ways.

**Misconception #1: If one dose makes me feel good, a larger dose will make me feel better.**

This is not true. Altering the prescribed or recommended dose, whether up or down, reduces the effectiveness of a medication. Taking more is likely to increase the chance for undesirable side effects, or adverse reactions. Taking less can interfere with the effectiveness of a drug. Often, there is only a small margin for error in dosing, which is why following up with your doctor is always important. Specific risk factors for adverse drug reactions are summarized in the box on page 4.

**Misconception #2: If one drug doesn’t help, take another – or two or three.**

An adverse drug reaction can occur when as few as two drugs are involved. Any additional medications increase the risk. The term “polypharmacy” means, literally, “many drugs,” but it is used by health care providers to refer to the prescription, administration, or use of more medications than are clinically indicated. The possibility that the patient may be taking – unbeknownst to his or her physicians – additional medications that are available over the counter, increases the likelihood that medication problems will develop.

**Misconception #3: If I can get it without a prescription, it must be safe.**

Nonprescription drugs are still drugs and can cause side effects, adverse drug reactions, and undesirable interactions with other medications. For example, OTC decongestants can worsen bladder obstruction associated with an enlarged prostate gland, antacids can interfere with drug and vitamin absorption, pain medications such as aspirin and ibuprofen can irritate the stomach, and aspirin can interfere with normal blood clotting. Caffeine and alcoholic beverages may interact with other medications. Vitamin supplements can affect the body’s absorption of certain medications; conversely, an OTC medication may affect the body’s absorption or elimination of specific vitamins. Some vitamins, such as vitamin C and the B vitamins, are water-soluble; that is, they are easily absorbed and rapidly eliminated in the urine. Other vitamins, such as A and D, are fat soluble; that is, they are stored in the body’s fatty tissues to be used as needed. An excessive intake of fat-soluble vitamins can lead to a potentially dangerous build-up. Even “natural” or herbal preparations can cause side effects.

**Misconception #4: If I have used this medicine for years, I must need it now.**

The effects of a drug you have taken daily for many years, such as a blood pressure medication, probably will not alter significantly from one day to the next; but if you experience a sudden and significant change in your overall health, or begin to take an additional, new drug, the effectiveness of the first drug or how you respond to it may change. Some changes in the body’s response to drugs can be anticipated as part of the normal aging process; for example, changes in kidney function that decrease the rate at which drugs are excreted can leave more drug free to act on the rest of the body. Other changes may be introduced by diseases, especially those affecting the heart and circulation, liver, and kidneys. Additional precautions are important for medications you do not take daily, such as an-

(continued on page 14)
New ACE Unit Dedicated at DesPeres Hospital

Music, merriment and medicine mixed freely on June 17, 2003 at Des Peres Hospital in St. Louis County at the dedication of the Red Schoendienst Acute Care for the Elderly (ACE) Unit. Friends, family, fans, and faculty joined Red Schoendienst, Stan Musial, and John E. Morley, director of the Division of Geriatric Medicine at Saint Louis University, for the unveiling of the wall plaque depicting Mr. Schoendienst playing baseball for the St. Louis Cardinals, that will grace the ACE Unit entrance. At the dedication Mr. Shoendienst spoke about his wish to give back to the St. Louis community that has so strongly supported him throughout his career in baseball. He commented that when he was playing for the St. Louis Cardinals his friends all seemed to be ball players, bartenders, and doctors. His support of the ACE Unit allows him to show his appreciation for the medical profession and to provide his community with a much needed medical service, a safe haven for elders who are suffering acute illnesses and who are in need of some extra care to ensure that they recover quickly. This is the second ACE Unit opened at a St. Louis Tenet hospital in the St. Louis metropolitan area. The first is at Saint Louis University Hospital in St. Louis City. Joseph H. Flaherty is the director of both ACE Units. The dedication ended with a musical tribute to baseball and America, led by Stan Musial on his ever-present harmonica.

In tribute to the ACE Unit nursing staff, our own Dr. Flaherty has penned this poem:

The ACE Unit Nurses
by Dr. Joseph H. Flaherty

You are the backbone of our floor,
You keep giving more and more.

You are the fiber and strength of our multidisciplinary quilt,
You are the rock upon which we are built.

You are the wind of our fast moving ship,
You are tranquility for each patient’s hospital trip.

You are the smile of our face,
You are the heart of the ACE.

You are the ears that listen and the eyes that see,
All the struggles and hardships of our sick elderly.

Whether an RN, LPN or nurses aide you may be,
Our happiness and success, we owe it to thee.

You toilet, you feed, you comfort each,
Without knowing how much you actually teach.

From you we have learned a most important rule,
That love and patience are the best tool
In a time when high tech seems to be the king,
You show us that T-L-C is still the best thing.

So from all of us to all of you
Thank you for every big and little thing you do.

Thank you, thank you, thank you so much,
For every thing, every one, that you touch.
Using Medication

1. Take medication as instructed.
2. Know the reason for the medication and do not take over-the-counter medications without discussing with your physician.
3. Do not take over-the-counter medications without discussing with your physician.
4. Always bring to your hospital stay a list of the medications you are taking.
5. Keep a list of your allergies and medications your physician and pharmacist need to know.
6. When a new drug is prescribed, always discuss it with your other drugs.
7. Always ask if your medication is appropriate.
8. Remember that exercise is key to maintaining a healthy lifestyle.

Potential areas for iatrogenesis: The following can be used as a guide to prevent iatrogenesis.

- Drug use
- Restraints
- Infection
- Altered mentation
- Therapy (immobilization)
- Retention (of urine)
- Overzealous
- Starvation

1. Risk of adverse drug event increases. Approaches 100% at 10 medications.
2. Physical restraints do not prevent falls.
3. Most common nosocomial infection is urinary catheter. Risk of infection from indwelling catheter is greater than from indwelling catheter.
4. Develops during hospitalization, no intervention.
5. Restricted diets (e.g., “heart healthy”) indicated for older hospitalized patients.
do no harm

TROGENESIS

FACTORS MODIFYING DRUG EFFECTS WITH AGING AND DISEASE

- alterations sensibly
  - instruct medication
  - counter medications
    - with your physician first
    - health care provider a list
      - are taking
      - show it to the
        - list when a new
        - prescribed, ask if it interacts
      - medications can be reduced
        - use is the best medicine

said DATROS

- related to hospitalization.
  - daily checklist

- altered status (delirium)
  - mobility
  - urine or feces
  - labeling

- interacts with number of medications. Risk
  - falls; may cause harm.
  - is UTI, associated with an indwelling
    - straight catheterization is far less
  - not just on admission.
  - “1800 calories, ADA”) not
  - patients who are malnourished.

DO NO HARM

TROGENESIS

FACTORS MODIFYING DRUG EFFECTS WITH AGING AND DISEASE

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  - counter medications
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  - not just on admission.
  - “1800 calories, ADA”) not
  - patients who are malnourished.
Taking Medications
(continued from page 10)

As an example, suppose you notice that your feet tend to swell by the end of the day, so you borrow a drug from a friend whose feet also swell (due to a heart condition). Perhaps the medication you borrow is digoxin, which increases the force of heart muscle contractions. In taking this drug, you invite a long list of potentially dangerous side effects, including disturbances of normal heart rhythm, depression, loss of appetite, nausea, diarrhea, and dementia. To make things worse, the digoxin won’t even help your feet!

Specific tips for communicating with your doctor

Keep an up-to-date list of all your medications with you at all times. This includes prescription, OTC, eye, pain, and stomach medications; folk remedies; cough medicines; cold pills; vitamins; and laxatives. The Sample Medication Record below provides a format for listing your current medications, what each drug is prescribed for, what each drug looks like (color or shape of pills, tablets, or capsules), the date you started the medication, the doctor who prescribed it, the dosage (how much, how often), and any relevant precautions or instructions. Update the list yourself, or ask your health care provider to update it whenever it changes.

Ask for information about each new prescription. Ask your doctor why the new medication is needed, what benefits are expected, and what potential side effects might occur. Be sure to ask about any interactions with other medications you are taking. Keep a record of all new medications, including dosages and frequency of use.

(continued on page 21)
Hundreds Participate in Healing Hands, Healing Spirits Conference

The 14th Annual Saint Louis University Summer Geriatric Institute

On June 4-6, 2003, over 300 participants, including physicians, nurses, social workers, psychologists, pharmacists, optometrists, chaplains, and gerontologists attended the 14th Annual Saint Louis University Summer Geriatric Institute entitled, “Healing Hands, Healing Spirits.” Talks and workshops were given on topics such as Nutrition, Alzheimer’s Disease, Geriatric Assessment, and Spirituality. Sue Griffin, Ph.D., professor and vice-chair of the Donald W. Reynolds Department of Geriatrics and Director of Research at the Little Rock, Arkansas VA Medical Center GRECC, delivered the Jim Flood Memorial Lecture, Cytokines and Alzheimer’s. Richard N. Baumgartner, PhD, professor and interim chief of the Division of Epidemiology and Director of Aging and Genetic Epidemiology, University of New Mexico, Albuquerque, gave the Max K. Horwitt Memorial Lecture, Sarcopenia and Sarcopenic Obesity: Causes and Consequences. The conference provided its multidisciplinary audience with new information on geriatric clinical syndromes and corresponding treatment modalities.

Meet us in St. Louis June 1-3, 2004 for the 15th Annual Saint Louis University Summer Geriatric Institute! For more information about the Summer Institute, check out our website: http://medschool.slu.edu/agingsuccessfully and click on 2003 Gallery.
Meeting of the European Academy for Medicine of Ageing (EAMA)

A total of 33 participants from 15 countries convened for 5 days in the small town of Sion, Switzerland. Although a grand place to play in the mountains, the participants (geriatric physicians and researchers, called “students” for the week) had little time for frolicking. The daily routine, starting at 8:00 AM, consisted of state-of-the-art lectures by experts from around Europe, lectures by the students, and robust group discussions between the experts and the students. The classroom sessions finished at 7:15 PM and were followed by “evening sessions” at the group dinners. These were some of the best sessions for intense discussions (often lasting late into the night) about the future of geriatrics in Europe, and around the world.

The origins of the EAMA course date back to 1995. It was established by the Group of European Professors in Medical Gerontology (GEPMG). From their website www.healthandage.com, the aims of the EAMA are “to improve knowledge and skills in geriatric medicine for junior faculty members or promising candidates for future teachers in geriatrics, to harmonize the attitudes and goals of future opinion leaders in geriatric medicine throughout Europe, to establish a network among medical doctors responsible for the care of elderly persons and those responsible for student instruction, as well as general physicians caring for the aged, and to stimulate scientific interest in geriatric medicine.”

Each group of “students” completes an EAMA course which consists of four one-week sessions (two sessions are held each year) at the Institut Kurt Bösch in Sion, Switzerland. This past June, the group completed their 2nd training session, titled “Prevention of Age Related Disorders: From Genes to New Drug and Technological Interventions.” Some of the highlights included “Causes of Frailty and Preventive Options” by Professor J.-P. Michel (Geneva, Sw), “Embryonic Stem Cell Therapy” by Prof. K.H. Krause (Geneva, Sw), “Gerotechnology, an Alternative Approach for Prevention” by Prof. A. Franco (Grenoble, Fr), “What is Healthy Ageing?” by Prof. H. Bergman (Montreal, Ca), “European Policy in Respect to the Ageing Population” by Prof. K. McCarthy (Brussels, Bel), “Ethics and Anti-Ageing Medicine” by Prof. P. Barry (Washington, US), “Female Ageing” by Prof. M. Doeren (Berlin, Ger) and “Male Ageing” by the ever-enthusiastic Prof. J.E. Morley (St. Louis, US).

The current group is the first group since the program began to include geriatricians from the US, both from Saint Louis University. The group, which has already begun to network and “harmonize,” will graduate next summer. Look for these geriatricians in the future!
Time to Sign Up for the Saint Louis University Geriatric Leadership Academy

Join the Inaugural Class of the First U.S.-Based Geriatric Academy

On January 5-9, 2004, faculty from the Division of Geriatric Medicine at Saint Louis University, the St. Louis VA, the Mayo Clinic, UCLA School of Medicine, Mt. Sinai Medical School and the University of Arkansas will welcome the first class of the Saint Louis University Geriatric Academy where practicing physicians will receive enhanced post-graduate education in geriatrics. This SLU Geriatrics Academy was discussed in detail in the Spring, 2003 issue of Aging Successfully. Junior-level geriatricians (assistant and associate professors) will be taught skills in (1) Leadership and Management, (2) General Geriatrics, (3) Education Methodology, (4) Geriatric Systems and Continuous Quality Improvement (CQI), (5) Patient-Oriented Research, and (6) Health Systems and Community Networking that will help them shape the future of Geriatrics in the United States.

Tuition for the weeklong program is $500. Partial scholarships are available. For more information on how to participate in the program, email Nina Tumosa at tumosan@slu.edu.

MyOwn.MD

Improving Patient Safety

Patient safety in St. Louis just increased substantially. Both of its medical schools, Saint Louis University and Washington University, are the first testing sites for a new product called Genesis. Genesis is a product of MyOwn.MD, a company based in San Diego, but started by native St. Louisan Ahmed Ghouri, M.D.

Genesis is an intelligent patient safety system that can be used by physicians at the point of care to ensure that new medications that are prescribed are indeed safe for that particular patient. It is a computer-based thinking system that takes into account the patient’s medical and surgical histories, laboratory abnormalities, medications, allergies, and several other factors. Genesis is the first safety system in healthcare which can comprehensively understand and analyze virtually all patient attributes in real time, and without effort by the doctor. Once a medication is deemed safe, a legible prescription at the correct dosage can be printed for patients to take to a pharmacy. For further information about Genesis, call Dr. Ahmed Ghouri, CEO of MyOwn.MD, at 858-490-3973.

Dr. Tony Tang (left), first year geriatrics fellow at Saint Louis University is taught some fine points about the use of Genesis by Dr. Ahmed Ghouri (right), CEO of MyOwn.MD.
Avoid Too Many
(continued from page 5)

Duration: This is a reminder that once a drug is prescribed, the physician and patient need to determine and discuss for how long this drug will be used. If a particular drug is not working after a specified time, then it needs to be discontinued before another is started. (Note: This advice is primarily related to “symptomatic” medications, not to heart and blood pressure medications.)

Therapeutic versus preventive: Therapeutic refers to medications that treat illnesses that are already present. Preventive medications do not treat illnesses; rather, they are used to prevent them from occurring. Although preventive-type medications in general are quite safe (e.g., multivitamin, vitamin C, etc.), the benefits are not as evident as therapeutic medications (e.g., heart medications which can prevent a person from going to the hospital). Therefore, if a therapeutic medication interacts with a preventive medication, change or stop the preventive medication.

Once-a-day drugs: These can simplify medication regimens, but once-a-day medications are often more expensive than the twice, thrice, or four times a day drugs.

Other MDs: This is a reminder to be careful when a doctor refers patients to multiple specialists. Specialists often feel obligated to “do something” and that “something” often results in another medication or two.

Money: Buying medications is an issue for some patients. It can happen that persons on numerous medications often will buy the ones that are more affordable instead of the ones the physician thinks are most important. If this is a problem, ask your doctor, as there are often less expensive, but just as effective, alternatives.

Adverse effects: Adverse effects or side effects of other drugs should rarely be treated with the addition of other drugs. For example, the older person with unexplained worsening of his or her hypertension might be taking an OTC cold preparation with pseudoephedrine which can raise blood pressure. Instead of adding another blood pressure medication, stopping the pseudoephedrine may return the blood pressure to normal.

Need: This reminds the clinician to ask him or herself, “Does my patient really need this medication? That is, will it make a difference in my patient’s quality of life, or life expectancy, or some other aspect of his or her life?”

Yes/No: This refers to compliance (see above). Compliance, no matter what the patient’s age, becomes a problem as the number of medications increases. Not all patients can manage to take multiple medications. If you cannot, tell your doctor, especially before he or she adds another medication.

Although medications have made a great impact on treating illness over the past 50 years (did you know that penicillin has only been in use for about 60 years?), we must remember that more is not always better. Helpful hints to prevent problems with medications: Communicate with your doctor and get him or her to communicate with you; bring all your medications to your doctor’s visit including OTC medications; and remember, AVOID TOO MANY!

Rafi Kevorkian, M.D., Joins Faculty at SLU

Rafi Kevorkian, M.D., has joined the faculty at the Division of Geriatric Medicine at Saint Louis University and is a staff physician at the St. Louis VA Medical Center. Dr. Kevorkian received his medical degree from Saint Louis University in 1995, and then practiced in urgent care, emergency care, and in the St. Louis community. He is Board Certified in Internal Medicine and Pediatric Medicine. In 2002, he became a Geriatric Fellow at Saint Louis University’s Division of Geriatric Medicine. Dr. Kevorkian is a published poet and will continue to combine his medical and his writing careers while in St. Louis.
of pharmacogenomics. This area, while increasing complexity, will allow us to identify persons who are genetically predisposed to developing a drug side effect or alternatively, to be super-responders to a specific drug. This area uses genetic polymorphisms to identify these individuals. An example is persons who have the PI4 polymorphism for the platelet membrane receptor, glycoprotein IIb/IIIa. They have premature myocardial infarctions following coronary artery stent placement. These persons clearly would benefit from glycoprotein IIb/IIIa inhibitors to a greater extent than receiving regular platelet inhibitors or receiving clodipogrel, which blocks adenosine diphosphate binding to fibrinogen.

A number of factors have been identified as the major reasons for adverse effects to drugs in nursing home residents (see Figure 6 on page 7).

In many cases, high touch medicine can replace high tech medicine. Thus, a prescription given to a patient to do resistance and/or balance exercises or to do appropriate exercises to prevent the recurrence of benign positional vertigo is of more use than a drug prescription. Nancy Reagan once said, “Just say no to drugs.” Unfortunately, it is not that simple. It requires a sage health professional to recognize the critical balance in prescribing drugs as encapsulated in: “Drugs – we can’t live with them, we can’t live without them.”

Urinary catheters are inserted into older persons for a variety of unnecessary reasons. They are a major cause of nosocomial urinary tract infections. In addition, they represent a one-point restraint. It is time to stamp out the unnecessary use of urinary catheters.

Immobility is harmful to older persons. Yet in most hospitals, physical therapists do not work seven days a week. Resistance exercises have been shown to produce effects superior to many medications, but reimbursement systems to allow their prescription are not in place.

We have yet to install the computerized medical record and computerized medication prescribing as state-of-the-art care of all persons. This is despite the fact that many hospitals and physicians have comfortably installed computerized billing systems to help make sure they optimize their reimbursement. The Veteran’s Administration has developed a superb computerized medical record. There is no longer an excuse that such a system is not available everywhere. These systems dramatically reduce errors.

Large amounts of money are spent on developing blockbuster drugs and “me too” blockbuster drugs with theoretical advantages over one another. The ALLHAT study demonstrated that extremely cheap diuretics and beta blockers were as good or better than other agents for the management of hypertension. Despite this, physicians continue to prescribe more expensive drugs. It is time to establish a formulary of cheap functional drugs for the elderly that Medicare will purchase for them. Patients could then make their own decisions about whether they wanted to pay more for marginally better medications.

It is time that medicine for the elderly embraces an available knowledge base that will stop us from doing harm and allow us to do good. The tools and knowledge are there; it is time that they be appropriately used.

John E. Moody
Saint Louis University Hospital Develops a Geriatric-Orthopedic Hip Fracture Intervention Team Service

Hip fractures are a major cause of frailty, loss of independence and death in older adults. Current evidence clearly supports surgical options as the preferred method of managing older patients with hip fractures. Delayed surgery or exclusive medical management of hip fractures results in a notable increase in mortality. Collaboration between orthopedic surgeons and geriatricians directed toward achieving speedy and efficient surgical intervention has been shown to significantly improve clinical outcomes of older persons with hip fractures.

Professor Burton R. Moed, the new chief of the orthopedic department at Saint Louis University, has enthusiastically supported the development of the joint hip fracture service with the division of geriatrics. Dr. John Tracy Watson, professor of orthopedic surgery and a leader in trauma surgery, has spearheaded the development of the service with Dr. Margaret Wilson, assistant professor of geriatric medicine.

All orthopedic patients with hip fractures are closely managed by both services in tandem from the time of admission. Geriatric subspecialty Internal Medicine and Surgical residents work closely in such cases, providing ample opportunity for mutual education. In addition, geriatric subspecialty residents participate in clinical rounds on orthopedic patients. The major goals of this program are to enhance the rehabilitation potential, maintain acceptable quality of life and reduce the morbidity and mortality associated with hip fractures in older patients admitted to Saint Louis University Hospital.

Marie Siegel (seated), a patient in Saint Louis University Hospital, recovers from a recent hip fracture with the help of Drs. Watson (left) and Wilson (center), a team of resident physicians, represented in the photo by Dr. Zia Rahman, and “Loverboy,” her favorite stuffed animal.

SLU Hospital Ranked Best in Region, Among Top 10 in Nation in Geriatric Medicine

Saint Louis University Hospital has been ranked again among the top 10 hospitals in the nation and the best in the region in geriatric medicine for the sixth consecutive year in U.S. News & World Report’s annual ranking of “America’s Best Hospitals.”

“We are especially proud of our top 10 ranking meeting the often complex needs of older adults who must be hospitalized. Older adults tend to have multiple ailments requiring more intensive treatment geared especially toward their individual physiological and psychosocial needs. It is vital that older adults in our region have access to physician specialists and a hospital at the forefront in caring for these complex needs,” says Crystal Haynes, CEO of Saint Louis University Hospital.

Of the 17 specialties that U.S. News & World Report ranks each year, hospitals have to meet any of three entry standards: membership in the Council of Teaching Hospitals, affiliation with a medical school, or availability of at least nine of 17 prescribed technological services.

“We are very pleased that the physicians and staff of Saint Louis University School of Medicine are being recognized nationally for the excellent medical care and programs provided at Saint Louis University Hospital,” says Patricia L. Monteleone, dean of Saint Louis University School of Medicine. “Our commitment to the community remains to provide compassionate and competent care using the latest diagnostic tools and therapies.”
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license it under its generic name, most sell formulations of it under a specific brand name that each company trade-
marks.

However, many companies also market drugs under their generic names, often for a lower price than its brand-name counterpart. The generic equivalent is identical in chemical composition to products sold under the brand names. Ask your doctor if generic equivalents are appropriate.

Be aware, however, that although generic equivalents have the same chemical composition as brand name drugs, this does not mean they have identical therapeutic effects. Always consult your doctor before choosing a generic equivalent over a brand name medication. If you notice that you respond differently to drugs that are supposed to be the same, tell your doctor immediately.

If the medicine isn’t helping, tell your doctor. If you are following instructions and the medication doesn’t help, your doctor needs to know. Do not increase the dose or discon-
tinue the medication unless told to do so.

Tell your doctor about any allergies, reactions, or other problems with medications. An allergic reaction (skin rash, itching, fainting, or swollen lips, eyes, or tongue) strongly suggests you should not take that medicine again. However, non-allergic reac-
tions, such as upset stomach, headache, or fatigue, often may be avoided by taking the same medication in a different form or method. For instance, codeine and erythromycin can upset the stomach in some forms but not others.

Remember that for drugs to be as safe and effective as possible, they must be used in the ways in which they were in-
tended.

As normal aging and disease-related changes progress, medications you once needed may become toxic or no longer beneficial.

Questions? FAX: (314) 771-8575 • email: agingsuccess@slu.edu
Upcoming CME Programs

Multi-Disciplinary Certificate Programs in Geriatrics for Non-Physicians
Fridays, Sept. 5, 19, Oct. 10, 17, 31, Nov. 14 at the West Park Conference Center in Cape Girardeau, Missouri.


All the conferences will be held at Saint Louis University, except as noted. For more information about any of these conferences, please call 314-894-6510.

University of the Third Age Conference Saint Louis Treasures October 11, 2003

“Meet Me in St. Louis” 15th Annual Saint Louis University Summer Geriatric Institute June 1-3, 2004

Been Here? Done This?
Offering regular updates on geriatrics, Cyberounds, an internet-based educational program for physicians and other health providers, is edited by Dr. John E. Morley. The internet address for Cyberounds is: www.cyberounds.com

A cybersite for seniors has been developed in collaboration with Saint Louis University and the Gateway Geriatric Education Center. Besides articles written by geriatric experts, this site provides health updates and an interactive question and answer section. The address for this site is www.thedoctorwillseeyounow. See you in cyberspace!

Senior Safety Solitaire - 2nd Edition
The MOGGEC Injury Prevention Project presents this Second Edition of the multi-cultural game, Senior Safety Solitaire, that promotes both home and personal safety. This game comes complete with pictures of safety problems and solution cards and is designed to provide safety information for older adults, volunteers, para-professionals, and professionals, and can be played by a single player or by a group. Price: $65.

To order, Please send check or money order to:
SLU-HSC, Division of Geriatric Medicine, 1402 S. Grand, Room M238 St. Louis, MO 63104. For more information, please call 314-577-8462.